



Current recommendations for the use of Personal Protective Equipment (PPE) in the context of the COVID-19 pandemic

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Note: If you have any queries on this guidance please contact the AMRIC team at hcai.amrteam@hse.ie

Version	Date	Changes from previous version	Drafted by
2.7	18.01.2022	Clarification of terminology regarding respirator masks Note on terminology regarding surgical masks	AMRIC
2.6	29.12.2021	Change to the title of the document to emphasise that it applies to care of all patients in the context of the pandemic Section 5 of the table modified to clarify what is required in clinical areas when caring for person with no clinical suspicion of COVID-19	AMRIC
2.5	23.12.2021	Respirator mask required for all patient care activity Simplification of guidance on surgical mask use Updated information on vaccination Clarified that extended use of PPE is not required for the purpose of limiting use of PPE Removal of reference to decontamination of items of PPE	AMRIC
2.4	05.07.2021	Updated to include definition of vaccine protection. Updated to include COVID 19 recovery and immunity extended from 6 months to 9 months Increased reference to ventilation	AMRIC
2.3	09.02.2021	Updated with statement that vaccination does not change the requirement for precautions - done Changes to the section on transmission to reflect recent experience and emergence of new variants Updated to align with recommendation regarding FFP2 mask availability for HCW caring for suspected or confirmed COVID19 patients Updated with recommendations for PPE use when vaccinating	AMRIC
2.2	22.09.2020	Updated to reflect HSE decision of change in guidance on mask use to include use in public areas	AMRIC
2.1	26.05.2020	Updated to reflect Decision by NPHE dated 22nd April 2020 in relation to use of surgical masks in healthcare settings; Surgical masks should be worn by healthcare workers when they are providing care to people and are within 2m of a person, regardless of the COVID-19 status of the person Surgical masks should be worn by all healthcare workers for all encounters , of 15 minutes or more, with other healthcare workers in the workplace where a distance of 2m cannot be maintained	HPSC

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Notes on terminology relating to masks

The term “respirator mask” is generally used in this document. In most circumstances this will be an FFP2 mask but respirator masks that meet or exceed the filtration standards of FFP2 masks are also appropriate. Powered Air Purifying Respirators (PARPs) also meet the requirement for respiratory protection.

The terms surgical mask, medical mask and medical grade mask are widely used and are interchangeable, the term surgical mask is used in this document.



Introduction

Infection Prevention and Control practice supported by appropriate use of PPE is important to minimise risk to patients of healthcare associated COVID-19. These measures are equally important in controlling exposure to occupational infections for healthcare workers (HCWs). Traditionally, a hierarchy of controls has been used. The hierarchy ranks controls according to their reliability and effectiveness and includes engineering controls, administrative controls, and ends with personal protective equipment (PPE). In the context of risk of respiratory infection PPE adds an extra layer of protection in the context of scrupulous attention to hand hygiene, respiratory hygiene and cough etiquette, ventilation and environmental hygiene.

Vaccination for COVID-19 began in Ireland in late December 2020 and a booster vaccination programme has been implemented in autumn 2021. Most frontline healthcare workers have now been vaccinated and have had a booster vaccination. The impact of vaccination was apparent in a dramatic reduction in the number of new diagnoses of COVID-19 in acute hospital healthcare workers from mid-January 2021. It is clear however that the protection afforded to healthcare workers by vaccination is not absolute and has waned with time and emergence of new variants. Therefore it remains prudent to avoid intense exposure as much as possible. There is evidence that vaccination reduces asymptomatic infection and reduces viral load in those who do become infected. Therefore risk of spread of infection from vaccinated people is expected to be reduced; however vaccination may not prevent transmission of SARS-CoV-2 from healthcare worker to patient in all settings. At this time, healthcare workers who are fully vaccinated with booster are advised to adhere to all IPC measures in this guideline in the same way as they did prior to vaccination. This advice will be reviewed regularly on the basis of emerging evidence and experience.

Vaccine Protection

Individuals have completed their primary vaccination course as follows:

1. 15 days after the second dose of AstraZeneca (Vaxzevria);
2. 7 days after the second Pfizer-BioNTech dose (Comirnaty);
3. 14 days after the second Moderna dose (Spikevax);
4. 14 days after Janssen (one dose vaccination course);

Booster vaccination, when eligible for booster, is essential to maintain vaccine mediated protection.

