

Ebola Virus Disease (EVD) level 2 Personal Protective Equipment (PPE) donning and doffing procedure

Scope

This document provides guidance for level 2 PPE to be used by healthcare workers (HCW) in hospitals during care for patients with confirmed EVD, or patients with suspected EVD with high risk (secretory) symptoms (i.e. vomiting, diarrhoea, haemorrhage). Although primarily aimed at clinicians, other hospital staff such as cleaners or security, or visitors, will be required to use this procedure if entering the room of an EVD patient (i.e. confirmed, or suspected with high risk symptoms).

Key principles

The following key principles must be followed when using personal protective equipment (PPE).

Donning (putting on) PPE:

- > Have a consistent sequence.
- > Ensure PPE selected is an appropriate size so movement is not restricted.
- > PPE must be fitted correctly (especially respirators, if used).
- > Take your time to put on your PPE.

Wearing PPE:

- > **Do not** adjust your face protection (face shield, mask) whilst in the patient's room.

Doffing (taking off) PPE:

- > PPE should be visually checked for damage or tears.
- > Have a consistent sequence.
- > Minimise contact with contaminated surfaces of the PPE.
- > Take your time to remove PPE to avoid contamination of scrub suit and/or skin.
- > Perform hand hygiene prior to removing any PPE from your face.
- > Follow the "Ebola: Management of blood and body fluid exposures" protocol if self-contamination occurs during PPE removal, if a breach in PPE (malfunction or tear) occurs or higher risk exposure (e.g. needlestick) occurs.

Role of the observer ("buddy")

The level of PPE required by the observer will depend on whether they will assist in patient care. For example:

- > If there is only one HCW in the patient's room then full PPE should be worn by the observer to be ready to assist at any time.
- > If there are two HCWs in the patient's room then hoods and leg covers are not required by the observer (refer to observer donning and doffing section).

The observer will be responsible for:

- > Assisting the HCW with donning PPE prior to entering the patient's room:
 - Ensure the HCW puts on appropriate PPE in the correct order according to the checklist. Each item should be checked off on the list.
 - Assist where required e.g. fastening the gown at the back.
 - Perform a final check of all PPE prior to the HCW entering the patient's room to ensure all skin and clothing is covered. This includes bending, stretching, etc., to ensure PPE remains in place during normal activity. If there are any concerns, do not allow the HCW to enter the patient's room.

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- > Observe HCW at all times whilst in the patient's room for any breaches in PPE e.g. HCW touches face or dislodges PPE.
- > Assist the HCW with doffing PPE after leaving the patient's room:
 - Check all PPE worn by the HCW for damages or tears.
 - Ensure the HCW removes PPE in a safe manner by calling out instructions according to the checklist below. Each item should be checked off on the list.
 - Assist HCW with untying the gown, if required.
 - Assist HCW with the removal of leg covers, if required.
 - Clean the doffing chair with detergent/disinfectant wipe(s) after use.
- > Assist with waste disposal from the patient's room:
 - Depending on the local protocol and layout of the dedicated area, the observer may assist with the removal of waste from the patient's room. This may include taking the clinical waste bag from the patient's room and placing into the designated 240 litre yellow clinical waste bin in the doffing zone.

Required facilities and equipment

Two separate donning and doffing zones are recommended (i.e. clearly identified "clean" and "dirty" zones) to reduce the risk of any contamination of the donning zone.

Donning zone

The donning zone should include:

- > Alcohol-based hand rub (ABHR).
- > Mirror.
- > One chair or stool.
- > Bowl/container/bag to collect all personal items e.g. phone, jewellery, pens, pager etc.
- > Scrubs (top and bottom) – depending on the layout these may be available in a separate changing/locker room.
- > Trolley stocked with PPE and other essential items.

HCW PPE:

- Impervious long-sleeved gown (large enough to cover across the back and below the knees to mid-calf).
- Apron.
- Full face shield which is impervious to fluids.
- Correctly fitted P2/N95 respirator.
- Impervious hood (covers the head and neck, outlines the face, extends to shoulders).
- Disposable gloves of all sizes. These should include a longer length, non-sterile or sterile gloves to ensure the glove covers the cuff of the gown.
- Fluid resistant, non-slip leg coverings which cover the lower leg area and shoes.

Observer PPE:

- Impervious long-sleeved gown.
- Face shield which is impervious to fluids and a fluid resistant surgical mask OR a combined fluid resistant surgical mask with attached visor.
- Disposable gloves of all sizes. These should include longer length non-sterile or sterile gloves to ensure the glove covers the cuff of the gown.

