Acute Hospital Infection Prevention and Control Precautions for Possible or Confirmed COVID-19 in a Pandemic Setting

V.1.2

30th May 2020
**Infection Prevention and Control Precautions for Possible or Confirmed COVID-19 in a Pandemic Setting**

**V1.2 May 30th 2020**

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<td>- Decision by NPHET dated 22nd April 2020 in relation to use of surgical masks in healthcare settings;</td>
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<td>- 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</td>
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- Update to the section on immunity after recovery
- Update to Patient Placement heading to refer to surveillance
- Update to Patient placement section to refer to setting to caution against over-reliance on laboratory test results and to reference surveillance testing
- Update to section on PPE to refer to indicate that new items of PPE should be reviewed by hospital IPC team
- Deleted- Patients who are being transferred from a hospital experiencing an outbreak of COVID-19 who have not been identified as contacts of COVID-19 and are asymptomatic do not require isolation for 14 days on return to residential care setting or home.
- Reference to guidelines from Institute of Obstetrics & Gynaecology added and deleted line on pg 64- Immediate skin to skin contact post-delivery is not recommended.
- Additional information on PAPRS
- Additional information about handling personal effects of deceased persons
- Section on Acute Mental Health Facilities added
- Note regarding the limited PPE required for cleaning activities when not in the patient zone
- Reference to NPHET recommendation on cloth face coverings in the context of OPD attendance
- Reference to extended period of additional IPC precautions for recovered immunocompromised patients in OPD removed.
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Introduction

This document replaces the previously issued ‘Interim infection prevention and control precautions for possible or confirmed 2019 novel Coronavirus (2019 nCoV), Middle East Respiratory Syndrome Coronavirus (MERS CoV) and Avian Influenza A in healthcare settings’.

It provides guidance and information on infection prevention and control (IPC) procedures to manage COVID-19 in the acute healthcare setting. The guidance has been updated to reflect the declaration of a pandemic event, recent decisions of the National Public Health Emergency Team and to address questions that have arisen from colleagues managing COVID-19. Please note that further updates in guidance are likely to be required therefore it is essential that you confirm that you are using the latest version of guidance.

There is no doubt that these are extraordinary and challenging times. However, the fundamental principles of basic IPC remain the core defence we have for protecting our patients, our colleagues and ourselves from acquiring this disease.

Although the concerns of healthcare workers (HCW) for their personal welfare and that of their colleagues and family are natural and reasonable, it is important that patients with any infectious disease receive appropriate care. It is necessary to manage the risk of spread without compromising the delivery of timely and appropriate care to the patient.

This document was informed by guidance from the Department of Health and Social Care (DHSC), Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, Health Protection Scotland (HPS) Public Health England, European Centre for Disease Control and the World Health Organisation. HPSC appreciates the support of international infection prevention and control colleagues at this time.

There is variation in detail between national guidance on infection prevention and control issued in different countries. Similarly, many specialist societies have issued recommendations, which differ in some details from national or international guidelines on infection prevention and control. Although differences in detail are a focus of considerable debate and can create a very
challenging environment for IPC practice, it is important to focus on the clear consensus on all
the most critical aspects of infection prevention and control and to continue to work together to
manage those areas of difference and to look to emerging evidence to resolve those differences.

COVID-19 (SARS-CoV-2)

The virus which causes COVID-19 infection is called SARS-CoV-2 and belongs to the broad family
of viruses known as coronaviruses. Global efforts to further our understanding of this pathogen
have been ongoing since it was first identified in the Wuhan province of China in December 2019.

Transmission

The transmission of COVID-19 occurs mainly through respiratory droplets. Respiratory droplets
are generated from the nose and mouth by actions such as coughing, sneezing, talking or
laughing. Infection of others may result from direct impact of infectious droplets on the mucosa
of people standing nearby. Infection may also result through contact with surfaces contaminated
with infectious respiratory droplets and transfer of infectious material to the mucous
membranes. Current estimates suggest a median incubation period from five to six days for
COVID-19, with a range from one to up to 14 days. Individuals are usually considered most
infectious about the time they develop symptoms. How infectious individuals are is related to
the severity and stage of their illness. Higher levels of virus have been detected in patients with
severe illness compared to mild cases. Like influenza, peak levels of virus are found around the
time of symptom onset. There is general acceptance that some people can be infectious before
they develop symptoms (pre-symptomatic spread) and that some people who never notice
symptoms may be infectious (asymptomatic spread). The overall importance of spread of
infection from presymptomatic and asymptomatic people in driving the pandemic remains
uncertain.

In Ireland people with COVID-19 are considered infectious for up to 14 days after the date of
onset of symptoms or for 14 days after the date the initial test was taken if the date of onset is
not clear. After 14 days the person is no longer considered infectious if they have been free of
fever for 5 days and clinically recovered. Wolfel and colleagues (https://www.nature.com/articles/s41586-020-2196-x) reported that virus was not isolated from the nasopharynx after 8 days although viral nucleic acid remained detectable at high levels. Therefore, the use of 14 days as the infectious period represents a cautious approach. Extending the period of isolation beyond 14 days is generally not appropriate.

It is important to note that virus nucleic acid remains detectable in respiratory secretions of some patients for extended periods (weeks in some cases). This does not equate to presence of viable virus.

Testing for virus nucleic acid in a person diagnosed with COVID-19 is generally not appropriate before declaring that the infectious period is over. This is assessment is based on clinical criteria as above.

Testing for virus nucleic acid in a person diagnosed with COVID-19 is generally not appropriate before scheduling treatment (surgery or other treatment) in a person who has clinically recovered.

Of note virus nucleic acid has also been detected in faeces, urine and blood from infected individuals although there is no indication that this is significant in terms of transmission.

**Transmission in the Healthcare Setting**

The spread of COVID-19 in the healthcare setting is a specific concern. Experience in Ireland and elsewhere indicates that transmission in acute hospitals and other healthcare settings occurs readily. Outbreaks of infection involving both patients and healthcare workers have been reported. However, the experience in many acute hospital services dedicated to care of COVID-19 patients is reassuring in that where cases of COVID-19 are effectively detected and IPC precautions including appropriate use of PPE are implemented fully, the risk of spread can be managed and kept to a low level. It is therefore important that acute hospitals have in place systems to ensure that, to the greatest extent possible, patients with COVID-19 are rapidly identified at presentation and are cared for with appropriate IPC precautions.
Processes for identification of patients presenting with COVID-19 must take account of the growing experience that a significant number of patients do not have respiratory symptoms on presentation and some may have very non-specific features that point to a diagnosis of COVID-19. Hospital surveillance activities related to COVID-19 should include identifying incidents of late recognition of community acquired COVID-19 and identifying cases of hospital acquired COVID-19 among patients and healthcare workers. Hospitals should review the plans for management of outbreaks of infectious disease to ensure that they address early detection and rapid response to outbreaks of COVID-19.

Rapid laboratory testing for COVID-19 plays an important part in identifying patients with COVID-19 who require specific precautions and in detecting outbreaks in a timely manner. The extent of testing is rapidly expanding. Testing of patients in whom there is a clinical suspicion of COVID-19 is a priority. Contact and Droplet Precautions should apply to these patients from the point at which the clinical suspicion is raised and until review after test results become available. There is also an increasing role for surveillance testing of patients in whom there is no specific clinical suspicion of COVID-19. Standard Precautions (plus surgical mask) are generally appropriate for this cohort of patients until such time as the test result is available or clinical features suggestive of COVID-19 develop. Surveillance testing may be applied to a very high proportion of patients or to all patients who require unscheduled admission for general medical or surgical care at presentation. Testing of all patients scheduled for admission for major procedures and procedures that require endotracheal intubation may also help to manage the risk of exposure of patients and healthcare workers in the acute hospital setting. These measures should be considered where feasible and appropriate in the context of an institutional risk assessment and regular review.

**COVID-19 and Pregnancy**

Pregnant women do not appear more likely to contract COVID-19 than the general population. In a limited case series in China, no evidence of the virus was found in the amniotic fluid, cord
blood or breast milk of six women with COVID-19 who were delivered by Caesarean section and none of the infants developed infection. To date, no evidence has been found to suggest that the virus is present in the breast milk of mothers with COVID-19. Some possible case of vertical transmission have been now been so this may be possible but is not common and neonatal outcomes have been good in the absence of other neonatal conditions.

COVID-19 and Immunity After Recovery

There is still limited experience with immunity after recovery and therefore caution is required in interpretation. In general, patients who have recovered from COVID-19 have evidence of an immune response and they appear unlikely to acquire infection that makes them infectious for others at least in the short term (the following 8 to 12 weeks).

Survival in the Environment

The SARS-CoV-2 virus is an RNA virus with a lipid envelope. The presence of the lipid envelope means that virus is less robust than a non enveloped virus. Survival on environmental surfaces is dependent on the surface type and the environmental conditions. One experimental study using a SARS-CoV-2 strain reported viability on plastic for up to 72 hours, for 48 hours on stainless steel and up to eight hours on copper. However, the levels of virus declined very quickly over the time period.

Limiting Exposure of Staff to COVID-19

- Minimise the number of HCW caring for patients with possible or confirmed COVID-19.
- Ensure there are adequate numbers of healthcare workers to allow them time to adhere to the necessary IPC precautions, in particular to adhere to hand hygiene and safe donning and doffing of personal protective equipment (PPE). In general, one-to-one care is not required for a single patient with suspected or confirmed COVID-19 in a non-critical care setting, provided there is adequate staffing to allow staff to safely apply Contact and Droplet precautions, with addition of airborne precautions when aerosol-generating procedures associated with an increased risk of infection (AGPs) are performed.
- Wherever possible, for the duration of each shift, assign designated staff to care for
patients with confirmed COVID-19 infection who may be accommodated in isolation room(s)/cohort bay(s)/areas of a ward. The allocation of staff should be reviewed regularly and depends on the number of patients accommodated on the ward, the care needs of the patients and case mix of the ward. Designating staff whenever there are sufficient levels of staff available minimises the likelihood that staff have to care for patients with COVID-19 and patients without COVID-19 during the same shift.

- Where possible designated extra catering support should be provided to staff working in cohort areas, to minimise their need to travel to communal eating facilities.
- Consider assigning staff who have had confirmed COVID-19 and who have since recovered and have been deemed suitable to return to work for duties in COVID-19 cohort areas. These staff must continue to follow recommended IPC precautions, including hand hygiene and appropriate use of PPE.
- In order to ensure appropriate care for the patient with COVID-19 with the minimum of risk, HCWs who enter the patient’s room or cohort area should plan to deliver as much of the care required as possible at each entry. Where appropriate, some communications may be performed with the patient remotely through use of a mobile telephone or other similar device.
- Group meetings and social interaction among staff should be restricted and alternative methods of communication arranged (for example, e-mail, teleconference, videoconference). In particular, social interaction between healthcare workers who do not have to work with each other should be avoided, as it introduces an additional avoidable risk. Where meetings are essential, select a meeting space that can facilitate the anticipated number of attendees, so that physical distancing can be observed. Note the NPHET recommendation regarding use of masks in settings where a distance of 2m cannot be maintained and encounters between staff are expected to last for longer than 15 minutes.
- At the start of each shift, all staff should be asked to check that they do not currently have symptoms of viral respiratory infection, such as fever, cough, shortness-of-breath or myalgia and in the event new symptoms develop during a shift, to report immediately to
the person-in-charge. Recording of temperatures of staff presenting for work may also be of value in identifying staff with infection.

**Guidance in relation to occupational health issues for healthcare workers (HCW) is available on** [www.hpsc.ie](http://www.hpsc.ie)

**Visitors**

- In a pandemic situation, visiting restrictions will be required. However, local risk assessment and practical management must be considered, ensuring the response is both pragmatic and proportionate. Specific scenarios where a compassionate and practical approach is required include;
  - Care of the dying
  - Maternity services – birth partners in whom there is no clinical suspicion of COVID-19 should be allowed to provide support to the mother in labour unless there are exceptional local circumstances that preclude this.
  - Children
  - Carers or key workers for those with intellectual and/or physical disability.
  - Carers or support workers for those who require mental health services.
- All visitors must be advised of potential infection risk.
- Visitors should be advised to perform hand hygiene and to wear appropriate PPE while in a patient’s room including;
  - Surgical face mask, apron, gloves
  - If parents of infants or small children or other carers have difficulty adhering to the use of PPE while with the patient, they should be encouraged to prioritise hand hygiene, avoiding contact with face and eyes and to wear a surgical face mask.
- Visitors should be instructed on how:
  - To perform hand hygiene and respiratory hygiene and cough etiquette (Appendix 1) and to put on (don) and remove (doff) PPE. Visitors should be supported when performing hand hygiene and donning and doffing PPE where practical.
External Contractors

- All hospitals should have pathways in place to ensure that services provided by external contractors including deliveries of supplies can be delivered in a safe manner with minimal risk to the contractors and staff/patients.
- The hospital should have processes in place to manage the risk that COVID-19 symptomatic external contractors and those delivering good could enter the facility.
- All external contractors and delivery persons should be required to perform hand hygiene on entering and leaving the facility.
- Appropriate PPE and instruction on use should be provided to external contractors where it is necessary to facilitate the service provision. A requirement for external contractors or delivery persons to wear infectious disease related PPE should be very exceptional as they should not normally be working within 2 m of a person with COVID-19 infection.