COVID-19 and Immunity after Recovery

It is recommended that healthcare workers who have recovered from COVID-19 continue to follow the same IPC precautions as all other HCWs when in contact with patients to reduce the risk of transmission of COVID-19.



Minimising exposure risk

Actions for Healthcare workers

1. Avail of vaccination and booster vaccination that is offered to you;
2. Implement Standard Precautions for infection prevention and control plus mask use as below with all patients at all times;
3. Maintain a physical distance of at least 2m from individuals with respiratory symptoms (where possible);
4. Clean your hands regularly as per WHO 5 moments;
5. Avoid touching your face;
6. Promote respiratory hygiene and cough etiquette which involves covering mouth and nose with a tissue when coughing and sneezing, or coughing into the crook of an elbow, discarding used tissue into a waste bin and cleaning hands.

Actions for the healthcare facility

1. Staff should be encouraged to be vaccinated against COVID-19 and to get booster vaccinations;
2. Post visual alerts including signs, posters at the entrance to the facility and in strategic places (e.g., waiting areas, elevators, cafeterias) to provide patients and HCWs with instructions (in appropriate languages) about hand hygiene, respiratory hygiene, and cough etiquette;
3. Instructions should include how to use tissues to cover nose and mouth when coughing or sneezing, to dispose of tissues and contaminated items in waste bins, and how and when to perform hand hygiene;
4. Provide supplies for respiratory hygiene and cough etiquette, including alcohol-based hand rub (ABHR), tissues, and hands-free waste bins for disposal, at healthcare facility entrances, waiting rooms, and patient check-ins;
5. Ensure adequate natural ventilation to the greatest extent practical. The goal is gentle air circulation rather than strong air movements.
6. Use physical barriers (e.g., glass or plastic windows) at reception areas, registration desks, pharmacy windows to limit close contact between staff and potentially infectious patients.

Personal protective equipment, while important, is the last line of defence

1. This guidance applies to all healthcare settings including primary, secondary, tertiary care, ambulance service and vaccination centers;
2. The requirement for PPE is based on the tasks that a HCW is likely to perform;
3. Regarding mask use:
 - a. Respirator masks should be worn by healthcare workers in all settings where they are caring for patients.
 - b. Surgical masks should be worn by all healthcare workers for interactions with other healthcare workers in healthcare settings where patients are not cared for.



4. HCWs are also required to wear a surgical mask when in busy public areas of healthcare facilities;
5. Wearing of masks when providing care for certain categories of patient, for example patients who may need to lip-read, can present practical difficulties for patient care. In such circumstances, it is appropriate to perform an institutional risk assessment and to consider alternatives to mask use, such as use of a Perspex screen/barrier or visor that manages the risk of transmission of COVID-19. These alternatives are likely to be less effective than mask use;
6. PPE must be worn by ALL staff entering a room or cohort area where a patient with suspected or confirmed COVID-19 is being cared for;
7. PPE should be readily available outside the patient's room or cohort area;
8. Have a colleague observe donning and doffing of PPE where practical;
9. It is especially important that healthcare workers use a well-fitted respirator mask and eye protection when in contact with possible or confirmed COVID-19 cases and COVID-19 contacts.

Table 1: Recommendations for the use of PPE during COVID-19 pandemic

1.0	Non clinical areas such as administrative areas, medical records, staff restaurant and any other area where tasks do not involve contact with COVID -19 patients	
1.1	All Activities	<p>Surgical masks should be worn by all healthcare workers for all interactions with colleagues in the healthcare setting where patient care is not delivered</p> <p>Healthcare workers are required to wear a surgical mask when in busy public areas of healthcare facilities</p> <p>Respirator mask for all patient care activities</p>
2.0	Reception Areas	
2.1	Administrative activities in reception areas where staff are separated by at least two metres from patients and work colleagues	<p>Respirator mask if interacting with patients</p> <p>In other settings a surgical face mask if unable to maintain physical distance from patients and work colleagues. (This does not apply if a physical barrier e.g. Perspex screen is in place)</p>
3.0	Patient transit areas for example corridors, elevators, stairwells, escalators, waiting areas	
3.1	Transfer of patients through public areas	<p>The patient should be asked to wear a respirator mask if they can tolerate it and if not a surgical mask if they can tolerate that</p> <p>Those transferring the patient should wear appropriate PPE as per level of contact (section 5.0)</p>
3.2	All other activities e.g. providing security, moving equipment etc.	<p>Surgical masks should be worn by all healthcare workers for all interactions with colleagues in the healthcare setting where patient care is not delivered</p>