Doffing zone

The doffing zone should include:

- > Alcohol-based hand rub.
- > Detergent/disinfectant wipes.
- > 1 chair or stool.
- > Cover for chair or detergent/disinfectant wipes.
 - Yellow 240 litre clinical waste bin. The lid can be left open during doffing as it poses no infection risk. However, the lid should be closed and the bin wiped over with detergent and disinfectant (detergent/disinfectant wipes can be used) prior to removal from the area.
- > Optional: doffing mat (e.g. a large Kimguard™).

Checklist – HCW

Donning

For an EVD patient (i.e. confirmed or suspected with high risk symptoms), put on PPE using the following precise order.

Ensure the HCW is well hydrated and has been to the toilet prior to commencing procedure.

Step	Description	Check
1. Remove personal clothing and items. Put on scrub suit. Secure prescription glasses, if worn, with tape. Tie hair back off face	Put personal items into bowl/container/bag. These include all jewellery (including wedding band), watch, mobile phone, pager, pens, ID tag, etc. No personal items should be taken into the room.	
2. Inspect PPE prior to donning	Observer reviews the donning procedure with the HCW. Visually inspect the PPE for damage or tears. Do not use damaged or torn PPE. Ensure correct size PPE is selected.	
3. Put on leg/shoe covers	Sit on stool and apply leg covers. Ensure the non-slip surface faces the floor. If straps are available, tie firmly around the leg. Ensure straps are comfortable and are not a trip hazard.	
4. Perform hand hygiene	Use ABHR and allow to dry.	
5. Put on inner gloves	Use long cuffed or sterile gloves. If possible, use different coloured gloves to assist with visualising breaches.	
6. Put on impervious long sleeved gown	Gown should be of sufficient length to sit mid-calf. Back should be covered by wrapping the gown around the waist and tying at the side. Observer may assist with donning.	
7. Put on P2/N95 respirator	Select the correctly fitted P2/N95 respirator. Ensure a "fit check" is performed. Adjust if necessary.	
8. Put on hood	Ensure the hood covers all of the hair and ears and extends past the neck and shoulders. Aim for the respirator to go through the face hole when applying hood. Use the mirror to check. Go through a range of motions to ensure there is sufficient range of movement whilst all areas of the body remain covered.	
9. Put on outer apron (if needed)	Put on an impervious apron, large enough to cover the front of the body and legs. <i>Note: Outer apron needs to be used when large amounts of body fluids are present.</i>	
10. Put on outer gloves	Put on second pair of gloves with extended cuff. Ensure the cuffs are pulled over the sleeve of the gown. Sterile gloves can be used for better fit.	
11. Put on face shield	The length of the face shield should be long enough to adequately cover well below the chin.	
12.STOP and CHECK	After completing the process the integrity of the PPE is verified by the observer. The HCW should be comfortable and go through a range of motions to ensure there is sufficient range of movement whilst all areas of the body remain covered. The HCW should use the mirror as a final check prior to entering the patient's room. <i>Note: If the PPE does not pass this check then DO NOT enter the patient's room. Adjust PPE then recheck.</i>	

Doffing

Take off PPE using the following precise order.

Note: under normal circumstances disinfection of gloved hands is not recommended. Disinfection of gloved hands should be considered a practice applicable only when caring for an EVD patient (i.e. confirmed, or suspected with high risk symptoms).

Ensure area is prepared e.g. chair, doffing mat, ABHR, detergent/disinfectant wipes, clinical wast bin are available.