Standard Precautions

Patient placement/surveillance & assessment for infection risk

- All patients must be promptly assessed for COVID-19 infection risk on arrival at a healthcare setting. Healthcare workers should be aware that patients with COVID-19 may not have respiratory symptoms on presentation. In all healthcare settings, patients with symptoms of COVID-19 should be separated from non-symptomatic patients as soon as possible.
- In patients where there is a clinical suspicion of COVID-19 single-room placement, Contact and Droplet Precautions should not be discontinued solely on the basis of a test result reported as not-detected /negative. A clinical assessment is required as well as laboratory data.
- Patients should be continuously reviewed throughout their inpatient stay for the development of symptoms that suggest COVID-19. Healthcare workers should not discount the possibility that new symptoms suggest COVID because of a recent test result reported as not-detected /negative.
• To inform patient placement and for other reasons surveillance testing of all patients for unscheduled admission for general medical or surgical care at presentation should be considered where feasible and appropriate in the context of an institutional risk assessment and regular review.

• To inform patient placement and for other reasons surveillance testing of all patients scheduled for admission for major procedures and procedures that require endotracheal intubation should be considered where feasible and appropriate in the context of an institutional risk assessment and regular review.

**Hand hygiene**

• Hand hygiene is vital to reduce the transmission of infection in health and other social care settings and is a critical element of Standard Precautions.

• Hand hygiene must be performed immediately before every episode of direct patient care and after any activity or contact that potentially results in hands becoming contaminated, including the removal of PPE, equipment decontamination, handling of waste and laundry.

**Alcohol Based Hand Rubs**

• An effective alcohol-based hand rub product should contain between 60% and 80% of alcohol and its efficacy should be proven according to the European Norm 1500 or the standards of the ASTM International (formerly, the American Society for Testing and Materials). The minimum alcohol concentration recommended is 60% v/v in line with the WHO recommendation.

**Respiratory hygiene and cough etiquette**

• All healthcare facilities should provide a supply of tissues, as well as access to alcohol based hand rub (ABHR) at department entrance, to give to any person who presents
with an acute respiratory tract infection. Surgical facemasks should also be provided for the symptomatic patient to wear, where available and tolerated by the patient.

- All staff, patients and visitors should be encouraged to adhere to respiratory hygiene/cough etiquette at all times (Appendix 1).

- Key messages include;
  - Cover your mouth and nose with a disposable tissue when coughing and sneezing to contain respiratory secretions
  - Discard used tissues into a waste bin immediately after use and clean your hands
  - If you don’t have a tissue, cough into your forearm or the crook of your elbow
  - Clean your hands

**Personal Protective Equipment (PPE)**

- As part of Standard Precautions, it is the responsibility of every HCW to undertake a risk assessment PRIOR to performing a clinical care task, as this will inform the level of IPC precautions needed, including the choice of appropriate PPE for those who need to be present.

- All staff must be trained in the proper use of all PPE that they may be required to wear.

- Staff who have recovered from COVID-19 infection and who have been deemed suitable to return to work should continue to follow the IPC precautions, including the performance of hand hygiene and wearing of PPE as recommended in this document.

- **The unnecessary use of PPE will deplete stocks and increases the risk that essential PPE will not be available to staff when really needed.**

**Safe management of linen (Laundry)**

- Organisations must plan for the safe storage of used/infectious linen awaiting collection and maintenance of supplies of clean linen for patient use.

- All linen used in the direct care of patients with suspected and confirmed COVID-19 should be managed as ‘infectious’ linen.

- Linen must be handled, transported and processed in a manner that prevents
exposure to the skin and mucous membranes of staff, contamination of their clothing and the environment.

- Disposable gloves and an apron should be worn when handling infectious linen.
- All linen should be handled inside the patient room/cohort area. A laundry skip/trolley should be available as close as possible to the point-of-use for linen deposit, for example immediately outside the cohort area/isolation room.
- When handling linen, the HCW should not:
  - rinse, shake or sort linen on removal from beds/trolleys;
  - place used/infectious linen on the floor or any other surfaces (e.g., a bedside locker/table top);
  - handle used/infectious linen once bagged;
  - overfill laundry receptacles; or
  - place inappropriate items in the laundry receptacle (e.g., used equipment/needles).
- When managing infectious linen, the HCW should:
  - Place linen directly into a water-soluble/alginate bag and secure
  - Place the alginate/water-soluble bag into the appropriately-coloured linen bag (as per local policy)
  - Store all used/infectious linen in a designated, safe area pending collection.

Staff Uniforms/Clothing

- The appropriate use of PPE will protect staff uniforms from contamination in most circumstances.
- Scrubs are not PPE. However, healthcare facilities should consider the use of scrubs for staff who do not usually wear a uniform, but who are likely to work in areas of high activity, with direct contact with patients suspected or confirmed to have COVID-19.
- Healthcare facilities should provide a designated area where staff can change into
uniforms on arrival and when leaving work.

- Where healthcare laundry services are available and it is feasible, they should be used to launder staff uniforms. If there is no laundry facility available, uniforms should be taken home in a disposable plastic bag. This bag should be disposed of into the household waste stream. Alginate /water-soluble bags should not be used to take uniforms home, as they are designed for use in commercial washing machines rather than domestic washing machines and may damage the domestic machine.

- Uniforms should be laundered:
  - separately from other household linen;
  - in a load not more than half the machine capacity;
  - at the maximum temperature the fabric can tolerate

- The risk of virus transmission from contaminated footwear is likely to be extremely low. The use of shoe covers is not recommended. However, HCW could consider designating a pair of comfortable, closed, cleanable shoes for wearing when working in a cohort or critical care area

- Staff should avoid bringing personal items, including mobile phones into cohort/isolation areas.

Management of blood and body fluid spills

- Spillages should be managed in line with local policy.

Management of waste

- Dispose of all waste from patients with confirmed or suspected COVID-19 as healthcare risk waste (also referred to as clinical risk waste) (Appendix 2).

- When removing waste, it should be handled as per usual precautions for healthcare risk waste.

- The external surfaces of the bags/containers do not need to be disinfected.

- All those handling waste should wear appropriate PPE and clean their hands after removing PPE.
• Hands-free health-care risk waste bins should be provided in isolation rooms and cohort areas.

Transmission-based precautions for COVID-19

• Transmission based precautions are IPC measures which are implemented in addition to Standard Precautions when Standard Precautions alone are insufficient to prevent the onward transmission of specific infectious diseases. They include Contact, Droplet and Airborne precautions. In general, COVID-19 is spread by respiratory droplets – so transmission may be direct, through contact with the respiratory secretions of someone with COVID-19, or indirect, through contact with a contaminated surface/object. Less commonly airborne spread may occur for example during aerosol generating procedures associated with an increased risk of infection.
• The key elements of transmission based precautions for COVID-19 are outlined in the sections below.

Patient Placement for Inpatient Care

• Patients with COVID-19 should be located in proximity to each other to the greatest degree possible for example by identifying COVID-19 wards /units.
• Isolation signage must be placed at the entrance to the patient’s room to restrict entry and indicate the level of transmission-based precautions required, namely Contact and Droplet precautions. The door should remain closed.
• Patients should be cared for in a single room with en suite facilities. If there is no en suite toilet a dedicated commode should be used, with arrangements in place for safe removal of a bedpan/urinal to an appropriate disposal point. Alternatively, arrange for safe access to a toilet close by, that is assigned for the use of that patient only.
• In the event of a commode being used, the HCW should leave the single room wearing full PPE, transport the commode directly to the nearest sluice and remove PPE in the sluice after placing the contents directly into the bed pan washer or pulp disposal unit. A second HCW
should be available to assist with opening and closing doors to the single room and sluice room.

- Take time to explain to the patient the importance of the precautions that are in place to manage their care and advise them against leaving the room without HCW guidance. Listen and respond to any concerns they may have, to ensure support and optimal adherence is achieved during their care.

- Avoid storing any unnecessary equipment or supplies in the patient’s room or cohort area.

- The allocation of patients for available single rooms should be decided locally, based on need, capacity for cohorting of patients with confirmed COVID-19 infection, ward infrastructure and available resources.

Patient placement for aerosol generating procedures

- Further information on aerosol generating procedures associated with an increased risk of infection (AGP) is available [here](#).

- Where an AGP is necessary, it should ideally be undertaken in a negative-pressure or neutral pressure room, using recommended airborne precautions.

- If a negative/neutral pressure room is not available, the AGP should be undertaken using a process and environment that minimises the exposure risk for HCWs, ensuring that patients, visitors, and others in the healthcare setting are not exposed for example, in a single room, with the door kept closed, away from other patients and staff.

- HCW and visitors should leave the patient’s room during an AGP, unless it is necessary for them to remain to assist with the patient’s care during the AGP. Those present in the room during the AGP must wear the recommended PPE for an AGP situation, for the duration of the procedure and for 20 minutes afterwards in rooms with mechanical ventilation and for up to one hour in a room with natural ventilation.

Cohorting and Streaming

- At entry to the hospital, patients presenting for assessment should be segregated into
‘Possible COVID’ and ‘non-COVID’ parallel streams. This should take account of criteria set out in the latest version of the Covid-19 Hospital pathway, the exercise of clinical judgement is also critical as some patients may present with atypical features.

- Where possible, patients with suspected or confirmed COVID-19 should be isolated in single rooms with en suite facilities. However, where single room capacity is exceeded, it is necessary to cohort patients.

- Where a hospital institutes a process of testing all or most patients at admission, it is generally not practical or necessary to institute Transmission Based Precautions on those patients where there is no clinical suspicion of COVID-19 whilst awaiting testing results. However, it is important that laboratory turnaround times are as short as possible and that Transmission Based Precautions are immediately implemented for any patients who tests positive.

- Patients with confirmed COVID-19 can be cohort together
  - In the absence of single rooms, AGPs may be performed in multi-occupancy cohort areas for confirmed COVID-19 patients. However, all staff present in the area must wear appropriate PPE.

- Patients with suspected COVID-19 should not be cohort with those who are confirmed positive.

- The risk of cohorting suspected cases in multi-occupancy areas is much greater than that of cohorting confirmed positive patients together, as the suspect cohort is likely to include patients with and without COVID-19. This is most likely to occur in the assessment stage, where laboratory confirmation of COVID-19 is pending.

- Cohorting of suspected cases should be avoided if at all possible

- When suspected cases of COVID-19 are cohort in multi-occupancy areas:
  - An AGP should not be undertaken in a multi-occupancy are accommodating patients with suspected COVID-19, unless absolutely necessary, as there is an increased risk of cross-transmission to other patients
  - Patients with suspected COVID-19 requiring an AGP should be prioritised for negative pressure or single isolation rooms
Every effort should be made to minimise cross-transmission risk:

- Maintain as much physical distance as possible between beds, if possible reduce the number of patients/beds in the area to facilitate social distancing
- The patient should wear a surgical face mask where tolerated if whenever distance cannot be maintained
- Patients should remain in these multi-occupancy areas for as short a period of time as is possible
- Use privacy curtains between the beds to minimise opportunities for close contact.

- There should be clear signage indicating the area is a designated cohort area to alert staff, as cohort areas may include an area within a ward or extend to an entire ward. It may have multi-occupancy rooms or a series of single rooms.
- A designated cohort area should be separated from non-cohort areas by closed doors.
- Minimise movement of staff in cohort areas and ensure that the number of staff entering the cohort area is kept to a minimum, for example during clinical ward rounds.
- Staff working in cohort areas should not be assigned to work in non-COVID-19 areas during the same shift.
- Movement of staff and activities in cohort areas should ideally be linear (from clean to dirty zone) allowing staff to enter and exit the designated contaminated area through separate entrances. However, it is recognised that this may not always be feasible.

The area should not be used as a thoroughfare by other patients, visitors or staff, including patients being transferred, staff going for meal breaks, and staff and visitors entering and exiting the building.

**Personal Protective Equipment (PPE)**

- 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.
• In a pandemic situation, where stock shortages may be anticipated, new or different PPE items may need to be procured. In that situation, the hospital IPC team should review any new items of PPE for suitability and consider if existing guidance for staff require update to ensure it is compatible with the new item of PPE.