4.0	Pathology/Laboratory Areas	
4.1	All activities	<p>Surgical masks should be worn by all healthcare workers for all interactions with colleagues in the healthcare setting where patient care is not delivered</p> <p>Additional PPE as per laboratory biosafety <u>guidance</u></p>
5.0	Clinical Areas	
5.1	Providing Care	
5.1.1	Patients and service users where there is no clinical suspicion of COVID-19 and where the person is not a COVID-19 contact	<ul style="list-style-type: none"> • Hand Hygiene • Respirator mask • Other PPE as required by Standard Precautions
5.1.2	Patients with respiratory symptoms/suspected/confirmed COVID-19 who require an aerosol generating procedure*	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Single Use Nitrile Gloves • Long sleeved disposable gown • Respirator mask • Eye Protection

5.1.3	<p>Patients with respiratory symptoms/suspected/confirmed COVID-19 who do not require an aerosol generating procedure but do require high contact patient care activities that provide increased risk for transfer of virus and other pathogens to the hands and clothing of healthcare workers including (but not limited to):</p> <ul style="list-style-type: none"> • Close contact for physical examination /physiotherapy • Changing incontinence wear • Assisting with toileting • Device Care or Use • Wound Care • Providing personal hygiene • Bathing/showering • Transferring a patient e.g. from bed to chair • Care activities where splashes/sprays are anticipated 	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Single Use Nitrile Gloves • Long sleeved disposable gown • Respirator mask • Eye Protection*
5.1.4	<p>Patients with respiratory symptoms/suspected/confirmed COVID-19 where the tasks being performed are unlikely to provide opportunities for the transfer of virus/other pathogens to the hands and clothing. Low contact activities for example:</p> <ul style="list-style-type: none"> • Initial Clinical Assessments • Taking a respiratory swab • Recording temperature • Checking Urinary Drainage Bag • Inserting a peripheral IV cannula • Administering IV fluids • Helping to feed a patient 	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Single Use Nitrile Gloves • Disposable Plastic Apron • Respirator mask • Eye Protection*

5.2	Cleaning	
5.2.1	Cleaning where patient is present and has suspected or confirmed COVID-19 or is a COVID-19 contact	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Plastic Apron • Respirator mask • Household or Disposable Single use Nitrile Gloves
5.2.2	Cleaning where patient is present and but does not have suspected or confirmed COVID-19 and is not a COVID-19 contact	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Plastic Apron • Respirator mask • Gloves Household or Disposable Single use Nitrile Gloves
5.2.3	Cleaning when patient is not present for example after the patient has been discharged, or the procedure is complete Ensure adequate time has been left before cleaning and area after an AGP has been performed on a patient with suspected or confirmed COVID-19	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Plastic Apron • Gloves Household or Disposable Single use Nitrile Gloves
6.0	Internal transfer of patients with suspected or confirmed COVID-19 infection	
6.1	Accompanying a patient where COVID-19 is not confirmed or suspected between areas within the same facility (e.g. when moving a patient from a ward to radiology / theatre, GP waiting area to assessment room)	<ul style="list-style-type: none"> • Hand hygiene • Respirator mask
6.2	Accompanying a patient where COVID-19 is confirmed or suspected or COVID-19 contact between areas within the same facility (e.g. when moving a patient from a ward to radiology / theatre, GP waiting area to assessment room)	<ul style="list-style-type: none"> • Hand hygiene • Respirator mask • Eye protection

