



Current recommendations for the use of Personal Protective Equipment (PPE) for Possible or Confirmed COVID-19 in a pandemic setting

v2.3 09.02.2021

Version	Date	Changes from previous version	Drafted by
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 NPHET 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

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 and environmental hygiene.

Vaccination for COVID-19 began in Ireland in late December 2020. A significant number of frontline healthcare workers in the acute hospital sector have now been vaccinated. While it is expected that vaccination is likely to offer a high degree of protection to healthcare workers after completion of vaccination and it may help reduce risk of transmission from healthcare worker to patient, the degree of protection afforded to healthcare workers in the context of intense exposure and the extent of protection afforded to patients as a result of healthcare worker vaccination is not yet fully established. At this time partially or fully vaccinated healthcare workers are advised to adhere to all IPC measure 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.

Minimising exposure risk

Actions for Healthcare workers

- Implement Standard Precautions for infection prevention and control with all patients at all times
- Maintain a physical distance of at least 2m from individuals with respiratory symptoms (where possible)
- Clean your hands regularly as per WHO 5 moments
- Avoid touching your face
- 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

- 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.
- 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.
- 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.
- 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 defense

- This guidance applies to all healthcare settings including primary, secondary, tertiary care, ambulance service and vaccination centres.
- The requirement for PPE is based on the tasks that a HCW is likely to perform
- Unnecessary and inappropriate use of PPE will deplete stocks and increases the risk that essential PPE will not be available to HCW when needed most
- On April 21 2020, the National Public Health Emergency Team (NPHET) made a decision to extend the use of surgical masks in healthcare settings to the following;
 - 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
- For the purpose of this guidance healthcare workers should don a mask if they anticipate being within 2 m of one or more other healthcare workers for a continuous period of 15 minutes or longer. It is not intended that healthcare workers should attempt to estimate in the morning the total duration of a sequence of very brief encounters that may occur during the day.
- As of September 2020, HCW are also required to wear a surgical mask when in busy public areas of healthcare facilities, even if they do not expect to be within a distance of 2m of another person for 15 minutes or more.

- 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.
- 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.
- PPE should be readily available outside the patient's room or cohort area.
- Have a colleague observe donning and doffing of PPE where practical.
- Healthcare workers should have access to a well-fitted respirator mask (FFP2) and eye protection when in contact with possible or confirmed COVID-19 cases and COVID-19 contacts. In the context of a ward/unit based outbreak it is appropriate to consider all patients in that setting as suspected or confirmed COVID-19 cases while active transmission is ongoing. Decisions regarding when all patients should be considered as suspected or confirmed COVID-19 cases requiring general use of FFP2 masks should be made by the IPC team and outbreak control team.
- A surgical mask and visor also offer a high degree of protection. These may be more comfortable for and preferred by some staff. A surgical mask remains appropriate for non-patient facing activity (for example interacting with colleagues or students) and when caring for patients where there is no suspicion of COVID-19 and there is no evidence of transmission in the service.

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 encounters, of 15 minutes or more, with other healthcare workers in the workplace where a distance of 2m cannot be maintained</p> <p>As of September 2020, healthcare workers are also required to wear a surgical mask when in busy public areas of healthcare facilities even if they do not expect to be within a distance of 2m of another person for 15 minutes or more.</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.	Surgical face mask if unable to maintain a 2 metre distance from patients and work colleagues. (This does not apply if a physical barrier e.g. Perspex screen is in place)
3.0	Patient transit areas for example corridors, elevators, stairwells, escalators, waiting areas	
3.1	Transfer of patients through public areas	The patient should be asked to wear a surgical face mask if they can tolerate it Those transferring the patient should wear appropriate PPE as per level of contact (section 5.0)
3.2	All other activities e.g. providing security, moving equipment etc.	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
4.0	Pathology/Laboratory Areas	
4.1	All activities	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 Additional PPE as per laboratory biosafety guidance
5.0	Clinical Areas	
5.1	Providing Care	

5.1.1	<p>Patients with respiratory symptoms/suspected/confirmed COVID-19 who require an aerosol generating procedure*</p> <p>Note: • In situations where staff are in the room with a patient and there is a significant risk that an unplanned aerosol generating procedure may need to be performed urgently for example accidental extubation it may be appropriate to wear an FFP2 mask while in the room</p>	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Single Use Nitrile Gloves • Long sleeved disposable gown • FFP2 respirator mask • Eye Protection
5.1.2	<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 • FFP2 respirator or surgical facemask • Eye Protection* <p>*Eye protection is recommended as part of standard infection control precautions when there is a risk of blood, body fluids, excretions or secretions splashing into the eyes.</p> <p>Individual risk assessment must be carried out before providing care. This assessment will need to include</p> <ul style="list-style-type: none"> • Whether patients with possible COVID-19 are coughing. • Does the task you need to perform expose you to a risk that the patient will cough or sneeze in your face or present other risk of blood or body fluid splash?