• On April 21 2020, the National Public Health Emergency Team (NPHET) decided to extend the use of surgical masks in healthcare settings to the following:
  o 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.
  o 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 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.

• 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 that manage 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.

**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.
  - Where HCW are engaged in high contact activities, 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 used in 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.

### 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 a HCW’s uniform or clothing.

**Fluid resistant coveralls** provide equivalent protection to fluid resistant long-sleeved gowns if worn, donned and doffed correctly. However, they can be more challenging to doff correctly and specific training is required for HCW who may need to use these items of PPE.

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 over or underneath 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) e.g. surgical mask with integrated visor, full face shield/ visor or goggles / safety spectacles.

### Surgical face masks

- The WHO recommends surgical facemasks should have good breathability, internal and external faces which can be clearly identified and meet EN14683 standard for Type II or higher.

- Type IIR masks should be worn 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.

- For patients surgical masks should have good breathability, internal and external faces which can be clearly identified and meet EN14683 standard for any type including Type 1.

**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**

• 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 not considered to be an airborne pathogen. However, when aerosol-generating procedures associated with an increased risk of infection (AGPs) are performed, FFP2 masks, in addition to eye protection are required. Properly-fitted cone shaped masks also provide appropriate protection. 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.

• It is preferable to avoid valved respirator masks where possible.

**Fit testing**

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 with this style of mask 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
- 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.

**Powered Air Purifying Respirators (PAPRs)**

A powered air purifying respirator (PAPR) encloses the entire head in a hood. Protection is provided against droplets (head is enclosed) and aerosols (air is pumped by a battery-powered pump though an appropriate filter into the hood). As the entire head is enclosed, a PAPR does not require a seal against the skin. The protection afforded is not reduced by facial hair. PAPRs are not generally used in Ireland and are not widely available. There may be significant challenges in relation to their use. Staff training on safe use and cleaning and maintenance is required in accordance with the manufacturer’s instructions, along with issues of user comfort (Appendix 3).

**Theatre caps/hoods and shoe covers**

- 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, (e.g. neurosurgery), head covers are not required and are not recommended.
- For a HCW with long hair, hair should be tied up and off their face when working in clinical settings.
- Theatre shoe covers are not recommended outside of the operating theatre area.
Recommendations for the use of Personal Protective Equipment (PPE) during COVID-19 pandemic

Table 1: Recommendations for the use of PPE during COVID-19 pandemic (updated following NPHET recommendation 22.04.20)

- 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.

- 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 that manage the risk of transmission of COVID-19.

<table>
<thead>
<tr>
<th>1.0</th>
<th>Non clinical areas such as administrative areas, medical records, staff restaurant and any other area where tasks do not involve contact with patients</th>
<th>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</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>All Activities</td>
<td>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</td>
</tr>
<tr>
<td>2.0</td>
<td>Receptions Areas</td>
<td>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</td>
</tr>
</tbody>
</table>

Table 1: Recommendations for the use of PPE during COVID-19 pandemic (updated following NPHET recommendation 22.04.20)
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Administrative activities in reception areas where staff are separated by at least two metres from patients and work colleagues.</td>
<td>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)</td>
</tr>
<tr>
<td>3.0</td>
<td>Patient transit areas, for example; corridors, elevators, stairwells, escalators, waiting areas</td>
<td>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 their level of contact (section 5.0)</td>
</tr>
<tr>
<td>3.1</td>
<td>Transfer of patients through public areas</td>
<td>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</td>
</tr>
<tr>
<td>3.2</td>
<td>All other activities (e.g. providing security, moving equipment etc.)</td>
<td>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</td>
</tr>
<tr>
<td>4.0</td>
<td>Pathology/Laboratory Areas</td>
<td>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</td>
</tr>
<tr>
<td>5.0</td>
<td>Clinical Areas</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Providing Care</td>
<td></td>
</tr>
</tbody>
</table>
| 5.1.1   | Patients with respiratory symptoms/suspected/confirmed COVID-19 who require an aerosol generating procedure* | • Hand hygiene  
• Disposable single use nitrile gloves  
• Long sleeved disposable gown  
• FFP2 respirator mask  
• Eye protection  |
| 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 | | |
| 5.1.2   | 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); | • Hand hygiene  
• Disposable single use nitrile gloves  
• Long sleeved disposable gown  
• Surgical facemask  
• Eye protection*  |
| • Close contact for physical examination /physiotherapy  
• Changing incontinence wear  
• Assisting with toileting  
• Device care or use  
• Wound care  
• Providing personal hygiene | | |
| *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. Individual risk assessment must be carried out before providing care. This assessment will need to include | | |
### 5.0 Clinical Areas

#### 5.1.3 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

- 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

- Hand hygiene
- Disposable single use nitrile gloves
- Disposable plastic apron
- Surgical facemask
- Eye protection*

*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. Individual risk assessment must be carried out before providing care. This assessment will need to include
- Whether patients with possible COVID-19 are coughing.
- The task you are about to perform

#### 5.1.4 All other patients where COVID-19 or other respiratory infectious pathogen is not confirmed or suspected

- 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
- Hand Hygiene
- Additional PPE if required as per standard precautions or transmission based precautions where they apply e.g. Norovirus

### 5.2 Cleaning

#### 5.2.1 Cleaning where patient is present

- Hand hygiene
- Disposable plastic apron
- Surgical facemask
- Household or disposable single use nitrile gloves

#### 5.2.2 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.

- Hand hygiene
- Disposable plastic apron
- Household or disposable single use nitrile gloves
### 6.0 Internal transfer of patients

| 6.1 | Accompanying a patient between areas within the same facility (e.g. when moving a patient from a ward to radiology / theatre, GP waiting area to assessment room) | Hand hygiene
If patient is walking and a distance of at least 2m can be maintained **NO PPE REQUIRED** for staff accompanying the patient
If staff accompanying patient and within 2m then PPE should be worn as outlined in section 5.0 |

### 7.0 External transfer for example between home and dialysis unit, inter hospital transfer, hospital to LTCF

| 7.1 | Accompanying a patient but able to maintain a physical distance of at least 2m and no direct contact is anticipated | Hand hygiene
If a physical distance of at least 2m and contact is unlikely **NO PPE REQUIRED** for staff accompanying the patient |
| 7.2 | Accompanying a patient within a 2m distance and likely to have direct contact | Hand hygiene
PPE 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 | 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 |
| 8.2 | No direct contact with patient and the driver’s compartment is separated from the patient | Hand hygiene
Maintain a physical distance of at least 2m **NO PPE REQUIRED** |

### 9.0 Individuals who may be accompanying patients (e.g., close family members)

| 9.1 | For suspected or confirmed COVID-19 cases
- Visiting should be restricted
- If visitors are permitted, they should be instructed how to correctly perform hand hygiene and supervised in donning/doffing PPE | Hand hygiene
Disposable plastic apron
Disposable single use nitrile gloves
Surgical face mask |
Donning PPE

Where to don PPE

- Don PPE in a designated area. This may be outside a room or a cohort area. If the entire ward is a cohort ward and extended use of PPE is adopted, then an area should be designated for this, at or near the entrance to the ward.
- Adequate supplies of ABHR and PPE should be available and stored securely.
- Placement of a mirror in the donning area should be considered, so a HCW can use the mirror to verify the integrity of their PPE and help to identify potential breaches in PPE in the absence of a colleague being present to check.
- PPE must be comfortable and secure before leaving the donning area.
- Signage highlighting key steps in the donning sequence, including instructions how to undertake a fit check of a respirator mask, where its use is indicated, must be clearly displayed.

What to do before you put on your PPE

- Remove all jewellery
- Remove mobile phones and pagers from pockets/belts and leave in a safe place
- Ensure you are well-hydrated and have availed of toilet facilities (in particular where prolonged patient care is anticipated)
- Tie hair neatly back away from the face
- Perform hand hygiene
Sequence of donning PPE

Videos on donning procedures are available on www.hpsc.ie

- Put on disposable gown and secure with ties
- Put on surgical face mask, secure ties/straps to crown of the head. Fit flexible band to bridge of nose. Fit snug to face and below chin
- If ear loop masks are used fit flexible band to bridge of nose. Fit snug to face and pull the loops over the ear lobes
- For an AGP, put on a respirator face mask (FFP2) instead of surgical mask and fit check. Please note this will require that the straps are placed to the middle back of head and neck
- Put on eye protection (if required) – and adjust to fit
- Put on gloves – pull glove wrist over the gown cuff
  - Double gloving is not appropriate in isolation rooms or cohort areas

Doffing PPE

The procedure for removing PPE may vary across organisations, depending on the layout of the facility and availability of PPE.

The most important thing when removing PPE is to avoid self-contamination and to pay close attention to hand hygiene.

In exceptional circumstances where an adequate new supply of certain PPE items temporarily cannot be secured, it may be necessary to modify usual procedures to facilitate collection of certain items of PPE with a view to reprocessing – for example protective eye wear. Reprocessing single-use items is not good practice. This should only be considered when all practical alternatives have been exhausted and a documented risk assessment indicates that it is the safer option in all the circumstances. If reprocessing of single use equipment is considered necessary as an emergency measure, this should be reviewed regularly and discontinued as quickly as possible.

Where to doff PPE
Where a patient is in a single room with an ante-room all PPE should be removed and discarded in the ante-room.

When a patient is in a single room with no ante-room, remove gloves, gown and eye protection in the patient room. Do not remove the surgical facemask/respirator until outside the patient room.

Where patients with confirmed COVID-19 are being cared for in a cohort area, the location for doffing PPE will vary depending on the layout of individual facilities.

**Sequence of doffing PPE**

**When all items can be discarded**

- Remove gloves and dispose in healthcare risk waste bin.
- Perform hand hygiene.
- Remove eye protection and dispose in healthcare risk waste bin (unless in exceptional circumstances it is being collected for reprocessing- see below).
- Remove gown (avoid touching the front of the gown) and dispose in healthcare risk waste bin.
- Perform hand hygiene.
- Remove mask/respirator. Grasp and lift mask ties from behind your head and remove surgical facemask or respirator mask if worn, away from your face.
- Alternatively, if ear loop face masks are worn, remove by grasping each loop on either side of the face beneath the ear lobes and gently pull the bands out and off the ear lobes away from your face.
- Avoid touching the front of the mask or respirator and use ties to discard in healthcare risk waste bin.
- Perform hand hygiene.

**If eye protection is in short supply and reprocessing is considered as an emergency measure, leave the eye protection and mask on until you have left the patient room/cohort area.**

- Remove gloves and dispose in healthcare risk waste bin
• Perform hand hygiene
• Remove gown (avoid touching the front of the gown) and dispose in healthcare risk waste bin
• Perform hand hygiene

EXIT THE ROOM

• Remove eye protection and place in a clean dry washable container, as per local arrangements.
• Remove mask/respirator. Grasp and lift mask ties from behind your head and remove surgical facemask or respirator mask if worn, away from your face.
• Avoid touching the front of the mask or respirator and use ties to discard in healthcare risk waste bin.
• Perform hand hygiene.

Duration of Transmission-Based Precautions

• Where possible patients should be discharged from hospital as soon as clinically appropriate.
• If a patient is discharged home and they are still in their isolation period, they should be advised to self-isolate. Advice for self-isolation is available here.
• In general, a test of clearance is not appropriate for COVID-19 patients and transmission based precautions can be discontinued fourteen days after symptom onset, where they have been fever free for five days.
• In general persons who attend hospital for outpatient or inpatient care who have had laboratory confirmed or clinically diagnosed COVID-19 do not require transmission based precautions if the following criteria are met;
  o 14 days have elapsed since the date of onset of symptoms and they have been fever free for the last 5 days (note if date of onset of symptoms is not clear use the date of diagnosis)
  o There are no other indications for applying transmission based precautions for
example they are not colonised with a multi-drug resistant organism

- In exceptional circumstances where a Consultant Microbiologist or Infectious Disease Physician is concerned on clinical grounds that there may be an ongoing risk of transmission beyond 14 days repeat testing may be considered in advance of ending Transmission Based Precautions. In such circumstances if virus nucleic acid is detected and a decision is made to extend Transmission Based Precautions the extension may be for up to 7 additional days (that is for a total of 21 days). No further testing is required at that time in advance of ending Transmission Based Precaution. This includes patients who are immunocompromised or require haemodialysis where care can be provided with usual precautions after that time.

- In general persons who attend hospital who are known to have had close contact with a laboratory confirmed or clinically suspected case of COVID-19 do not require Transmission Based Precautions but do require Standard Precautions if the following criteria are met;
  - They have no symptoms of COVID-19 infection (this should be confirmed before attendance and again at reception)
  - 14 days have elapsed since their last exposure to the individual
  - There are no other known indications for applying transmission based precautions for example known to be colonised with multi drug resistant organism.

