

Standard Operating Procedure for the Powered Air Purifying Respirator (PAPR)



Contents

1	Scope.....	2
2	Background.....	2
3	Issuing and Training	2
4	Equipment and Storage	3
5	Decontamination Process.....	10
6.	Responsibilities	12
7	Audit and Review.....	12
7.2	Data relating to asset tracking and rollout will be compiled within a centrally accessible Power BI Dashboard for local areas to review.	12

1 Scope

- 1.1. The purpose of this procedure is to provide consistency relating to the arrangements and processes relating to the Trust issued Powered Air Purifying Respirator (PAPR/Powered Hood).
- 1.2. This document defines the PAPR/Powered Hood and any regimens which support infection prevention and control (IPC) and maintenance.
- 1.3. This SOP should be read in conjunction with the current Trust IPC and Health and Safety guidance as well as the PAPR training package.

2 Background

- 2.1. Ambulance clinicians are required to have direct contact with patients who may have a disease or infection that could be airborne and transmissible.
- 2.2. Where it is not possible to prevent exposure to hazards, employers have a responsibility under the Health and Safety at Work Act 1974 to provide adequate protection to minimise the risk. A range of Personal Protective Equipment (PPE) is therefore available to all frontline staff, this includes fluid repellent surgical masks, FFP3 masks and personally issued PAPR/Powered Hood.
- 2.3. In September 2020 the Trust decided to issue all frontline staff with a personal issue hood and hose to replace the use of reusable FFP3 masks. Benefits include a reduction in the reliance on the NHS push pallet system during a pandemic, and reduced abstractions attributed to fit testing on disposable masks.
- 2.4. The use of the reusable PAPR/Powered Hood is indicated where Level 3 PPE is required. The PAPR/Powered Hood will replace the current disposable FFP3 masks and should be worn in any situation where the FFP3 mask would have been utilised prior to the PAPR rollout.
- 2.5. Frontline clinicians may upgrade from Level 2 to Level 3 PPE at any time based on an individual situational risk assessment.

3 Issuing and Training

- 3.1. Frontline staff will be allocated a personal issue PAPR hood and hose. This provides a replacement to disposable PPE solutions.
- 3.2. The powerpack, belt, and filters will be vehicle based with batteries charged at local reporting sites.

- 3.3. Prior to the issuing of Personal issue hoods all staff will be required to complete a thirty minute online Powered Air Respirators (PAPR) familiarisation training package.
- 3.4. Upon completion of the familiarisation training the issuing manager will record the individual asset numbers of the hood & hose on the PAPRS Individual Supply Log Form which will enable all PAPRS to be asset tracked throughout their serviceable life and ensure service intervals are maintained.
- 3.5. **Student Paramedics** on placement with the Trust will receive a personal issue hood and hose, this should be returned to the Trust at the end of the educational program unless the individual gains employment with the Trust.
- 3.6. **Response Capable Managers (RCM)** will be allocated a personal issue hood and hose to facilitate clinicians undertaking shifts on Solo Response Vehicles and Dual Crewed Ambulances. The power units will not be personally issued to RCM cars. RCM's will need to continue to be fit tested annually and ensure they have access to a stock of FFP3 solutions.
- 3.7. **RCM's** who are not successfully fit tested on an available disposable mask must be portacounted. In the event that this is unsuccessful RCM's should contact PPE@Secamb.nhs.uk with confirmation of their portacount test, to be issued with an alternative solution.
- 3.8. Following initial rollout provision will be made for each Operating Unit to have access to several spare hoods and hoses which will not be personal issue.
- 3.9. Spare hoods and hoses should be stored to be used in the event of a breakage or malfunction of a personal issue hood or hose, and where stocks allow, to support third crewing if appropriate.
- 3.10. When a spare is used and returned the item should be disinfected as in Section 6 and quarantined for 72 hours prior to further use.

4 Equipment and Storage

- 4.1. Individual issue hoods and hoses should be cleaned as per Section 6 prior to storage.
- 4.2. The PAPR/Powered Hood and hose should be stored in the box provided to avoid breakage. If breakage occurs a Datix must be completed immediately.
- 4.3. Powerpacks and filters will be allocated to each operational vehicle.

4.4. Additional powerpacks and filters will be available at reporting sites for temporary use by cohorts such as students, response capable managers, and observers.