5.1.3	<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 • FFP2 respirator or surgical facemask • Eye Protection* <p>*Eye protection is required to be worn as part of standard infection control precautions when there is a risk of blood, body fluids, excretions or secretions splashing into the eyes.</p> <p>Individual risk assessment must be carried out before providing care.</p> <p>This assessment will need to include</p> <ul style="list-style-type: none"> • Whether patients with possible COVID-19 are coughing. • Does the task you need to perform expose you to a risk that the patient will cough or sneeze in your face or present other risk of blood or body fluid splash
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 • FFP2 respirator or surgical facemask • 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 • Surgical facemask

		<ul style="list-style-type: none"> 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 as per guidelines.	<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 Surgical facemask
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 FFP2 respirator or surgical facemask
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 Surgical mask (required unless physical distance can be maintained) 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 FFP2 respirator or surgical mask

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 • Surgical facemask Additional PPE if required as per section 5.0
8.0	Involved only in driving a patient not loading or unloading from transport vehicle	
8.1	No direct contact with patient and no separation between driver and the patient compartments	<p>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</p> <p>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</p>
8.2	No direct contact with patient and the drivers compartment is separated 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	<ul style="list-style-type: none"> • Visiting should be restricted • If visitors are permitted they 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 	<ul style="list-style-type: none"> • Hand Hygiene • Disposable Plastic Apron • Disposable Single Use Nitrile Gloves • Surgical Face Mask

	prioritise their own protection over their assessment of the needs of a loved one.	
9.2	For patients where COVID-19 is not suspected or confirmed	<ul style="list-style-type: none"> • PPE is required 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	COVID-19 vaccine administration	<ul style="list-style-type: none"> • Hand hygiene • Surgical 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"> • FFP2 mask • Eye protection • Long sleeved gowns

Types of PPE

- **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.
- **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.
- 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.
- **Eye protection/Face visor:** should be worn when there is a risk of contamination to the eyes from splashing of blood, body fluids, excretions or secretions (including respiratory secretions)
 - Surgical mask with integrated visor
 - Full face shield or visor
 - Goggles / safety spectacles

- **Surgical Face Masks:** The WHO recommends two types of surgical facemask for use for HCWs in caring for patients with COVID-19 (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.
 - **Tips for surgical face masks:**
 - The mask must be donned appropriately, to allow for easy removal without touching the front of the mask
 - Must cover the nose and mouth of the wearer
 - Must not be allowed to dangle around the HCW's neck
 - Must not be touched once in place
 - Must be changed when wet or torn or if removed to eat, drink or use a phone
 - Perform hand hygiene after the surgical face mask is removed
- **Respirator masks:** are routinely recommended for the care of patients with known airborne infectious diseases, including; varicella (chickenpox) and measles viruses and pulmonary tuberculosis (TB).
- COVID-19 is primarily transmitted by contact and droplet routes. The extent to which airborne transmission contributes to spread remains uncertain. The emergence of new variants that are more readily transmissible has generated additional uncertainty regarding the contribution of airborne spread.
- Airborne spread is an accepted risk when AGPs associated with an increased risk of infection are performed. In that context respirator masks (FFP2 masks or other appropriate respiratory protection), in addition to eye protection are required in all cases.
- 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.
- There is no reason to consider that cone shaped masks or FFP3 masks afford a higher degree of protection in practice than duckbill-style FFP2 masks. Properly-fitted cone shaped masks also provide appropriate protection. Valved respirator masks are not fully fluid resistant, unless they are shrouded. If a valved non-shrouded respirator mask is used, facial protection such as a visor must always be worn.

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:

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

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.
 - Fit testing of respirator masks is required, to ensure that the mask fits properly to the wearer's face shape. Fit-testing is appropriate for all respirator masks. However, it may be less critical for duckbill style masks (FFP2) and ensuring a good fit for a wider range of staff may be easier. When fit testing of all staff is not immediately possible, fit testing should prioritise those at greatest risk including;
 - HCW most likely to be involved in performing AGPs, in particular endotracheal intubation
 - HCW most likely to have the most prolonged exposure in that context
 - **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 prolonged periods of time, but must be changed if wet or damaged
- **Theatre caps/hoods and shoe covers:** There is no evidence that contamination of hair is a significant route of transmission for COVID-19 infection. Head covers are not required and are not recommended. HCWs with long hair should keep their hair tied up and off their face when working in clinical settings. Theatre shoe covers are not recommended.

Extended use of PPE

In a pandemic situation, it is recognised that circumstances such as, limited access to supplies or overwhelming patient numbers may arise and hospitals may need to make pragmatic decisions about their use of certain items of PPE. Where measures vary from usual practice, it is necessary to ensure the lowest possible risk to patients and healthcare workers. In certain circumstances extended use of certain PPE items is acceptable. 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.

- Gowns should normally be changed between patients and after completion of a procedure or task. However, if necessary to cope with workload or to manage PPE supplies;

- Extended use of gowns in confirmed COVID-19 cohort areas may be considered for healthcare workers engaged in low contact activities (Table 1)
- 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*)
- If PPE is wet, soiled or torn it must be doffed and disposed of.
- 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
- 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.
- Double gloving is not appropriate in the context of caring for patients with COVID-19
- 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.

Decontamination of eye/face protection for example goggles where there is a shortage of equipment

- Reuse of eye/face protection intended for single use is not good practice and should be avoided if at all possible
- In situations where the supply of new disposable eye protection cannot be secured AND the activity being undertaken involves a high risk of splash or spray to the eyes, reuse of goggles/safety spectacles is safer than going without protection
- Where reuse of eye protection is being considered:
 - Ensure there is no obvious signs of damage – Discard if signs of damage
 - Ensure there are no cloth elements - items with cloth elements cannot be effectively decontaminated
 - Check they are visibly clean before attempting to decontaminate – Discard if visibly soiled with blood/body fluids including respiratory secretions as heavily soiled items cannot be effectively decontaminated.
 - The item should then be carefully decontaminated, either through a centralised decontamination process or by using a disinfectant wipe for reuse by the same healthcare worker
 - The risk of reuse of eye protection (goggles, visor, mask) should be balanced against the risk to the user of a risk of splash or spray to the eyes
 - Where practical to do so, decontamination of goggles for reuse by different users should be centralised in a facility which normally reprocesses items, may add an additional margin of safety

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/videoresourcesforipc/>

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