

# Interim PPE guidelines for Retrieval Services Queensland staff managing patients with Ebola virus disease

## Purpose

This guideline provides recommendations regarding personal protective equipment (PPE) for Retrieval Services Queensland (RSQ) staff when providing care for suspected, probable or confirmed cases of Ebola virus disease (EVD). It also outlines recommendations for the process of donning and removing PPE.

## Scope

This guideline provides information for all RSQ staff who, in the course of their work, may have contact with a suspected, probable or confirmed EVD case or a potentially contaminated environment. These guidelines for RSQ staff vary from those developed for healthcare workers who manage patients in Queensland Health facilities. This is because RSQ staff work in environments such as airfield tarmacs where factors such as wind and heat may affect safety when using certain PPE.

## PPE recommendations for RSQ staff managing patients with EVD

PPE is one of the key elements for preventing the spread of communicable diseases such as EVD to healthcare workers (HCWs). Strict compliance with the documented processes for donning and removing PPE is critical to staff safety. This guideline provides recommendations regarding PPE use, and documents the steps HCWs should follow when using these items.

The following principles should be adhered to in relation to PPE:

- PPE combinations should ensure that the HCW has no skin exposed.
- The HCW should be comfortable and ensure that there is sufficient range of movement for all clinical contingencies. The HCW should go through a range of movements to ensure all areas of the body remain covered.
- PPE should meet relevant Australian Standards and be provided in a range of sizes.
- All PPE should be disposable where possible.
- PPE training should include the correct use of the powered air purifying respirator (PAPR).
- Written protocols should clearly detail the procedures for donning and removing PPE.
- Processes for managing PPE fatigue including heat stress should be established.
- Training should involve repetition of donning and removing PPE until the HCW is deemed competent and they are confident with both processes. This training should be repeated periodically to ensure staff competency remains current.
- A trained person should supervise the donning and removing process every time. In this document, this person is referred to as a trained observer.
- The trained observer should not undertake patient care and should monitor the HCWs who are providing care to the patient to ensure that any breaches in PPE are identified promptly and corrective action is taken. The trained observer should wear PPE at all times during the donning and removing process.

## RSQ staff PPE

- Fluid-resistant or impermeable coverall.
- PAPR including a hood that covers all of the hair and the ears and extends past the neck to the shoulders.
- Fluid-resistant or impermeable boot covers that extend to at least mid-calf and have a sole suitable for use in the outdoor environment.
- Two pairs of non-sterile long cuff gloves (nitrile gloves are preferable over latex).

## Trained observer PPE

- Long sleeved fluid-resistant or impermeable gown that extends to at least mid-calf.
- Full-length face shield/goggles.
- Two pairs of non-sterile long cuff gloves.
- Shoe covers.

For the donning and removal of PPE used by the trained observer see [Interim PPE guidelines for managing Ebola virus disease patients](#).

## Additional considerations

At the commencement of their shift the HCW should change into disposable scrubs (or re-useable ones if a laundering process has been established) and dedicated washable plastic or rubber footwear. All personal items should be removed (e.g. jewellery, watches, lanyards, mobile phones, pagers, pens). Hair should be tied back out of the face and eyes; this should include fringes.

If a breach of PPE occurs during the course of patient care the HCW should immediately and safely stop any current tasks, leave the patient care area and safely remove PPE under the supervision of the trained observer. The HCW should then wash the contaminated area as soon as possible with alcohol based hand rub (ABHR), a TGA registered disinfectant wipe or water if mucous membranes are exposed.

## HCW PPE donning process

1. The donning process should be conducted in a designated area if possible, under the supervision of a trained observer who observes that the PPE is serviceable and correctly donned resulting in no exposed skin. A checklist should be utilised—see Appendix.
2. The trained observer reviews the donning sequence with the HCW before the HCW begins and reads it to the HCW in a step-by-step fashion as each item of PPE is donned. All PPE should be visually inspected to ensure:
  - all required PPE items are available
  - all items are complete, intact and in a serviceable condition
  - sizes selected are correct for the HCW.
3. The HCW performs hand hygiene with ABHR. When using ABHR, hands should be allowed to dry before moving to the next step.
4. The HCW checks that the battery for the TR-300 PAPR unit has adequate charge and attaches it to the TR-300 PAPR unit.