4.5. **Make Ready Centre Managers** should develop a site-specific battery management process for each of their sites to ensure that operational staff have access to sufficiently charged batteries at the start of each shift.

4.6. **Powered Hood Filters**

4.7. Particle filters trap and hold particles (dust, mist, fume, smoke, micro-organisms) from the air flowing through them. Large particles are easier to trap than small ones. These filters can be used against both solid particles and liquid particles (mists, fine sprays and aerosols).

4.8. Particle filters are classified according to their efficiency. The filter will be marked with the letter P (for particle) and a number to indicate efficiency, or the level of protection provided:

- P1 = Low efficiency. *
- P2 = Medium efficiency. *
- P3 = High efficiency

* Do not use against fume unless specified by manufacturer.

4.9. **Changing filters**

4.10. Depending on the type of particles the filter is exposed to will determine when the filter is likely to require changing.

4.11. This will vary depending on the environment they are used in i.e. clinical settings or industrial settings with high dust concentrations.

4.12. During a pandemic the filters should be changed at either 6 months or the length of the pandemic, whichever is sooner.

4.13. When operating in the clinical environment post pandemic the Trust will assess the usage of the filters and recommend a timeframe for filter changing within their expiry date.

4.14. **Individual Requirements**

4.15. It is recognised that there are a small number of occasions where an individual may have circumstances which impact their ability to wear a powered hood. These individuals should meet with their own line manager to discuss these circumstances and utilise support from occupational health providers and reasonable adjustment passports if required.

- 4.16. For individuals who use reading glasses and require additional support as they are unable to remove glasses whilst the hood is in place, support should be sought from their line manager and HR to access vouchers for bifocal lenses.

4.17. **Procedure for Use**

- 4.18. ***Please note - the PAPR is not a suitable device to use within a non-respirable atmosphere (one where the oxygen level is diminished) therefore the PAPR must not be considered as a suitable device to enter scenarios such as Fires or Hazardous Materials Incidents including Individual Chemical Exposure in cars or confined spaces. In cases such as this, emergency assistance must be requested from those with suitable protection, likely to be HART and Fire and Rescue Services using Breathing Apparatus.***

- 4.19. Ensure that the PAPR powerpack bag is tagged as unused, with an intact bag seal (tag) ready for operational use. If the PAPR powerpack bag is not sealed with a tag, staff must inform EOC and clean and decontaminate the available powerpack/s. In accordance with section 6 of this SOP.

- 4.6 Check (or book out depending on the local battery management system in place) that charged batteries are available for both units.

Prior to use:

- 4.7 Carry out a full visual inspection of all areas to ensure that there is no damage, such as cracks or withered seals etc.
- 4.8 Ensure that the filters, hose, and power pack are attached correctly, lined up with any guides and do not come loose on movement.
- 4.9 The PAPR is positive pressure and this will be felt when the powerpack is activated. Ensure that no resistance is felt when breathing.
- 4.10 Filters should not be used if on inspection they rattle, appear damaged, are visibly soiled or have become waterlogged at any point.
- 4.11 Take the power unit from the case and ensure the waist loops are not twisted.
- 4.12 Securely fasten the belt around your waist and clip into place.
- 4.13 Take your hood and hose from the case and securely attach the hose to the power unit.

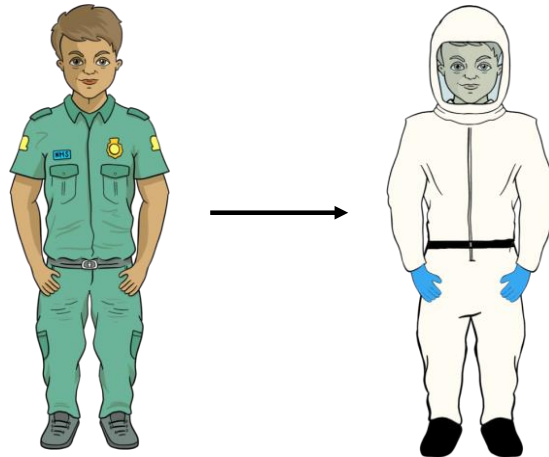
- 4.14 Three beeps and green battery lights confirm that the air flow is at a sufficient rate.
- 4.15 Secure the hood in position by placing your forehead against the browband and by using the top location tag.
- 4.16 Move the power unit so that it is behind you. Ensure that the hose is not kinked and will not inhibit movement and secure and loose belt strap into the hoop provided.