- Contact patients who present within the 14 days of exposure should be isolated (or physically separated from other patients if attending essential OPD/Days services) and managed with transmission based precautions even if they are asymptomatic.

**Aerosol Generating Procedures**

Aerosol generating procedures (AGPs) are defined as medical and patient care procedures that result in the production of airborne particles ≤5 μm in size, which can remain suspended in the air, travel over a distance and may cause infection if they are inhaled. AGPs create the potential for airborne transmission of infections that may otherwise only be transmissible by the droplet route.
• A list of AGPs and recommended PPE is outlined in Tables 2-6.

• Where an AGP is necessary, it should ideally be undertaken in a negative-pressure or neutral pressure room, using recommended airborne precautions.

• If a negative/neutral pressure room is not available, the AGP should be undertaken using a process and environment that minimises the exposure risk for HCWs, ensuring that patients, visitors, and others in the healthcare setting are not exposed for example, a single room, with the door kept closed, away from other patients and staff.

• Essential personnel only should be present in a room/area where an AGP is being performed.

• HCW and visitors should leave the patient’s room during an AGP, unless it is necessary for them to remain to undertake the AGP or to assist with the patient’s care during the AGP. Those present in the room during the AGP must wear the recommended PPE for an AGP situation for the duration of the procedure and for 20 minutes afterwards in rooms with mechanical ventilation and for up to one hour in a room with natural ventilation.

• In critical care settings, where there is additional risk that an unanticipated AGP (e.g., due to accidental extubation, requirement for suctioning) may need to be performed urgently, it may be appropriate for all HCW present the area to wear an FFP2 mask.

Table 2: Aerosol generating procedures (AGP) which have been associated with an increased risk of transmission of respiratory infection

<table>
<thead>
<tr>
<th>Procedures</th>
<th>AGP Related Increased Risk of Pathogen Transmission</th>
<th>PPE for those with CONFIRMED OR SUSPECTED COVID-19 infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intubation</td>
<td>Consistently recognised</td>
<td>Hand Hygiene, FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Protection, Gloves, Long Sleeved Gown</td>
</tr>
<tr>
<td>Front of neck airway procedures – Insertion of</td>
<td>Consistently recognised</td>
<td>Hand Hygiene, FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td>Procedures</td>
<td>AGP Related Increased Risk of Pathogen Transmission</td>
<td>PPE for those with CONFIRMED OR SUSPECTED COVID-19 infection</td>
</tr>
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<tr>
<td>tracheostomy, cricothyroidotomy</td>
<td></td>
<td>Eye Protection</td>
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<td></td>
<td></td>
<td>Gloves</td>
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<td></td>
<td></td>
<td>Long Sleeved Gown</td>
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<tr>
<td>Tracheal Extubation</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
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<td></td>
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<td>FFP2 RESPIRATOR MASK</td>
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<td>Eye Protection</td>
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<td>Gloves</td>
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<td>Long Sleeved Gown</td>
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<tr>
<td>Bronchoscopy</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
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<td>FFP2 RESPIRATOR MASK</td>
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<td>Eye Protection</td>
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<td>Gloves</td>
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<td></td>
<td></td>
<td>Long Sleeved Gown</td>
</tr>
<tr>
<td>Positive pressure ventilation with inadequate seal*</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FFP2 RESPIRATOR MASK</td>
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<td>Gloves</td>
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<td></td>
<td>Long Sleeved Gown</td>
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<tr>
<td>CPR (pre intubation due to manual ventilation )¹</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FFP2 RESPIRATOR MASK</td>
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<td>Eye Protection</td>
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<td>Gloves</td>
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<td></td>
<td></td>
<td>Long Sleeved Gown</td>
</tr>
<tr>
<td>High Frequency Oscillatory Ventilation (HFOV)</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FFP2 RESPIRATOR MASK</td>
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<td>Gloves</td>
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<td>Long Sleeved Gown</td>
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<tr>
<td>Manual Ventilation</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
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<td>FFP2 RESPIRATOR MASK</td>
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<td>Eye Protection</td>
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<tr>
<td>Procedures</td>
<td>AGP Related Increased Risk of Pathogen Transmission</td>
<td>PPE for those with CONFIRMED OR SUSPECTED COVID-19 infection</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------</td>
<td>------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Open Suctioning-procedure where a single-use catheter inserted into the ETT either by disconnecting the ventilator tubing or via a swivel connector | Consistently recognised | Hand Hygiene  
FFP2 RESPIRATOR MASK  
Eye Protection  
Gloves  
Long Sleeved Gown |
| Induction of Sputum | Consistently recognised | Hand Hygiene  
FFP2 RESPIRATOR MASK  
Eye Protection  
Gloves  
Long Sleeved Gown |
| High Flow Nasal Oxygen (HFNO) including AIRVO | Accepted by many | Hand Hygiene  
FFP2 RESPIRATOR MASK  
Eye Protection  
Gloves  
Long Sleeved Gown |
| Non-invasive ventilation – CPAP/BiPAP | Accepted by many | Hand Hygiene  
FFP2 RESPIRATOR MASK  
Eye Protection  
Gloves  
Long Sleeved Gown |

### Table 3: Potential Aerosol Generating procedures due to use of High Speed Devices

<table>
<thead>
<tr>
<th>Procedure</th>
<th>AGP Related Increased Risk of Pathogen Transmission</th>
<th>PPE for CONFIRMED OR SUSPECTED COVID-19 infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruments used in Autopsy Procedures</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Protection</td>
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<tr>
<td></td>
<td></td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long Sleeved Gown</td>
</tr>
<tr>
<td>Instruments used in Dental Procedures</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
</tr>
<tr>
<td>e.g. the use of a high-speed hand piece</td>
<td></td>
<td>FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td>or ultrasonic instruments aerosolise</td>
<td></td>
<td>Eye Protection</td>
</tr>
<tr>
<td>patient’s respiratory secretions, saliva</td>
<td></td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long Sleeved Gown</td>
</tr>
<tr>
<td>Instruments used in surgical procedures</td>
<td>Consistently recognised</td>
<td>Hand Hygiene</td>
</tr>
<tr>
<td>e.g. the use of a high-speed drill in</td>
<td></td>
<td>FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td>neurosurgery &amp; major maxillofacial or</td>
<td></td>
<td>Eye Protection</td>
</tr>
<tr>
<td>ENT procedures traversing sinuses</td>
<td></td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long Sleeved Gown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hood</td>
</tr>
</tbody>
</table>
Table 4: Procedures, which may be associated with increased risk due to levels of droplet dispersion, proximity to airway, duration of procedure +/- where installation of fluid or suctioning may be part of the procedure

<table>
<thead>
<tr>
<th>Procedures</th>
<th>AGP Related Increased Risk of Pathogen Transmission Infection Risk</th>
<th>PPE COVID-19 CONFIRMED OR SUSPECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laryngoscopy</td>
<td>Plausible hypothesis- no evidence</td>
<td>FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long Sleevd Gown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Protection</td>
</tr>
<tr>
<td>Upper GI endoscopy</td>
<td>Plausible hypothesis- no evidence</td>
<td>FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gown/Plastic Apron</td>
</tr>
<tr>
<td>Transoesophageal Echo</td>
<td>Plausible hypothesis- no evidence</td>
<td>FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gown/Plastic Apron</td>
</tr>
<tr>
<td>Fibroptic endoscopic evaluation of swallowing (FEES).</td>
<td>Plausible hypothesis- no evidence</td>
<td>FFP2 RESPIRATOR MASK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Protection</td>
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<tr>
<td></td>
<td></td>
<td>Gown/Plastic Apron</td>
</tr>
</tbody>
</table>
Table 5: Procedures which are unlikely to be of increased risk as there are low levels of droplet dispersion, HCW is not in direct proximity to airway, duration of procedure is short and where instillation of fluid or suctioning is not part of the procedure.

<table>
<thead>
<tr>
<th>Procedures</th>
<th>AGP Related Increased Risk of Pathogen Transmission Infection Risk</th>
<th>PPE for those with CONFIRMED OR SUSPECTED COVID-19 infection</th>
</tr>
</thead>
</table>
| Collecting a nasopharyngeal swab                                           | Not supported by evidence or plausible hypothesis and not recognised by most national bodies. | Hand Hygiene  
  Surgical Face Mask  
  Gloves  
  Gown OR Plastic Apron*  
  Risk Assessment Re: Eye Protection |
| Delivery of nebulised medications via simple face mask                     | Not supported by evidence or plausible hypothesis and not recognised by most national bodies. | Hand Hygiene  
  Surgical Face Mask  
  Gloves  
  Gown OR Plastic Apron*  
  Risk Assessment Re: Eye Protection |
| Closed suction systems (CSS) enable patients to be suctioned by a suction catheter enclosed within a plastic sleeve, without the need for ventilator disconnection | Not supported by evidence or plausible hypothesis and not recognised by most national bodies. | Hand Hygiene  
  Surgical Face Mask  
  Gloves  
  Gown OR Plastic Apron*  
  Risk Assessment Re: Eye Protection |
| Chest physiotherapy in absence of other AGPs                               | Not supported by evidence or plausible hypothesis and not recognised by most national agencies. | Hand Hygiene  
  Surgical Face Mask  
  Gloves  
  Gown OR Plastic Apron*  
  Risk Assessment Re: Eye Protection |
### Table 6: Lower GI Procedures

| Procedure                  | AGP Related Increased Risk of Pathogen Transmission Infection Risk | PPE for those with CONFIRMED OR SUSPECTED COVID-19 infection |
|----------------------------|===================================================================|================================================================|
| Lower GI endoscopy         | Not supported by evidence or plausible hypothesis and not recognised by most national agencies. | Gloves, Apron, Risk Assessment |
| Note. RNA detected in Faeces but no cases of COVID-19 | | • Eye Protection  
  • Surgical Face Mask |
Infection Prevention and Control Precautions for Possible or Confirmed COVID-19 in a Pandemic Setting

V1.2 May 30th 2020

| Transmission by this route | have been reported |

Cleaning an area after an AGP has been performed

- Clearance of infectious particles after an AGP is performed will depend on the mechanical/natural ventilation and air changes per hour (ACH) within the room.
- A single air change is estimated to remove 63% of airborne contaminants; after five air changes, less than 1% of airborne contamination remains.
- In an isolation room with mechanical ventilation (10-12 ACH), it is advisable to wait for 20 minutes after the patient leaves following an AGP before entering the room to clean. A surgical face mask is not required if the patient is no longer in the room.
- A room with no mechanical ventilation is likely to have fewer air changes per hour (5-6 ACH). Therefore, it is advisable to leave the room for approximately one hour before cleaning after an AGP has been performed.

Patient Care Equipment/Instruments/Devices

- Reusable non-invasive medical devices should as far as it is possible be allocated to the individual patient or cohort of patients.
- These items (including stethoscopes) can be reused, with appropriate decontamination after patient use, after blood and body fluid contamination and at regular intervals, as part of the equipment cleaning schedule.
- Manufacturer’s instructions should be followed for cleaning and disinfecting of reusable medical equipment after use.
- Increase the frequency of cleaning/disinfection for reusable non-invasive care equipment when used in isolation or cohort areas.
- Single-use items must be discarded after use, in line with standard procedures.
- Staff should increase the frequency of cleaning of electronic equipment, such as mobile and desk phones, tablets, desktop touch screens, keyboards, printer touch screens. A supply of wipes should be available in areas where the devices are most commonly used.
Mobile healthcare equipment

- The following advice applies to devices that cannot be left in the isolation room, such as portable X-ray machines and portable electronic devices used in patient care:
  - The use of mobile healthcare equipment should be restricted to essential functions, as far as possible to minimise the range of equipment taken into and later removed from the room.
  - The operator of the device must have had training in IPC procedures, including hand hygiene and use of PPE.
  - The operator should perform hand hygiene and wear PPE, as described earlier in this document, when in the isolation room or cohort area.
  - Any equipment taken into the room which must be subsequently removed, needs to be cleaned and disinfected immediately after leaving the area.
  - Any additional items, such as a digital detector or a cassette will also need to be cleaned and disinfected in a similar fashion, regardless of whether there has been direct contact with the patient or not. This is due to the risk of environmental contamination of the equipment within the isolation room.
  - Personal digital assistants (PDAs) that are used with electronic blood tracking systems.
    - PDAs and wireless printers where used should be dedicated for use in cohort areas for confirmed/suspected COVID-19 patients and should not be used in non-COVID-19 areas.
    - The operator of the device must be trained and supervised in IPC procedures, including hand hygiene and use of PPE.
    - The operator should perform hand hygiene and wear PPE, as described earlier in this document, when in the isolation room or cohort area.
    - Due to the requirement for HCW to wear PPE they will be unable to scan their ID badge therefore they should bring a photocopy of their badge to the bedside for the PDA. The photocopy should be discarded in the healthcare risk waste bin in the room.
• After use, devices should be decontaminated in line with usual local policy. No additional precautions are required.
• It is important to check the cleaning guidelines accompanying each device. If a particular device is not capable of being adequately decontaminated (e.g., PDA with touch pads/buttons, they should not be used in these areas. If their use is unavoidable, consider using a single-use, self-adhesive protective film to cover the device and dispose of film after use.