5. The filter and pre-filter is placed into the TR-300 PAPR unit, then the air flow and air inlet is checked.
6. The HCW puts on boot covers that extend to at least mid-calf and have a sole suitable for use outdoors.
7. The HCW puts on the coverall. It should be large enough to allow unrestricted freedom of movement.
8. The HCW secures the PAPR TR-300 unit around the waist, ensuring that both the unit and the belt clip are located at the HCW's back.
9. The trained observer attaches the breathing tube to both the TR-300 unit and the hood and turns the unit on.
10. The hood is put on, ensuring that it extends past the neck to the shoulders and covers all skin.
11. The HCW then puts on two pairs of gloves, ensuring that the first pair (inner gloves) is **under** the cuff of the coverall and that the second pair (outer gloves) are **over** the cuff/sleeves of the coverall.
12. After completing the donning process, the integrity of the ensemble should be verified by the trained observer. The HCW 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. The HCW and trained observer should ensure that the PAPR unit is working correctly.

## HCW PPE removal process

The PPE removal is to be performed in a designated PPE removal area and all disposable PPE should be disposed of into clinical waste. If TGA registered disinfectant wipes are used for decontamination of PPE, including gloves, the trained observer should hand these to the HCW.

1. The removal process is conducted under the supervision of a trained observer who reads aloud each step of the procedure and confirms visually that the PPE has been removed properly (see Appendix for a checklist).
2. Prior to removing PPE, the trained observer must remind the HCW to avoid reflexive actions that may put the HCW at risk, such as touching their face or adjusting their hair. The trained observer should repeat it verbally during the removal.
3. Although the trained observer should minimise touching the HCW or their PPE during the removal process, he/she may assist with removing specific components of the PPE. The trained observer must always wear PPE. The trained observer disinfects the outer-gloved hands immediately after handling any PPE.
4. The HCW should remove PPE while standing on an absorbent mat that is secured to the floor and clearly identified as a contaminated area.
5. The observer and HCW should inspect the PPE to assess for visible contamination, cuts or tears before starting to remove it. If any PPE is visibly contaminated, then it should be disinfected using a TGA registered disinfectant wipe.
6. The outer gloves should be disinfected with either a TGA registered disinfectant wipe or ABHR.
7. The trained observer should then turn off the PAPR unit and disconnect the breathing tube from both the hood and the TR-300 PAPR unit and discard it into clinical waste. The trained observer should disinfect their gloves with either a TGA registered disinfectant wipe or ABHR.
8. The HCW removes the hood by grasping the top of the hood with both hands, tilting the head down and pulling the hood in a slow but continuous movement over the head, and discards it into clinical waste.

9. The HCW should disinfect their gloves with either a TGA registered disinfectant wipe or ABHR.
10. The HCW should remove the TR-300 unit and place it into a rigid sealable container.
11. The outer gloves should then be disinfected with either a TGA registered disinfectant wipe or ABHR.
12. The flap over the coverall zip should be wiped with a TGA disinfectant wipe and allowed to dry prior to removal of the coverall.
13. The outer gloves should then be disinfected with either a TGA registered disinfectant wipe or ABHR.
14. The HCW should then remove and discard the outer gloves taking care not to contaminate the inner gloves during the removal process.
15. The inner gloves should be inspected for visible contamination, cuts or tears. If an inner glove is visibly soiled, cut or torn, then it should be disinfected with either a TGA registered disinfectant wipe or ABHR. The soiled, cut or torn inner gloves are then removed and discarded taking care not to contaminate the bare hands during the removal process. Hand hygiene with ABHR on bare hands is performed, and a clean pair of gloves is donned. If no visible contamination, cuts or tears are identified on the inner gloves, the inner-gloved hands are disinfected with either a TGA registered disinfectant wipe or ABHR.
16. To remove the coverall, the HCW should open the flap that covers the coverall zip then tilt the head back to reach the zipper or fasteners. The coverall is completely unzipped or unfastened and removed by turning it inside out while rolling it down. The HCW must avoid contact of clothing or scrubs with the outer surface of the coverall during the removal, and should ensure that their clean gloved hands are only touching the inside of the coverall.
17. The inner gloves are disinfected with either a TGA registered disinfectant wipe or ABHR.
18. While sitting down or leaning on an appropriate surface, the boot covers are removed and discarded and the HCW steps off the mat into a non-contaminated area.
19. The inner gloves are disinfected again with either a TGA registered disinfectant wipe or ABHR.
20. While sitting down, a TGA registered disinfectant wipe is used to wipe down every external surface of the shoes.
21. The inner gloves are disinfected with either a TGA registered disinfectant wipe or ABHR. Then the gloves are removed and discarded taking care not to contaminate the bare hands during the removal process.
22. Hand hygiene with ABHR is performed.
23. The trained observer performs a final inspection of the HCW for any indication of contamination of the surgical scrubs or clothing.
24. The HCW should shower as soon as possible, particularly in situations where there has been a breach in the HCW's PPE. If this is not possible immediately, the HCW should change into clean scrubs or clothing in the interim.