Step	Description	Check
1. Wipe gloves using a detergent/disinfectant wipe	Discard the wipe into the clinical waste bin in the patient's room. <i>Note: This step is only required if removing an outer apron</i>	
2. Remove outer apron (if used) in patient's room	Remove apron (tear from the top) by rolling the apron from inside to outside. Discard apron into the clinical waste bin in the patient's room. Take care to avoid contaminating gloves.	
3. Wipe gloves using a detergent/disinfectant wipe, discard wipe, then exit patient's room	Discard the wipe into the clinical waste bin in the patient's room. Exit patient's room into the doffing area.	
4. Step into doffing zone	The area should be large enough so there is plenty of room to move.	
5. Inspect your PPE	Observer to assist and record any breaches in PPE.	
6. Remove outer gloves	Slip finger underneath outer glove and carefully remove without touching outside of glove. Discard into designated clinical waste bin in doffing zone.	
7. Inspect and disinfect inner gloves	Observer to record any breaches in PPE.	
8. Remove hood and face shield	Grasp the back of the hood and the straps of the face shield from the MIDDLE of the head and bend forward. Slowly remove both items and discard into clinical waste bin in doffing zone.	
9. Disinfect inner gloves	Use ABHR and allow to dry. Observer dispenses the ABHR or use an automated dispenser.	
10. Remove gown carefully	Untie gown straps. Observer can assist with this. Remove gown by placing hands on the inside of the gown, carefully folding the gown into a bundle with the inside facing out. Discard into clinical waste bin in doffing zone.	
11. Disinfect inner gloves	Observer to record any breaches in PPE.	
12. Remove leg/shoe covers. Observer can assist with this process	<ul style="list-style-type: none"> > Sit on DOFFING CHAIR. > Roll the top of the leg covers down for two turns (both legs). > Carefully untie straps and remove the leg covers by grasping the heel area and pulling away from body. > Discard leg covers into clinical waste bin in doffing zone. > Place feet directly onto the floor away from the doffing mat/zone. <p>Hint: it is easier to remove the leg/shoe cover closest to the non-doffing zone first.</p> <p><i>Note: if the observer has assisted to remove the leg covers, then the observer's gloves must be changed. HCW must wait for observer to finish this process.</i></p>	

13. Disinfect inner gloves	Use ABHR and allow to dry. Observer dispenses the ABHR or use an automated dispenser.	
14. Remove inner gloves	Slip finger underneath inner glove and carefully remove without touching hands. Discard into the clinical waste bin in doffing zone.	
15. Perform hand hygiene	Use ABHR and allow to dry.	
16. Remove P2/N95 respirator	Grasp respirator straps from the back of the head, bend forward so the mask slips off the head away from face and discard into clinical waste bin in doffing zone.	
17. Perform hand hygiene	Perform a soap and water hand wash.	
18. HCW can leave the doffing zone wearing shoes and scrubs. <i>Remember to rehydrate if feeling hot</i>		
19. Follow the "Ebola: Management of blood and body fluid exposures" protocol if self-contamination occurs during PPE removal, if breaches in PPE (malfunction or tear) occurs or higher risk exposure (e.g. needlestick) occurs.		
20. Shower at the end of every shift if high risk patient care procedures have been performed, if the HCW has spent extended periods of time in the patient's room, or if a breach in PPE occurs.		

Checklist – observer

Donning

Put on PPE using the following precise order.

Step	Description	Check
1. Perform hand hygiene	Remove jewellery and wrist watches prior to commencing procedure.	
2. Put on gown	Long-sleeved, impermeable gown.	
3. Apply face protection	A fluid-repellent surgical mask with attached visor is recommended.	
4. Put on 2 pairs of gloves	> Put on first pair and tuck under the cuffs of the gown. > Put on second pair of gloves with longer cuff. Ensure the cuffs are pulled over the sleeve of the gown. Sterile gloves can be used for better fit.	
5. STOP and CHECK	Adjust if does not pass check. Then recheck.	

Doffing

Take off PPE using the following precise order.

Step	Description	Check
1. Wipe chair (top, seat and then legs) in doffing zone and/or remove cover	Use detergent/disinfectant wipe. Discard wipe into clinical waste bin in doffing zone.	
2. Clean up doffing zone	Pick up corners of used doffing zone mat (if used) and gather corner to corner. Discard into the clinical waste bin in doffing zone.	
3. Disinfect outer gloves with ABHR (or wipe with detergent/disinfectant wipe if visibly soiled) then remove outer gloves	Use ABHR and allow to dry (or wipe gloves if visibly soiled). Remove outer gloves; slip finger underneath outer glove and carefully remove without touching inner glove. Discard into clinical waste bin in doffing zone.	
4. Remove gown	Remove by placing hands on the inside of the gown, carefully fold the gown into a bundle with the inside facing out. Discard into the clinical waste bin in doffing zone.	
5. Remove inner gloves	Slip finger underneath inner glove and carefully remove without touching hand. Discard into the clinical waste bin in doffing zone.	
6. Perform hand hygiene	Use ABHR and allow to dry.	
7. Remove face protection	Carefully untie the straps, bend forward and remove slowly in a downward direction and away from the face. Discard into the clinical waste bin in doffing zone.	
8. Perform hand hygiene	Perform a soap and water hand wash.	