Mobile Device Use in the Clinical Setting

Although there is limited evidence that directly links the use of mobile devices with an increase in healthcare associated infections, a number of studies have shown that mobile devices can act as potential sources for pathogenic bacteria including *Staphylococcus aureus*, *Klebsiella spp* and other organisms.

The increasing use of mobile phones and tablets present unique challenges in the healthcare setting because they are frequently touched by healthcare workers hands (with and without gloves), they are used in multiple patient rooms and other potentially contaminated environments or are carried in pockets or on lanyards.

It is important therefore that all mobile devices including tablet computers, mobile phones and personal digital assistant devices (PDAs) are used and managed safely to minimise the risk of cross infection and ensure patient care and safety is not compromised.

- Do not bring personal mobile devices with you when attending to a patient that requires transmission based precautions, when performing any activity that requires extended close patient contact or when performing an aseptic technique
- Healthcare workers must perform hand hygiene (HH) as per the ‘WHO 5 moments’ before and after each patient interaction and before and after touching any device
- Before using a mobile device remove your gloves and perform hand hygiene
- Avoid placing MDs on a patients bed or locker (consider IT stands or trolleys),
• Avoid inappropriate use of a mobile device during a clinical procedures, if a HCW has to take a call or text they should remove themselves from the activity, remove their gloves and clean their hands
• MD’s should not be used inside isolation rooms, home or cohort zone of infected patients/people unless for essential use when a risk assessment will be required
• If a mobile device must be used inside the isolation or cohort zone of patients with suspected/confirmed COVID-19 ensure the device cleaned & disinfected before, in-between patients and after use
• Alternatively consider the use of a protective cover, bag or film where appropriate
• Ensure all mobile devices are intact to allow effective cleaning/disinfection
• Mobile devices for use in the clinical environment should be of a design that allows them to be appropriately decontaminated e.g. an intact case/cover that will withstand cleaning and disinfection
• HCW’s should adhere to local policies about which cleaning product (wipe or solution) to use for decontaminating mobile devices
• Devices should be intact to allow effective cleaning/ disinfection for example - no cracked screen, casing or cover
• Accessories including charging lead and blue tooth keypads are intact with no wires bare, no cracks in plugs or case to allow effective cleaning/disinfection
• Devices used for clinical care/treatment/management must be cleaned/disinfected before, in-between patients and after use
• Devices given to an inpatient for use (ideally not an infected patient) must be cleaned at least twice daily and cleaned/disinfected before use by another patient
• Tablets or touch screens located in public places with open access must be cleaned at least twice daily or more frequently if the device is visibly contaminated
• Charging cabinets should be included in the cleaning schedule as per manufactures instructions
• HCW’s should always clean their own personal devices at least daily or at the beginning and end of shift.
• MDs should not be used in an isolation room or cohort area of suspected/confirmed COVID-19 patients without assessing the risk

General Environment

• The care environment should be kept clean and clutter free to facilitate cleaning.
• All non-essential items should be removed. This is to prevent unnecessary waste of essential supplies, which may occur if unused items in an area become contaminated.
• Only the minimum amount of equipment and supplies essential to patient care each day should be stored within an isolation room, ante-room or cohort area. Consider increasing the frequency of topping-up stock to achieve this.
• Patient observation charts, medication prescription and administration records (drug kardexes) and healthcare records should not be taken into the isolation room or patient zone within a designated cohort area to minimise the risk of contamination.
• Avoid the use of fans that re-circulate the air.
• If an electronic patient health record (EHR) is used in the facility, a mobile workstation for the EHR should remain in the cohort area.

Routine cleaning

• Decontamination of equipment and the care environment must be performed using either:
  • A combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm available chlorine (av.cl.)); or
  • A general purpose neutral detergent in a solution of warm water, followed by a disinfectant solution of 1,000 ppm av.cl.
  • Only cleaning (detergent) and disinfectant products supplied by employers are to be used. Products must be prepared and used according to the manufacturer’s instructions and recommended product "contact times" must
be followed.

- Cleaning/disinfection should only be performed by HCW fully-trained to undertake cleaning of an isolation room/cohort area and a cleaning schedule should be available.
- Staff should be trained in performance of hand hygiene and in the donning and doffing of PPE.
- Note that in general when not in the presence of a patient, there is no requirement for PPE other than household gloves and an apron for cleaning activities. If within 2 m of a patient or if within 2 m of colleague for more than 15 minutes a surgical mask is also required.
- Equipment used in the cleaning/disinfection of the isolation area should be single-use where possible and stored separately to equipment used in other areas of the ward/hospital.
- The patient isolation room should be cleaned/disinfected at least once per day and more frequently, as required and after an AGP or other potential contamination.

**Frequency of cleaning**

- An increased frequency of decontamination should be incorporated into the environmental decontamination schedules for areas where there may be higher environmental contamination rates (e.g., toilets/commodes, particularly if patients have diarrhoea; and ‘frequently-touched’ surfaces, such as medical equipment, door/toilet handles and bedside locker tops, patient call bells, over bed tables and bed rails). These areas should be cleaned at least twice daily and when known to be contaminated with secretions, excretions or body fluids.
- Patient isolations rooms, cohort areas and clinical rooms must be decontaminated at least daily. Clinical rooms should also be decontaminated after clinical sessions for patients with suspected/known COVID-19. Where an AGP has not been performed, the room can be cleaned as soon as possible, once the patient has vacated the room. There is no requirement for the room to remain unused.
Terminal Cleaning

Terminal cleaning is performed after the patient has vacated the room and is not expected to return (e.g., following patient discharge or transfer). In addition to the routine cleaning protocols, a terminal clean requires:

- Removal of all detachable objects from a room or cohort area, including laundry and curtains
- Removal of disposable items, including paper towels and toilet paper*
- Removal of waste
- Cleaning (wiping) of lighting and ventilation components on the ceiling
- Cleaning of curtain rails and the upper surfaces of hard-to-reach fixtures and fittings
- Cleaning of all other sites and surfaces working from higher up to floor level
- A terminal clean checklist is good practice to support cleaning or household staff to effectively complete all environmental cleaning tasks, which should be signed off by the cleaning supervisor before the room reopens for occupancy by a new patient.

Unused Medication, Blood Products and PPE

- Do not discard unused medicines or PPE that have been in close proximity to a COVID-19 case (for example contents of a crash tray or wrap or an intubation kit). If necessary, decontaminate medicine boxes/outer packaging with alcohol 70% wipes or disinfectant wipes. A partially-consumed medication tray/wrap/kit should be refurbished/replenished, as per local hospital arrangements.
- Unused blood components that were brought into an isolation room or cohort area should not be discarded due to concerns about COVID-19 so long as they meet local haemovigilance criteria for return. If there is concern about surface contamination then decontaminate the outer surface of the blood component bag using alcohol 70% wipes or disinfectant wipes.
Catering

- There is no need to use disposable plates or cutlery. Crockery and cutlery can be washed in a dishwasher, or by hand using household detergent and hand-hot water after use.
- Where practical, catering staff should not bring the catering trolley into a cohort area.
- If a HCW is already in a cohort area and wearing PPE, that person could take the meal trays from the catering staff member at the entrance to the area and deliver them to each patient, so the catering staff does not need to enter the cohort area.
- If catering staff do need to enter the cohort area and will be within two metres distance of a patient, they should wear appropriate PPE.

Water coolers

- Hospitals should assess the risk associated with transmission of COVID-19 associated with communal water coolers and reusable drinking receptacles particularly in clinical areas. Where there is an identified risk the water coolers should be decommissioned and an alternative drinking water supply provided.

A suspected case of hospital acquired COVID-19 in an inpatient

- The usual principles of detection and management of a cluster or outbreak of a transmissible pathogen in acute healthcare settings apply to COVID-19 including the legal obligation to notify the Department of Public Health.
- A local surveillance system should be implemented in each ward/clinical area, whereby early detection of an admitted patient with new symptoms which may be consistent with COVID-19 is part of the routine daily assessment and handovers.
- IPC teams should ask about patients or healthcare workers with new symptoms or signs of COVID-19 on their regular visits to wards (for example new onset fever, new onset or worsening of underlying respiratory symptoms and/or new onset of influenza-like illness (sore throat, cough, myalgia).
- Any HCW with symptoms consistent with COVID-19 infection should not attend work and
report illness following established local protocol.

- Detection of COVID-19 in an HCW requires an assessment as to whether they form part of a hospital associated chain of transmission involving patients and healthcare workers or primarily involving healthcare workers.

- At the start of each shift, all HCW assigned to a clinical area should be asked to confirm that they do not currently have symptoms of viral respiratory infection, such as fever, cough, shortness of breath or myalgia.

- In the event that any new symptoms develop during a shift, the HCW must report immediately to the person-in-charge and go off duty.

- Where an inpatient develops new symptoms consistent with COVID-19, apply the recommended IPC precautions for a patient with suspected COVID-19, a nasopharyngeal swab should be taken and a test ordered for SARS-CoV 2 (COVID-19).

- Inform the infection prevention and control team (IPCT) that an inpatient is being investigated for COVID-19.

- If the patient is already in a single room, apply all the additional element of Transmission Based Precautions required for a patient with suspected COVID-19.

- If the patient is accommodated in a multi-occupancy room/bay with other patients at the time that new symptoms develop, all patients in the room should be clinically evaluated, with ongoing close monitoring for new symptoms consistent with COVID-19. If any additional patients have or develop new symptoms, they should also be tested for SARS-CoV-2 (COVID-19).

- The multi-occupancy room or bay should be closed to new admissions pending receipt of the test result(s).

- A risk assessment must be undertaken, with regard to decisions to move patients who are awaiting a test result. This needs to take into account duration of the contact of the patients in the multi-occupancy room prior to symptom onset, the dependency and casemix of the patients currently in the room, whether there is availability of single room(s) for patient(s) with symptoms awaiting test results on that ward, the anticipated turnaround time for receipt of a laboratory test result and the availability of staffing on
the ward for day and night shifts. It may be prudent to avoid moving patients, unless clinical need dictates transfer to another department for escalation of care.

- If a patient is fit for discharge, they may be discharged, with advice for the patient to self-monitor for 14 days and contact their GP via telephone for advice in the event new symptoms develop.
- If it is deemed appropriate for all of the patients to remain in the affected multi-occupancy room/bay pending receipt of laboratory test result(s), the recommended IPC precautions for a patient with suspected COVID-19 should be applied to all patients in the bay, with nursing staff designated for the care of those patients for the duration of the shift.
- The test results should be reviewed as soon as available to inform next steps.
- If an inpatient is confirmed to have COVID-19, clinical care should be continued following the recommended IPC precautions for patients with confirmed COVID-19 and they should be moved to a single room, if not already accommodated in a single room OR if there are two or more patients with COVID-19 on the ward, they may be cohorted together

Managing a cluster or outbreak of COVID-19 in a hospital

- Each IPCT should have a robust system in place for early detection of inpatients with COVID-19 diagnosed after admission, as this may indicate hospital-acquisition and transmission.
- Given that the incubation period for COVID-19 can range from 1 to 14 days it is not possible to develop a definition of hospital acquired COVID-19 that is certain to include all hospital acquired cases and exclude community acquired cases. Any definition will represent a pragmatic attempt to achieve a reasonable balance. Pending publication of a European surveillance definition for hospital acquired COVID-19 the following definition may be used
  - **Onset of clinical features of COVID-19 more than 7 days after admission should be regarded as hospital acquired COVID-19**
• Onset of clinical features of COVID-19 between days 3 and 6 after admission are considered hospital acquired cases of COVID-19 if epidemiologically linked to hospital exposure
• Onset of clinical features of COVID-19 on day 1 or 2 after admission are considered community acquired unless epidemiologically linked to hospital exposure during a recent hospital admission
• If onset of clinical features cannot be defined, a case by case assessment is required taking account of the date of sampling relative to the date of admission, the ct value of the test result and epidemiological evidence of a link to hospital exposure.