Donning

- 4.17 Where Level 3 PPE is required (e.g. for an aerosol generating procedure), the PAPR must be used in conjunction with other PPE, which must be donned in the following order:
- Perform Hand hygiene
 - Coverall. Leaving the hood down
 - PAPR
 - Perform Hand hygiene
 - Disposable gloves. Utilise the over-sleeves if required

AMBULANCE SECTOR LEVEL 3 PPE POWERED RESPIRATOR HOOD - DONNING

DONNING LEVEL 3 PPE POWERED RESPIRATOR HOOD



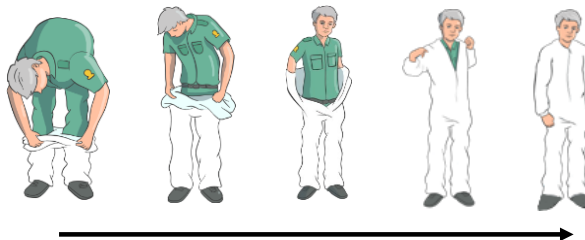
DONNING ORDER

PERFORM HAND HYGIENE

Step 1 - Don fluid repellent coverall

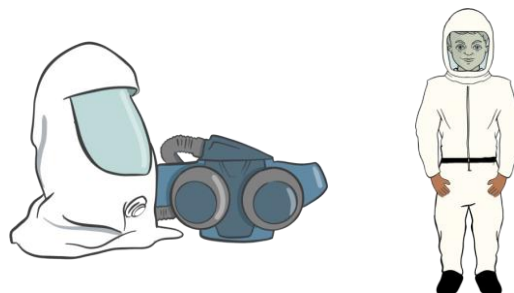
- Step into coveralls
- Pull up over waist
- Insert arms into sleeves, if thumb hoops available then hoop these over your thumbs.
- Pull up over the shoulders
- Fasten zip all the way to the top

It is not necessary to apply the hood of the coverall as there is no requirement for airborne transmission. This should be tucked into the back of the coverall.



Step 2 - Don powered respirator hood

- Perform safety checks as per guidance sheet
- Apply the belt-mounted respirator unit to the waist and buckle securely and comfortably. *Ensure you can easily move the unit to your side to assist with the next steps*
- Attach the breathing tube and switch on the powered respirator ensuring a solid green light appears after the testing cycle
- Put on the respirator hood
- Ensure the respirator hood is comfortable and secure



Step 3 - Don disposable gloves

- Perform Hand Hygiene
- Select according to size
- Apply gloves and extend to wrist, ensure cuff of coverall is covered



Doffing

4.18 It is important that PPE is removed in an order that minimises the potential for cross- contamination. When doffing PPE, follow the order below with the support and observation of your colleague to ensure the risk of cross- contamination is minimised. Hand decontamination helps to prevent the spread of infection -use alcohol hand rub between removing items of PPE and wash hands with soap and water as soon as possible

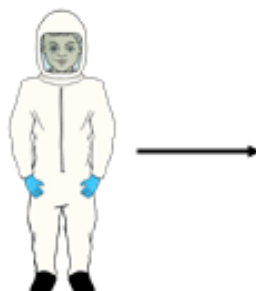
- Remove disposable gloves
- Perform Hand hygiene
- Remove PAPR
- Perform Hand hygiene
- Remove fluid repellent coverall
- Perform Hand hygiene

4.19 A visual example of donning and doffing using PAPR/Powered hoods is available in this short video:

<https://web.microsoftstream.com/video/7986d208-c91d-44c1-9d62-f6e8194ffaaf>

AMBULANCE SECTOR LEVEL 3 PPE POWERED RE SPIRATOR HOOD - DOFFING

DOFFING LEVEL 3 PPE POWERED RE SPIRATOR HOOD



DOFFING ORDER

Step 1 - Remove disposable gloves

- Grasp the outside of the glove with the opposite gloves hand and peel off
- Hold the removed glove in the gloved hand
- Slide the fingers at the un-gloved hand under the remaining glove at the wrist
- Peel the second glove off over the first glove and discard