## Review

This guideline is due for review on 23 June 2016.

**Date of last review:** N/A

**Supersedes:** New document

## Business area contact

Communicable Diseases Unit, Chief Health Officer Branch

## Approval and implementation

### Policy custodian:

Senior Director, Communicable Diseases Unit, Chief Health Officer Branch

### Approving officer:

Dr Heidi Carroll

Acting Senior Director, Communicable Diseases Unit

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## Version control

Version	Date	Prepared by	Comments
1.0	13/01/2015	SHECC EVD IMT	New document
2.0	23/06/2015	CDUEVDIMT	Addition of 2 steps to the removal process

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## Appendix – PPE donning and removal checklist

### Donning process for the HCW:

1.  Wear scrubs (if used) and remove personal items (e.g. watch, jewellery etc.); hair is tied back and out of the eyes.
2.  Inspect PPE prior to donning to ensure it is intact, serviceable and is the correct size for the HCW.
3.  Perform hand hygiene.
4.  Check that the battery for the TR-300 PAPR unit has adequate charge. Attach to the TR-300 PAPR unit.
5.  Place the air filter and pre-filter into the TR-300 PAPR unit and perform checks on both the air flow and air inlet.
6.  Put on boot covers that extend to at least mid-calf and have a sole suitable for use outdoors.
7.  Put on coverall.
8.  Put on PAPR unit. Secure the unit around the waist and ensure that the unit and the belt clip are located at the HCW's back.
9.  **Trained observer** attaches the breathing tube to both the TR-300 unit and the hood and turns the unit on.
10.  Put on hood and ensure that all skin is covered.
11.  Put on two pairs of gloves, ensuring that the first pair is under the cuff of the coveralls and the second pair is over the cuff of the coveralls.
12.  Verify integrity of PPE ensemble, ensure that all skin is covered and the PAPR unit is working correctly.

### Removal process for the HCW:

1.  Prior to removing PPE, the trained observer must remind the HCW to avoid reflexive actions that may put them at risk, such as touching their face or adjusting their hair. The trained observer should repeat it verbally during the removal. The HCW should remove PPE while standing on an absorbent mat that is secured to the floor and clearly identified as a contaminated area.
2.  Inspect PPE to check it is intact and identify and remove any gross contamination with a TGA registered disinfectant wipe.
3.  Disinfect outer gloves with a TGA registered disinfectant wipe or alcohol based hand rub (ABHR).
4.  **Trained observer** turns off the PAPR unit and disconnects the breathing tube from the PAPR unit and hood and places it into clinical waste. The trained observer disinfects their gloves with

either a TGA registered disinfectant wipe or ABHR.

5.  Remove the hood by grasping the top of it, tilting head down and pulling it off the head in a slow continuous movement, avoiding contact with the face.
6.  Disinfect gloves with a TGA disinfectant wipe or ABHR.
7.  Remove the TR-300 unit and place it into a rigid, sealable container.
8.  Disinfect gloves with a TGA disinfectant wipe or ABHR.
9.  The flap over the coverall zip should be wiped with a TGA disinfectant wipe and allowed to dry prior to removal of the coverall.
10.  Disinfect and then remove outer gloves ensuring inner gloves are not contaminated in the process.
11.  Disinfect and inspect inner gloves. If inner glove is soiled or torn, remove inner gloves, perform hand hygiene and replace with a new set of gloves.
12.  Remove coverall by opening the flap that covers the coverall zip and then tilt head back to reach zipper or fastener. Unzip or unfasten coverall completely and remove it by turning it inside out while rolling it down. Avoid contact between clothes or scrubs and the outside of the coverall. Ensure that your clean inner-gloved hands are touching only the inside of the coverall.
13.  Disinfect inner gloves with TGA registered disinfectant wipe or ABHR.
14.  While sitting down or leaning on an appropriate surface, remove and discard boot covers and step off the mat into a non-contaminated area.
15.  Disinfect inner gloves with TGA registered disinfectant wipe or ABHR.
16.  While sitting down, disinfect footwear by wiping all external surfaces with a TGA registered disinfectant wipe.
17.  Disinfect and remove inner gloves.
18.  Perform hand hygiene on bare hands.
19.  **Trained observer** inspects HCW to ensure no contamination of the clothing or scrubs occurred.
20.  Describe patient care activities performed and identify any exposure concerns.
21.  Leave PPE removal area and shower or if this is not immediately possible, change into clean scrubs or clothing in the interim.

Patient care activities:

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Staff member name: \_\_\_\_\_

Date: \_\_\_\_\_