- It is important that the IPCT and Occupational Health Department are in close contact to rapidly detect if there are HCWs with confirmed COVID-19 who have any epidemiological links to wards with suspected cross-transmission.
- If the test results indicate there are COVID-19 acquisitions associated with a ward or unit, an outbreak should be declared, an outbreak control team convened.
- An outbreak of COVID-19 notified to the Department of Public Health in addition to the standing obligation for dual notification of all cases of COVID-19 (laboratory and clinician).
- All of the usual outbreak control measures apply (Appendix 4 for checklist).
- Contacts of patients with confirmed COVID-19 should be cohorted together and monitored for new symptoms, with clinical care to include contact and droplet precautions.
- Avoid cohorting confirmed COVID-19 patients with patients who are not confirmed to have COVID-19.
- Wherever feasible, try to avoid moving inpatients between wards where transmission of COVID-19 is suspected, unless escalation of care is indicated.
- Closing an outbreak; an outbreak can be closed following consultation with the Department of Public Health once 28 days have elapsed (that is two incubation periods) after the onset of symptoms in the last case.
Guidance in relation to occupational health issues for healthcare workers (HCW) is available on www.hpsc.ie

Care of the Dying

- A compassionate, pragmatic and proportionate approach is required in the care of the dying.
- The presence of a person close to the individual should be facilitated in so far as it is possible, they should be aware of the potential infection risk.
- Pastoral care team where requested by the person or their family should NOT be restricted from entering an isolation room or cohort area.
- All persons in attendance should be advised to wear a surgical mask and plastic apron. Gloves are not essential for skin to skin contact so long as those in attendance understand the risks perform hand hygiene after touching the person and before leaving the room.
- Visitors should be instructed on how to put on and take off the PPE & how to perform hand hygiene. Where practical visitors should be supervised when donning and doffing PPE
- If specific religious rites require direct transient physical contact with the skin, gloves are not necessary so long as hand hygiene is performed after touching the person

Specific settings

The following guidance is given to assist specific care settings to implement the principles of standard precautions and transmission-based precautions described in this document, which apply in all care settings. This section will be updated as further information becomes available.

Critical Care Setting
• If admitted to a critical care unit, the patient should be nursed in a negative pressure isolation room where available, or if not available, a single room with a closed ventilator circuit should be used.
• The door to the room must remain securely closed, except when entering or leaving.
• All respiratory equipment must be protected by a filter with high efficiency (e.g., BS EN ISO 23328-1:2008).
• Disposable respiratory equipment should be used wherever possible. Re-usable equipment must be decontaminated in accordance with the manufacturer’s instructions.
• Ventilator circuits should not be broken, unless absolutely necessary.
• Ventilators must be placed on stand-by when carrying out bagging.
• Water humidification should be avoided and a heat and moisture exchange should be used if possible.
• Use only closed system suction.

Operating theatres

• The decision that surgery is essential during the period of infectivity for a patient with confirmed COVID-19 should be made by senior surgeons and anaesthetists.
• When the period of infectivity has passed (14 days with the last 5 days free of fever) testing for viral nucleic acid in advance of scheduling surgery is generally not appropriate
• Ventilation in both laminar flow and conventionally ventilated theatres should remain fully on during surgical procedures where patients have suspected or confirmed COVID-19 infection.
  o Aerosols which may be generated as a result of AGPs will be localised and rapidly diluted by operating theatre ventilation.
  o Air passing from operating theatres to adjacent areas will be highly diluted and is not considered to be a significant risk.
• Local risk assessment may dictate that a neutral pressure theatre or negative pressure theatre is preferred for COVID-19 procedures. The patient should be transported directly into the operating theatre and should wear a surgical mask if it can be tolerated.
• The operating theatre staff must be informed in advance of a patient transfer of a confirmed or possible COVID-19 case.
• The patient should be reviewed, anaesthetised, intubated, extubated and recovered in the operating theatre.
• Appropriate PPE should be worn by staff present in the theatre when AGP are performed (for example intubation, extubation). If the operative procedure is anticipated to involve an AGP, as described in the section on AGP, all staff present in the theatre for the duration of the surgery must wear appropriate PPE for an AGP scenario.
• Entry and exit from the room should be minimised during the procedure.
• Disposable anaesthetic equipment should be used where possible.
• The anaesthetic machine must be protected by a filter with viral efficiency to 99.99%.
• The operating theatre should be cleaned, as per local policy, paying particular attention to hand contact points (for example on the anaesthetic machine).
• Instruments and devices should be decontaminated in the normal manner, in accordance with manufacturer’s advice.

Theatre areas may be temporarily converted to critical care units to provide surge capacity for COVID-19. Any healthcare organisation which is undertaking this assessment or provision should seek to obtain specialist advice both internally from the organisation’s own multidisciplinary team (estates (AP(V), IPC, Clinical leads, Decontamination leads, Medical Gas AP(MPGS), Estates etc...) but also from an appropriately qualified and experienced Authorising Engineer (Ventilation) or other suitable professional design consultants with Healthcare Ventilation experience. Details on the technical aspects of this are beyond the scope of this guidance.

Outpatient Department (OPD) or Day Service
• Patients should be contacted in advance of attendance at the outpatient department (OPD) or day service to remind them to reschedule their appointment and to call their
GP if they develop symptoms consistent with COVID-19.

- A check for common symptoms of COVID-19 should be reinforced at reception or department entrance, through direct questioning and signage.

- OPD services should be organised to avoid or minimise waiting times for patients in congregated settings. Individual appointment times help to reduce contact between patients while waiting. Waiting in a car until called to be seen may be an option in some settings.

- If a patient attends the OPD or day service with symptoms of COVID-19 and their appointment cannot be deferred and/or clinical assessment or a change in a treatment plan is required, the patient should be immediately shown to a designated separate area. The patient should be asked to wear a surgical face mask if tolerated and instructed to stay in this location and not visit other departments or parts of the hospital/unit or go to public areas while awaiting assessment.

- The National Public Health Emergency Team has recommended use of cloth face coverings by members of the public in indoor settings where distance cannot be maintained. If distance cannot be maintained in the public areas of OPD this recommendation applies.

- In the patient care area there is no requirement for use of facemasks by asymptomatic patients who attend day services, however some patients may prefer to continue use cloth face covering. If there are patients whose anxiety is such that they would not attend for a necessary medical appointment if not provided with a surgical mask, then the provision of a mask to support the patients preference is appropriate.

- For patients who have recovered from COVID-19 a clinical decision is required regarding fitness to proceed with treatment especially if it is for immunosuppressing chemotherapy.

**Radiology**

- Refer to the section on mobile medical equipment for guidance on mobile X-ray devices.
• Refer to the section on PPE for guidance on requirements when undertaking procedures for those with known or confirmed COVID-19 infection.

• Symptomatic patients should be asked to wear a surgical face mask while waiting for and during their procedure, where tolerated.

• Appointments should be scheduled so that patients are not kept waiting in communal areas.

• If a patient with suspected or confirmed COVID-19 infection attends the radiology department, all surfaces and equipment that the patient has been in direct contact with should be cleaned and disinfected after the patient has left, as per standard protocol.

• The room can be cleaned once the patient has left and used once surfaces are dry unless an AGP was performed.

• Pay special attention to thorough cleaning of frequently-touched sites, such as the trolley, chair handles and horizontal surfaces.

• For CT scanning – once the patient has left the room the area can be immediately cleaned and disinfected as per standard protocols.

Dialysis

General preparedness

All dialysis patients should be provided with information on the signs and symptoms of COVID-19 infection and general measures including respiratory hygiene and cough etiquette, hand hygiene and social distancing available on www.hse.ie.

Review patient pathways to the dialysis unit e.g.

Ensure that arrangements are in place for individuals who do not have access to private transport to attend for their dialysis if they have symptoms of viral respiratory infection

If a symptomatic individual attends the unit, arrangements should be in place for samples to be collected and tested for COVID-19 as swiftly as possible. Where
possible referral to another site to facilitate this should be avoided to limit exposure and to optimise result turn-around time.

Review patient pathways within the dialysis unit

Ensure a designated isolation area has been identified for dialysis

Ensure that processes are in place for rapid triage and isolation of patients with symptoms of suspected COVID-19 or other respiratory tract infection

Develop strategies to minimise patient to patient contact for example stagger arrival times or expand waiting areas or bring patients directly to their dialysis station.

Provide access to alcohol hand rub and tissues.

Consider providing surgical masks to patients so that they can be used in the event they develop symptoms and need to attend the unit or for patients whose anxiety is such that they would not attend for a necessary medical appointment out of concern or fear.

Before arrival to the Dialysis Unit

Dialysis patients should be instructed to contact the dialysis unit if they have symptoms of respiratory tract infection or fever rather than presenting themselves for dialysis.

Dialysis patients who have been in close contact with someone who has suspected or confirmed COVID-19 infection should be instructed to advise the dialysis unit in advance of attending.

Patients should be advised to check their temperature before getting dialysis transport.

Transport

Asymptomatic patients can travel by their usual means.

Asymptomatic patients who have been informed that they are close contacts of person with COVID-19 infection will be following public health advice for self-quarantine.

- They may drive themselves to the unit or be driven by someone who is willing to drive them (Units should have arrangements in place in the event this is not possible).

- They should not use public transport or travel with another patient from the unit.
The patient should be advised to:

- Wash hands with soap and water before leaving their house
- In so far as is possible, maintain two metre distance from other individuals (for example sit in the backseat passenger side away from the driver)
- Wear a surgical face mask.

Individuals who have symptoms of COVID-19 or confirmed infection should telephone in advance of their appointment and if necessary may drive themselves to the unit if they feel well enough or be driven in private transport by someone who has already had exposure and is willing to drive them. If they have a surgical mask this should be worn for transfer to hospital. Where this is not possible the unit should have alternative arrangements in place.

**Patient Placement**

- **Asymptomatic Individuals** - should proceed with dialysis as per usual.
- **Asymptomatic individuals who are a close contact of someone who has confirmed COVID-19** should be placed in a dialysis station with at least two metres physical separation from other patients or in a single room if available.
- **Symptomatic Individuals – with possible or confirmed COVID-19 infection** should be placed in a single room, the door should remain closed where possible. Negative pressure isolation is not necessary unless AGPs are to be performed (see list of AGP above). Appropriate isolation signage should be placed on the door. Standard, Contact and Droplet precautions should be applied.
- In the event that the need arises, consideration can be given to cohorting patients with confirmed COVID-19 infection who require dialysis.

**Satellite Dialysis Units**
• If a dialysis patient has clinical features of COVID-19 and is still at home, the patient should be instructed to stay at home, and the parent renal unit should be informed so appropriate arrangements can be made.

• If a dialysis patient has clinical features for COVID-19 and presents to a satellite dialysis unit the patient should be placed in a single room and the parent renal unit contacted. If there is no isolation facility the patient should be given a surgical mask, access to alcohol hand rub and tissue and placed in an area at least 2m away from other individuals. If they are not in any distress it may be practical for them to wait in a car if they drove themselves to the unit.

Dialysis Machine

The dialysis machine cleaning/disinfection protocol should be adhered to as per standard practices.

Maternity Units

The following section addresses specific infection prevention and control issues which may arise in the care of a mother with suspected or confirmed COVID-19 infection in the maternity setting. This section should be read in conjunction with guidance from the Institute of Obstetricians and Gynaecologists RCPI available here.

Delivery

• Mothers should not be asked to wear a mask during labour and birth however they should be requested to wear a surgical mask when outside of the isolation room.

• Appropriate PPE must be worn by any person entering the room.

• It is recognised people have a right to have a birth partner with them to provide support to the mother in labour unless there are exceptional local circumstances that preclude this. Birth partners who are in attendance should be shown how to perform hand hygiene and provided with PPE and instructed how to put on and take off the PPE correctly.

• The use of birthing pools should be avoided for suspected or confirmed cases of COVID-19 infection.
• The use of Entonox or maternal pushing during labour are not aerosol generating procedures associated with an increased risk of infection.

Postpartum

• If the mother is well enough to care for the baby herself, both mother and baby should be isolated in a single room with en-suite facilities for the duration of hospitalisation. The following additional precautions are advised;
  • The baby should be placed in an enclosed incubator in the room
  • Where an enclosed incubator is not available the cot should be placed at least 2m distance from the mother.
  • When baby is outside the incubator and mother is breast feeding, bathing, caring for, cuddling, or is within 2m of the baby the mother should be advised to wear a surgical mask, and to clean her hands thoroughly with alcohol hand rub or soap and water before and after interacting with the baby.
  • The mother should be encouraged and taught to practice respiratory hygiene and cough etiquette
  • Baby should be temporarily removed from the room if any AGPs are to be performed within the room.
• Routine testing of babies born to mothers with suspected or confirmed COVID-19 infection is not appropriate however they should be closely monitored for signs of infection;
  o Parents should be provided with information about signs of possible COVID-19 infection in their baby and aware of who to contact if they are concerned post discharge.
• Visitors should be restricted. However, a risk assessment should be performed on a case by case basis and should be part of the discussion on who is providing care for the baby. Visitors should wear appropriate PPE

Breastfeeding
To date no evidence has been found to suggest that the virus is present in the breast milk of mothers with COVID-19. There has been no evidence of virus transmission in breastmilk from previous experience with other coronaviruses such as SARS CoV or MERS CoV and therefore the risk of transmission through breast milk is likely to be low.