7.0	External transfer for example between home and dialysis unit, inter hospital transfer, hospital to LTCF	
7.1	Accompanying a patient but no direct contact is anticipated	<ul style="list-style-type: none"> • Hand hygiene • Respirator mask • If direct contact is unlikely, NO ADDITIONAL PPE REQUIRED for staff accompanying the patient
7.2	Accompanying a patient and likely to have direct contact with a patient who has suspected or confirmed COVID-19 or is a COVID-19 contact	<ul style="list-style-type: none"> • Hand hygiene • Respirator mask • Eye protection
7.3	Accompanying a patient and likely to have direct contact with patient where COVID-19 is not suspected or confirmed and not a contact	<ul style="list-style-type: none"> • Hand hygiene • Respirator mask <p>Additional PPE if required as per section 5.0</p>
8.0	Involved only in driving a patient not loading or unloading from transport vehicle	
8.1	No direct contact with patient and no sealed separation between driver and the patient compartments	<p>Respirator mask</p> <p>Surgical masks should be worn by all healthcare workers for all interactions with colleagues in the healthcare setting where patient care is not delivered</p>
8.2	No direct contact with patient and the driver's compartment has a sealed separation from the patient	<p>Hand Hygiene</p> <p>Maintain a physical distance of at least 2m</p> <p>NO PPE REQUIRED</p>

9.0	Individuals who may be accompanying the patient (e.g., close family members)	
9.1	<p>For patients in whom COVID-19 is suspected or confirmed</p> <ul style="list-style-type: none"> • Visiting should be limited • Visitors should be instructed how to correctly perform hand hygiene and supervised in donning/doffing PPE • Note that sensitivity to patient and visitor needs is required in the application of this recommendation for example with children and in end of life situations. Visitors should be informed of the risks but it must be accepted that in some situations people may not prioritise their own protection over their assessment of the needs of a loved one 	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Plastic Apron • Disposable Single Use Nitrile Gloves • Respirator mask or surgical mask as tolerated
9.2	<p>For patients where COVID-19 is not suspected or confirmed</p>	<ul style="list-style-type: none"> • Respirator mask or surgical mask as tolerated and otherwise PPE as per Standard Precautions (for example for contact with blood or body fluids) or as appropriate to other known or suspected colonization or infection
10.0	Administering COVID-19 vaccines	
10.1	<p>COVID-19 vaccine administration</p>	<ul style="list-style-type: none"> • Hand hygiene • Respirator mask <p>Disposable Single Use Nitrile Gloves to be available in case of blood or body fluid contact</p> <p>In case of need for CPR, staff need access to:</p> <ul style="list-style-type: none"> • Respirator mask • Eye protection • Long sleeved gowns

Types of PPE

1. **Disposable plastic aprons:** are recommended to protect staff uniform and clothes from contamination when providing direct patient care and when carrying out environmental and equipment decontamination;
2. **Fluid resistant gowns:** are recommended when there is a risk of extensive splashing of blood and or other body fluids and a disposable plastic apron does not provide adequate cover to protect HCWs uniform or clothing;
3. If non-fluid resistant gowns are used and there is a risk of splashing with blood or other body fluids a disposable plastic apron should be worn underneath or over the gown;
4. **Eye protection/Face visor:** should be worn when exposed to risk of airborne transmission and where there is a risk of contamination to the eyes from splashing of blood, body fluids, excretions or secretions (including respiratory secretions):
 - a. Full face shield or visor;
 - b. Goggles / safety spectacles.
5. **Respirator masks:** are recommended for all patient care activity;
 - a. **Tips for respirator facemasks:**

The wearer must undertake a fit check each time a respirator is worn, to ensure there are no gaps between the mask and face for unfiltered air to enter;

Respirator masks can remain effective when worn continuously for extended periods of time, but must be changed if wet or damaged and once removed they should be disposed of and not re-used.
6. **Surgical Face Masks:** Two types of surgical mask are in use for healthcare staff (Type IIR or Type II). Both masks have the same bacterial filtration rate of 98%. Type IIR masks are more appropriate in situations where there is a high risk of splashing by bodily fluids for example in the operating theatre, critical care unit and emergency department setting where a patient's condition may be unstable or acutely deteriorating.
 - a. **Tips for surgical face masks:**
 - i. The mask must be donned appropriately, to allow for easy removal without touching the front of the mask;
 - ii. Must cover the nose and mouth of the wearer;
 - iii. Must not be allowed to dangle around the HCW's neck;
 - iv. Must not be touched once in place;
 - v. Must be changed when wet or torn or if removed to eat, drink or use a phone;
 - vi. Perform hand hygiene after the surgical face mask is removed;