PERFORM HAND HYGIENE

Step 2 - Remove respirator hood

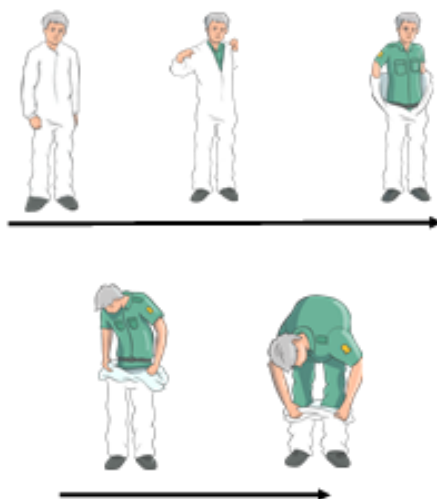
- Reach to the rear of the head to firmly grip the hood, reach under the chin to find the tag at the bottom of the hood
- Use both hands to move the hood in a forward and downward motion away from the face/ head
- Unbuckle the waist belt
- Switch off the respirator



PERFORM HAND HYGIENE

Step 3 - Remove fluid repellent coverall

- Tilt the head back and with one hand pull the coveralls down and away from your body
- With the other hand, run your hand up the zip until you reach the top and unzip the coveralls completely without touching any skin or uniform following the guidance of your crewmate
- Remove coveralls from top to bottom. After freeing shoulders, pull arms out of the sleeves
- Roll the coverall, from the waist down and from the inside of the coverall, down to the top of the boots, taking care to only touch the inside of the coveralls
- Use one boot to pull off the coverall from the other boot and vice versa then step away from the coverall ensuring the coverall has been removed and dispose of it as clinical waste.
- NB: It may be beneficial to cut small slits in the bottom of the legs of the coveralls to allow for easier removal



PERFORM HAND HYGIENE

5 Decontamination Process

5.1.

Decontamination and Cleaning Process: Powered Hoods and Hose

- RPE will only protect the wearer if it is used correctly, decontaminated, cleaned and maintained to provide the required protection.
- Follow the below guidance to decontaminate and clean post use.



Treat all used RPE as potentially contaminated and keep it separate from other equipment

Following every use

- Following use, decontaminate / clean the whole unit including hood and hose using a Clinell Wipe.
- Using the S shape method ensure all areas of the hood and hose are fully cleaned and that they remain wet for at least 60 seconds.
- Air dry before storing away and continue with your shift.

Regular Hygiene Clean / Disinfection for the Hood and Hose

- Staff should be aware that as the hood and hose may not be used on a regular basis it is recommended that a regular clean is undertaken, as described above, to ensure it is ready for use when required.



Second stage: Dry

- Air dry in a non-contaminated atmosphere.
- Store appropriately in designated area.

5.2. The MRCM at non-make ready sites will ensure that cleaning and decontamination of PAPR takes place in accordance with their operating unit's VPP regular cleaning schedule. They will also ensure that the battery management system in place at their site is working effectively.

5.3. The MRCM will ensure that end of shift PAPR powerpack cleaning, and decontamination is completed as specified within the Make Ready Contract as this function remains the responsibility of the cleaning contractor on site. They will also ensure that the battery management system in place at their site is working effectively.

5.4. Equipment Failure

- 5.5.** In the event of an equipment failure the user should withdraw from the scene and utilise level 2 PPE whilst calling for urgent back up.
- 5.6.** All equipment failures must be recorded via a Datix.

6. Responsibilities

- 6.1 It is the responsibility of all **frontline ambulance staff** to adhere to this SOP, ensuring that they have maintained, cleaned, and checked their PAPR/Powered Hood to enable its operational use.
- 6.2 **All staff** have a legal duty under The Health & Safety at Work Act 1974 along with The Personal Protective Equipment Regulations 2002, to correctly use any personal protective equipment (PPE) provided.
- 6.3 The **Chief Executive Officer** is responsible for staff and patient safety.
- 6.4 **Operating Unit Managers** and relevant **Heads of Departments** are responsible for ensuring that all frontline staff have PAPR/Powered Hoods.
- 6.5 The **Associate Directors of Operations (East and West)** are responsible for managing and implementing the procedure, and for monitoring and auditing the process, including annual reports to the Trust.

7 Audit and Review

- 7.1 OTLs (or other delegated managers within other directorates) must ensure that team members have completed the annual servicing of the personal issue hood and hose.
- 7.2 Data relating to asset tracking and rollout will be compiled within a centrally accessible Power BI Dashboard for local areas to review.