- If a mother with COVID-19 is breastfeeding she should be advised to wear a surgical mask and to wash her hands or use alcohol based hand rub before and after interacting with her baby.
- If the mother is expressing breast milk using a pump, this should be dedicated to the mother for the duration of hospitalisation and should be cleaned and disinfected as per the manufacturer’s instructions.
- The expressed breast milk (EBM) container should be transported from the mother’s room to the storage location in a plastic-specimen transport bag. Storage conditions should be as per local policy however the EBM should be clearly marked and stored in a patient specific container box separate from EBM of other patients.

The neonate born to a mother with suspected or confirmed COVID-19 infection

- Suctioning, bag mask ventilation and intubation of newborns are considered to be aerosol generating procedures and although the absolute risk to HCW performing these procedures on newborn infants is thought to be low, appropriate PPE should be worn.
- As soon as the infant is stabilised after birth, they should be placed in an enclosed incubator.
- Where admission to a neonatal unit is required for an infant of a mother with suspected or confirmed COVID-19 infection;
  - The neonate should be isolated in an enclosed incubator in a single room where possible. Appropriate isolation signage should be in place
  - Staff caring for infants of suspected or confirmed COVID-19 infants should wear appropriate PPE (link to PPE)
  - The duration of transmission based precautions should be discussed on a case by case basis with the local Infection prevention and control team
  - In relation to visitors a risk assessment should be performed on a case by case basis and visitors should wear appropriate PPE.
Acute Mental Health Facilities/Units

The IPC requirements for care of people with suspected or confirmed COVID-19 are the same for patients in Acute Mental Health services as in other acute services however there may be specific challenges related to the patients overall care needs. Therefore, if a patient is suspected or confirmed to have COVID-19, the recommended IPC precautions should be instituted as above but may subject to the following considerations.

- Isolation in a single room may be associated with specific risks in relation to the patients overall care needs which may make this impractical to apply
- If the patient cannot be placed in a single room but can tolerate wearing a mask this may help to reduce risk of exposure for other patients and staff
- If isolation in a single room is not practical or is not safe consideration should be given to how the patient can be cared for in ways that maintain distance of 2m from other patients and from staff to the greatest extent possible for example if there is a bay or area where the person has as little contact as possible with other patients
- If more than one person with COVID-19 is in the unite consideration should be given to locating patients with COVID-19 in proximity to each other to the greatest degree possible. Please refer to cohorting section.
- Staff should general use PPE as above. Staff should use PPE as outlined in the Recommendation for the use of PPE section
- If wearing of a mask by staff creates practical difficulties in interacting with the patient wearing a clear full face visor will substantially reduced exposure of staff to droplets though this is not generally accepted as equivalent to use of a surgical mask
- If the patient is high mobile facilitating access to a safe outdoor location where possible may be helpful in reducing risk of exposure of other patients and staff

Transfer

Internal Transfer
• Minimise movement of the patient from the single room or designated cohort area.
• Patient should wear a surgical mask when outside their room or designated cohort area.
• All HCWs who are in close contact (within 2m) with the patient should wear appropriate PPE during transfer.
• HCW in the receiving departments should be informed of the precautions required prior to the transfer of the patient (e.g., diagnostic departments, operating theatre).
• Investigations should be scheduled so that patients are not waiting in communal areas.
• HCWs carrying out procedures should wear appropriate PPE for the task to be undertaken.
• Cleaning and decontamination of the patient’s room or bedspace in a cohort area, along with equipment should be undertaken following completion of the procedure.

External Transfer

• Transfer of patients with confirmed COVID-19 to another hospital should be avoided, unless it is required for medical care.
• If transfer is required, it is the responsibility of the transferring facility to inform in advance, the HCW in the receiving facility and the ambulance personnel of the diagnosis, the date of symptom onset and the precautions required.
• Standard, contact and droplet precautions, with appropriate PPE should be continued during patient transfer and upon arrival at the receiving facility.
• In keeping with the written communication issued by the HSE’s Chief Clinical Officer on 19.03.20, transfer of patients should not be refused or delayed, pending results of testing for COVID-19. Testing of asymptomatic individuals as a condition of transfer is not acceptable.

Guidance on the transfer of hospitalised patients from an acute hospital to a residential care facility

Please refer to guidance for residential care facilities available on www.hpsc.ie
Transfer from primary care/community settings using Hospital Transport systems for example Oncology Day Care

- Patients attending for essential care (Oncology) should be advised; to contact their usual care unit by telephone if they have new symptoms consistent with COVID-19, rather than presenting themselves.
- Patients who have been in close contact with someone who has suspected or confirmed COVID-19 infection should be instructed to advise the unit in advance of attending.
- Patients should be advised to check their temperature before travelling.
- Asymptomatic patients can travel by their usual means.
- Asymptomatic patients who have been informed that they are close contacts of person with COVID-19 infection will be following public health advice for self-quarantine. They may drive themselves to the unit or be driven by someone who is willing to drive them (Units should have arrangements in place in the event this is not possible). They should not use public transport or travel with another patient from the unit. The patient should be advised to:
  - Wash hands with soap and water before leaving their house
  - In so far as is possible, maintain two metre distance from other individuals (e.g., sit in the back seat passenger side away from the driver)
  - The patient should be advised to wear a mask
- Patients who have symptoms of possible COVID-19 must telephone in advance of their appointment and if necessary may drive themselves to the unit, if they feel well enough or be driven in private transport by someone who has already had exposure and is willing to drive them. If they have a surgical face mask this should be worn, if tolerated for transfer to the hospital. Where this is not possible, the unit should have alternative arrangements in place

Laboratory

- For information in relation to laboratory processes, refer to HPSC recommendations on *Biosafety guidance for diagnostic laboratories handling specimens from individuals with*
possible, probable or confirmed infection with Novel Coronavirus (2019 nCoV), Middle East respiratory syndrome Coronavirus or Avian Influenza A available at www.hpsc.ie

- Double bagging of specimens at time of collection is not required, but care should be taken not to contaminate the outside of the bag
- Laboratory specimens, including those from COVID-19 patients can be sent by pneumatic tube systems, in line with standard operating procedures
- Blood cultures can be collected, as per standard procedures
- Clinical HCW should laboratory HCW when specimens are submitted from a patient with suspected or confirmed infection, through proper completion of request forms or electronic test ordering systems, or by direct communication with the laboratory. Transport of specimens between laboratories should be in accordance with Category B transportation regulations

Point-of-Care Testing

- Point-of-care testing (POCT) should not be performed on potentially-infectious specimens where a practical and safe alternative exists. If point-of-care blood gas analysis is necessary to manage a critically ill patient, the incremental risk to HCW beyond the risk of delivering direct patient care is likely to be minimal and it may be performed with the following precautions:
  - The operator must adhere to standard, contact and droplet precautions throughout the blood specimen collection at the patient’s bedside
  - The needle should be removed and disposed of safely and the adaptor applied to the tip of the syringe. If air must be expelled from the sampling syringe, this should be performed in the patient care zone with the syringe pointing away from the operator
  - Ideally a blood gas analysis machine should be placed within the patient room if repeat testing is likely to be required. If a blood gas analysis machine is not in the patient room, then the syringe should be laid flat in a disposable tray with deep sides for transport to the blood gas analyser
• Remove PPE and perform hand hygiene on leaving the patient room. Apply clean gloves and transfer specimen to a clean disposable tray and take the tray with the specimen to the blood gas analyser
• The analysis of the specimen may be performed as normal, using standard precautions. The residual blood in the syringe should be discarded as per standard practice and the instrument and its surroundings be cleaned/disinfected after use.

Care of the deceased with confirmed COVID-19 infection

• Please refer to the RCPI Faculty of Pathology guidance for performing autopsy procedures.

Communication of level or risk

• As COVID-19 is a new and emerging pathogen, it is understandable that those who will be handling the remains will be concerned and may wish to be made aware of the patient’s infectious status.

Hygienic preparation

• Any IPC procedures that have been advised before death must be continued in handling the deceased person after death
• Hygienic preparation includes washing of the face and hands, closing the mouth and eyes, tidying the hair and in some cases shaving the face
• Washing or preparing the body for religious reasons is acceptable if those carrying out the task wear long-sleeved gowns, gloves, a surgical face mask and eye protection if there is a risk of splashing which should then be discarded

Transport to the Mortuary
• An inner lining is not required in terms of COVID-19 risk as per WHO guidance but may be required for other, practical reasons such as maintaining dignity or preventing leakage affecting the mortuary environment.
• A face mask or similar should be placed over the mouth of the deceased before lifting the remains into the inner lining.
• Those physically handling the body and placing the body into the inner lining should wear, at a minimum, the following PPE:
  ▪ Gloves
  ▪ Long sleeved gown
  ▪ Surgical face mask
• Play close attention to hand hygiene after removal of PPE.
• Once in the hospital mortuary, it would be acceptable to open the inner lining if used for family viewing only (the mortuary attendant should wear PPE to open the inner lining as above).
• The family should be advised not to kiss the deceased and should clean their hands with alcohol hand rub or soap and water after touching the deceased.
• Once the body has been placed in the coffin PPE is not required for transfer or for other parts of the funeral or burial process. The unnecessary wearing of PPE during the burial and other public events can cause significant distress to families and should be avoided when not required.

Handling personal possessions of the Deceased

• Most Jewellery including watches, rings, bracelets, earrings and items like photo frames can be wiped down using a detergent/disinfectant wipe. Alternatively, items of jewellery (with the exception of watches) can be placed in hot soapy water and cleaned first, then rinsed and dried using disposable paper towel.
• Items of clothing and soft toys should be placed directly into a washing machine and washed on the hottest setting that the fabric can withstand.
• Paper materials for example prayer books /religious texts or items that cannot be wiped should be placed in a plastic bag and left aside for 72 hours before handling.
• Clothing that needs to be hand washed should be placed in a plastic bag and stored for 72 hours after which it can be washed.

• Personal belongings that family members wish to discard should be placed in a plastic bag and tied securely, then placed in a second plastic bag and set aside for 72 hours after which it can go out for collection in the general waste.

Extraordinary measures when PPE is in short supply

Reduce risk of exposure as much as possible

• Where possible, maintain a distance of at least two metres from the patient at all times. If this distance can be maintained and hand hygiene is performed, the use of PPE provides no additional risk reduction, unless an AGP is being performed.

• The absolute minimum number of staff required to provide care should engage with the patient. If remote communication by telephone or similar device is adequate, no one should enter the patient space. When entry into the patient room/space is necessary, no more than one person should enter the room, unless there is task that requires two people.

• Try to plan ahead for the person who enters the patient room or designated multi-occupancy cohort area, to complete as many tasks as possible on a single visit.

Substituting Items of PPE

As PPE supply lines improve the need to consider substitution of items of PPE in short supply should diminish

• Surgical face masks - Options may include; use of FFP2 respirator masks in situations in which they are not strictly required.

• Gowns - If gowns or coveralls are not available, disposable plastic aprons provide substantial protection although not on a par with a gown or coverall for high contact
activities. All HCW should be bare below the elbow and should perform hand hygiene extending up to the elbow after removing gloves in this situation

Prioritising use of PPE

AGPs performed on the airway of patients with confirmed or suspected COVID-19 are likely to represent the highest risk of transmission of infection to HCWs. If supplies of PPE are limited, these are the procedures that should be prioritised

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. If this is necessary it should be supported by a documented risk assessment.
- 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 foam, cloth or elastic elements - items with such 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.

• Where reprocessing of a PPE item that is normally designated as a single use item is indicated, a documented record should be retained locally of every day on which reprocessing was practiced and in so far as possible, the quantity of items reprocessed should also be documented.

• Every effort must be made to secure a new chain of supply, so the practice of reprocessing can be discontinued as quickly as possible.

**Decanting Alcohol-Based Hand Rub (ABHR)**

Decanting of ABHR from large to smaller containers is not ideal, but is acceptable if necessary in the context of a shortage of suitably-sized ABHR units AND in the context of the current COVID-19 pandemic.