7. Airborne spread is a particular risk when AGPs associated with an increased risk of infection are performed. Vaccination of staff and booster vaccination is critical to protection in that context. In addition, respirator masks (FFP2 masks or other appropriate respiratory protection) and eye protection particularly important ;
8. Check to determine if respirator masks are fluid repellent. If respirator masks are not fluid repellent, additional protection, such as a visor, is required in situations where there is a splash risk.

Valved Respirator masks

9. Valved respirator masks should generally not be used. The purpose of a respirator's exhalation valve is to reduce the breathing resistance during exhalation. The valve is designed to open during exhalation to allow exhaled air to exit the respirator and then close tightly during inhalation, so inhaled air is not permitted to enter the respirator through the valve. A person who may have COVID-19 should not wear a valved respirator, because there is a possibility that exhaled particles may leave the respirator via the valve and enter the surrounding environment.
10. A recent UK NHS Patient Safety Alert has highlighted the risk of the use of valved respirator masks in the theatre environment, where the unfiltered exhaled air of the wearer can contaminate the surgical field and result in serious infections.

Fit testing

The Health and Safety Authority indicate that where a risk assessment indicates that HCW need to use a close-fitting respirator mask for their protection that every effort should be made to comply with the requirement for fit testing of the worker, as far as is reasonably practicable. When fit testing of all staff is not immediately possible, then fit testing should be prioritised for those at greatest risk. Priority groups for fit testing include the following:

1. HCW most likely to be involved in performing AGPs, in particular endotracheal intubation;
2. HCWs most likely to have the most prolonged exposure to COVID-19 in settings where AGPs are performed.

Theatre caps/hoods and shoe covers

1. There is no evidence that contamination of hair is a significant route of transmission for SARS-2-CoV. Outside of surgical procedures involving high-speed drilling, where there may be a risk of splashing and extended coverage is desirable, (for example neurosurgery), head covers are not required and are not recommended.
2. For a HCW with long hair, hair should be tied up and off their face when working in clinical settings.

3. Theatre shoe covers are not recommended outside of the operating theatre area.

Extended use of PPE

Extended PPE use may be required for practical reasons when working in a high risk area where repeated change of certain items of PPE (for example mask and eye protection) may be impractical. Extended use of PPE to limit use of PPE is not required at present as PPE supplies are good. Extended use means that certain items of PPE (gown, face mask, eye protection) may be used while attending to a series of patients with COVID-19 in succession in a single period of clinical activity in one ward or unit.

1. Gowns should normally be changed between patients and after completion of a procedure or task. However, if necessary to cope with workload:
 - a. Extended use of gowns in confirmed COVID-19 cohort areas may be considered for healthcare workers engaged in low contact activities (Table 1);
 - b. Where HCW are engaged in high contact activities (Table 1), then gowns should be changed between patients, to minimise risk of cross-transmission of other pathogens commonly encountered in healthcare settings (e.g., antimicrobial resistant organisms, such as CPE, MRSA, VRE or *C. difficile*).
2. If PPE is wet, soiled or torn it must be doffed and disposed of;
3. It is not appropriate to wear PPE that was used in the care of patients with COVID-19 when moving between wards or units or when working in designated office space or in break areas on the ward or unit;
4. Extended use of gloves is not appropriate. Gloves must be changed and hand hygiene performed between patients and between different care activities on the same patient;
5. Double gloving is not appropriate in the context of caring for patients with COVID-19;
6. Cleaning gloves with ABHR is not appropriate. If there is a concern that gloves are contaminated they must be removed safely, hand hygiene performed and a fresh pair of gloves donned if required to continue that task.

Additional information on donning and doffing PPE is available here:

<https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/infectionpreventionandcontrolguidance/>

Video resources for the donning and doffing of PPE are available here:

<https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/infectionpreventionandcontrolguidance/videosourcesforipc/>

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