The container used must be clean, dry and of a suitable nature. If removal of temporary units of ABHR is an issue, then increasing the number of fixed ABHR units may be considered locally.
Appendix 1 Respiratory/Cough Etiquette

Coughing and Sneezing

1. Turn your head away from others
2. Use a tissue to cover your nose and mouth
3. Drop your tissue into a waste bin
4. No tissues? Use your sleeve
5. Clean your hands after discarding tissue using soap and water or alcohol gel for at least 15 seconds

These steps will help prevent the spread of colds, flu and other respiratory infections.
Appendix 2 Healthcare Risk Waste

**RISK WASTE**

**YELLOW BAG**
- All blood-stained items and all items soiled with body fluids assessed as infectious
- Suction catheters & tubing
- Incontinence waste from known or suspected enteric infections
- Bag should be closed using ‘swan neck’ when 2/3 full

* NO SHARPS, LIQUIDS OR HARD OBJECTS

**YELLOW SHARPS BIN** (with blue or red lid)
- All Needles
- All Syringes
- Scalpels
- Contaminated slides
- Sharps tips of clear IV giving sets

* NO FREE LIQUIDS

**YELLOW 30/60 LITRE RIGID BIN** (with yellow lid)
- Blood Administration Sets (never disconnect line from bag)
- Contained blood and body fluids
- Non-cultured laboratory waste (including autoclaved microbiological cultures)
- Disposable suction liners
- Redivac drains (ensure drain closure sealed)
- Sputum containers
- Chest drains

* NO SHARPS OR FREE LIQUIDS

**NOTE**
- Absorbent material or gelling agent should be used in sufficient quantities to hold the fluid and prevent leakage.
Appendix 3 Preliminary Guidance on Facial Hair and Respiratory Protection in the Healthcare Setting in the Context of COVID-19 and other pathogens transmitted by the same route.

v1.1, 30.05.2020

Background
Healthcare workers (HCWs) are at increased risk of exposure to a variety of respiratory hazards including transmissible respiratory diseases. One element of protecting HCWs against infectious respiratory hazards is the effective use of specific items of personal protective equipment (PPE). Surgical face masks and respirator masks are the most commonly used types of PPE in this context.

1. Surgical masks

Surgical masks are intended to protect the wearer against the mucosa of the nose and mouth and most of the surrounding skin from impact of respiratory droplets originating from the respiratory tract of the patient. They are also intended to protect the patient from exposure to potentially infectious droplets from the healthcare worker. The degree of protection afforded is related to the properties of the mask and how it is applied in particular the fit of the mask to the face. Facial hair that is sufficient to prevent the mask from fitting flush against the skin of the face may result in reduced protection against droplet impact.

2. Respirators

In this context, respirators are intended to provide protection from infectious agents spread by the airborne route (small aerosols) including aerosols generated during Aerosol Generating Procedures associated with an increased risk of infection (AGPs).

There are two types:
(a) **Respirator masks (flat or cone shaped, FFP2 or FFP3)**

These are disposable masks and are intended to protect the wearer against inhalation of infectious aerosols in addition to protection against droplet impact. The degree of protection afforded is related to the properties of the mask and how it is applied, in particular the fit of the mask to the face. The filtration of aerosols is entirely dependent on forcing inhaled air to pass though the fabric of the mask. This works if the seal of the mask against the face prevents air circumventing the mask. Respirator masks that do not fit flush because of facial hair along the sealing area of the respirator cannot be considered as providing adequate protection against exposure to aerosols.

Fit testing of respirator masks and the fit checking of the mask each time used is required to ensure that the mask fits properly to the wearer’s face shape, with no gaps between the mask and face for air to escape unfiltered.

(b) **Powered Air Purifying Respirators (PAPRs)**

PAPRs enclose the entire head in a hood. Protection is provided against droplets (head is enclosed) and aerosols (air is pumped by a battery-powered pump though an appropriate filter into the hood). As the entire head is enclosed, PAPRs do not require a seal against the skin. The protection afforded is not reduced by facial hair. PAPRs are not generally used and are not widely available. There may be significant challenges in relation to use of PAPRs. They may not be easy to source, costs are significant, staff need to be trained in their use, they must be cleaned and decontaminated according to the manufacturer’s instructions and there can be issues of user comfort.

**Options for Management**

There is no one solution that will work for every facility and for every healthcare worker. The options for healthcare workers with facial hair that prevents a surgical mask or respiratory mask from fitting flush against the skin are as follows:
1. Remove facial hair that interferes with the fit of the mask flush against the skin. This is the most practical way to ensure that staff can benefit fully from protection provided by surgical masks and properly fitted respirator masks.

2. For healthcare workers for whom removal of facial hair that interferes with the fit of the mask flush against the skin is not an acceptable option
   a) surgical masks are likely to provide useful protection against droplet transmitted infection but this may be at a reduced level.
   b) respirator masks cannot be expected to work effectively

3. Risk management options include
   a) Consider if they can be assigned duties that do not involve direct care for patients for whom aerosol precautions are required.
   b) Wear a PAPR when caring for patients for whom airborne precautions are required.

Notes.
1. This note relates only to use of respiratory protection related to infectious disease. Exposure to other hazardous substances is beyond the scope of this document.
2. For an illustration of facial hairstyles that may impact on the function of respirator masks see https://blogs.cdc.gov/niosh-science-blog/2017/11/02/noshave/
Appendix 4 Checklist to support COVID-19 outbreak management in acute healthcare setting.

<table>
<thead>
<tr>
<th>Number</th>
<th>Checklist points</th>
<th>Check/Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section A. Informing Key Stakeholders &amp; Notification of outbreak</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>Arrange relevant internal communication</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Notify Public Health</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Involve Occupational Health</td>
<td></td>
</tr>
<tr>
<td><strong>Section B. Surveillance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>Convene Outbreak Control Team (General Manager or Deputy)</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Ensure up to date surveillance data is available</td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Ensure rapid lab confirmation of COVID-19 is available</td>
<td></td>
</tr>
<tr>
<td><strong>Section C. Testing and Patient Placement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>Consider if ward closure is necessary</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Review patient isolation/cohorting arrangements</td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>Consider individual patient needs</td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>Provide dedicated equipment as required</td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>Implement enhanced surveillance and testing as appropriate.</td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>Identify all in hospital contacts (patients and staff)</td>
<td></td>
</tr>
<tr>
<td>C7</td>
<td>Ensure all patients contacts still in hospital are appropriately informed and managed</td>
<td></td>
</tr>
<tr>
<td>C8</td>
<td>Ensure all staff contacts are appropriately informed and managed</td>
<td></td>
</tr>
<tr>
<td>C9</td>
<td>Ensure public health are informed of all discharged contacts and highlight any discharged to residential care facilities</td>
<td></td>
</tr>
<tr>
<td><strong>Section D. Patient Movement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>Review patient movements</td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>Limit patient transfers</td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>Ensure transfers to other facilities are planned and communicated</td>
<td></td>
</tr>
<tr>
<td>D4</td>
<td>Where appropriate inform other relevant stakeholders e.g. other hospitals within the group, Hospital Group, Acute Operation relevant Community Health Organisations (CHOs)</td>
<td></td>
</tr>
<tr>
<td><strong>Section E. Resources, Education and Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E1</td>
<td>Ensure adequate PPE stocks and ABHR available.</td>
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</tr>
<tr>
<td>E2</td>
<td>Review staffing levels</td>
<td></td>
</tr>
<tr>
<td>E3</td>
<td>Confirm staff are trained in appropriate use of PPE</td>
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<tr>
<td><strong>E4</strong></td>
<td>Assess hand hygiene training and compliance</td>
<td></td>
</tr>
<tr>
<td><strong>E5</strong></td>
<td>Assess PPE training and compliance</td>
<td></td>
</tr>
<tr>
<td><strong>E6</strong></td>
<td>Provide real time feedback on performance to staff</td>
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</table>

**Section F. Communication with staff**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>F1</strong></td>
<td>Ensure staff members are aware of outbreak and measures to control it</td>
</tr>
<tr>
<td><strong>F2</strong></td>
<td>Ensure appropriate on-ward signage available</td>
</tr>
<tr>
<td><strong>F3</strong></td>
<td>Ensure appropriate signage at ward entry</td>
</tr>
<tr>
<td><strong>F4</strong></td>
<td>Ensure staff are reporting on fitness to work on arrival for each shift</td>
</tr>
<tr>
<td><strong>F5</strong></td>
<td>Ensure staff are aware of reporting pathways if symptomatic</td>
</tr>
</tbody>
</table>

**Section G. Communication patients, visitors and public**

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>G1</strong></td>
<td>Ensure patients and or relevant persons are informed promptly</td>
</tr>
<tr>
<td><strong>G2</strong></td>
<td>Ensure visitors are aware of outbreak and associated risks</td>
</tr>
<tr>
<td><strong>G3</strong></td>
<td>Ensure essential visitors are supported in hand hygiene and use of PPE</td>
</tr>
<tr>
<td><strong>G4</strong></td>
<td>Ensure appropriate communication with wider community</td>
</tr>
</tbody>
</table>

**Section H. Communication between healthcare facilities on transfer/discharge**

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>H1</strong></td>
<td>Appropriate pathways for communication in place.</td>
</tr>
<tr>
<td><strong>H2</strong></td>
<td>Information provided on discharge letters to GP and others as required</td>
</tr>
</tbody>
</table>

**Section I. Environmental Hygiene**

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<table>
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<tr>
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<tbody>
<tr>
<td><strong>I1</strong></td>
<td>Hygiene services on OCT</td>
</tr>
<tr>
<td><strong>I2</strong></td>
<td>Review and monitor cleaning practices for both equipment and environment in line with guidelines</td>
</tr>
</tbody>
</table>

**Section J. Environment**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>J1</strong></td>
<td>Designated areas for donning and doffing</td>
</tr>
<tr>
<td><strong>J2</strong></td>
<td>PPE is easy to access and properly stored</td>
</tr>
<tr>
<td><strong>J3</strong></td>
<td>Unnecessary equipment removed</td>
</tr>
<tr>
<td><strong>J4</strong></td>
<td>Equipment for decontamination stored appropriately.</td>
</tr>
<tr>
<td><strong>J5</strong></td>
<td>Review measures to promote social distancing within hospitals in particular in staff communal areas e.g. changing rooms, restaurants etc</td>
</tr>
</tbody>
</table>

**Section K. Visitors and traffic control**

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<table>
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<tbody>
<tr>
<td><strong>K1</strong></td>
<td>Advise visitors of visiting restrictions</td>
</tr>
<tr>
<td><strong>K2</strong></td>
<td>Review non-essential services</td>
</tr>
</tbody>
</table>
## Appendix 5 Checklist to support a health care facility (HCF) using Powered Air Purifying Respirators (PAPRs)

<table>
<thead>
<tr>
<th></th>
<th>Policies and Procedures</th>
<th>Check/Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Policies and Procedures</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Person responsible for PAPR appointed by HCF</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>A policy on the safe use and donning and doffing procedure of the PAPR, which follows manufacturer’s instructions, should be documented in writing and approved by the HCF</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>Decontamination and reprocessing procedures must follow manufacturer’s instructions, should be documented in writing and approved by the HCF</td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>Procedure must be in place for the regular inspection and maintenance of PAPR as per manufacturer’s instruction to ensure that it remains safe for use</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Education and training</td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Training in the donning and doffing of PAPR in the setting of COVID-19 pandemic must be provided by the manufacturer to the HCF</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Training in the decontamination and reprocessing of reusable components of the PAPR must be provided by the manufacturer to the HCF</td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>Designated person responsible in HCF must ensure that users are competent in the safe use, donning and doffing and decontamination of PAPR before they can use the PAPR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Record keeping</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Designated person responsible in HCF must maintain a log of all staff who have been signed off as competent in the use of PAPR</td>
<td></td>
</tr>
</tbody>
</table>
### 3.2 Designated person responsible in HCF must ensure that a maintenance log is kept for each PAPR

### 3.3 Designated person responsible in HCF must ensure that a log is kept of each use and subsequent decontamination and reprocessing of PAPR

### 4 Risk Assessment and mitigation of risk

#### 4.1 Each HCF must undertake a risk assessment regarding the use of PAPR in surgical theatres. If risks are identified, such as the possible contamination of the surgical field by unfiltered exhaled air from the user the HCF must liaise with manufacturer to mitigate any risk. If this risk cannot be mitigated, HCF should reconsider the use of PAPR in this setting

#### 4.2 Each HCF must undertake a risk assessment regarding the use of PAPR in the setting of the COVID-19 pandemic. If risks are identified, such as the transmission of SARS-CoV-2 from an asymptomatic/pre-symptomatic HCW to patients and other HCW due to unfiltered exhaled air, the HCF must liaise with the manufacturer to mitigate any risk. If this risk cannot be mitigated, the HCF should reconsider the use of PAPR in this setting