

# COVID-19

## COVID-19 Infection Prevention and Control - Interim Guidance for DHB Acute Care Hospitals

10 August 2021

### About this guidance

This guidance outlines the infection prevention and control (IPC) procedures for DHB acute care hospitals providing care for probable or confirmed COVID-19 patients, and those who meet the Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19<sup>1</sup>. This is a living document and replaces previous versions of the IPC Procedures for DHB Acute Care Hospitals and includes further advice on IPC precautions and an organisational framework for IPC preparedness for the management of COVID-19 cases. Please consult with local IPC specialist teams if further risk assessment is required for specific circumstances.

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<sup>1</sup> Current COVID-19 case definition: [www.health.govt.nz/covid19-case-definition](http://www.health.govt.nz/covid19-case-definition)

# 1. Introduction

This guidance document outlines the Infection Prevention and Control (IPC) procedures to provide a safe workplace for District Health Board (DHB) acute-care hospitals that are receiving, assessing, and caring for COVID-19 patients, and those who meet the Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19<sup>2</sup>.

Planning and implementation strategies: to prevent and control COVID-19 should ensure;

- current Ministry of Health and DHB COVID-19 guidance is readily available and accessible in relevant areas
- early case recognition, containment, assessment, and reporting of cases occurs
- IPC control measures, including hand hygiene, appropriate use of personal protective equipment (PPE) and patient placement, are in place, along with physical distancing
- there is a process for regular audit and feedback to support continuous improvement in IPC practices
- that the practical ability to respond rapidly is supported through clearly defined links between key individuals, services and senior leadership.

This guidance is based on international guidelines and best current evidence available as the COVID-19 pandemic evolves. Some of the guidance set out in this document may need to be operationalised locally, however, the underlying principles of IPC should be adhered to.

Further updates may be made as new evidence emerges and in response to the level of community transmission in New Zealand.

Transmission-based Precautions have been the pillars upon which IPC guidance has been developed for healthcare settings when providing care for patients with suspected or confirmed COVID-19 infections. With the increasing strength of evidence for the role of aerosols in the transmission of SARS-CoV-2, we have revised this guidance document to improve the safety of healthcare workers providing care in hospital settings by mitigating the risk of exposure to small particles during patient care activities. Staff providing care for patients with suspected or confirmed SARS-CoV-2 infection should adhere to Airborne Precautions and wear a P2/N95 particulate respirator. Hospitals also need to ensure the use of effective ventilation controls, that facilitate the removal and dilution of aerosol, in clinical areas where patients with suspected or confirmed COVID-19 infections are assessed and cared for.

## 2. Routes of transmission

The route of transmission of SARS-CoV-2 continues to be an area of debate in the medical and scientific community. The traditional paradigm has been that respiratory viruses are transmitted by exposure to large droplets (> 5 µm) and through contact with contaminated surfaces. Close range contact with the infectious individual is required for transmission of the infectious agent. Airborne transmission via small respiratory particles, less than 5 µm, (termed aerosols) is thought to occur with only a few infectious diseases, namely measles, varicella, and laryngeal and pulmonary tuberculosis. However, scientific studies have shown that exhaled particles generated by talking, shouting, singing sneezing or coughing are predominantly small particles. These small particles can carry viable infectious viruses and bacteria<sup>3</sup>. The evidence that SARS-CoV-2

<sup>2</sup> Current COVID-19 case definition: [www.health.govt.nz/covid19-case-definition](http://www.health.govt.nz/covid19-case-definition)

<sup>3</sup> Fennelly KP. Particle sizes of infectious aerosols: implications for infection control. *Lancet Resp Med* 2020; 8: 914-24.

is transmitted by aerosols is becoming increasingly compelling in enclosed spaces, during prolonged exposure to respiratory particles and, in settings where there is poor ventilation or air handling.

Transmission also may occur through direct and indirect contact with contaminated surfaces, or by contact with equipment used on or by the infected person (e.g. stethoscope or thermometer) but the evidence to support this is unclear<sup>4</sup>.

Aerosol Generating Procedures (AGPs) can promote the generation of small particles (<5 µm). These fine particles remain suspended in the air for longer periods than larger particles and can be inhaled resulting in a risk of airborne transmission. The evidence supporting aerosol generation by different medical interventions is of low quality.<sup>5</sup> There are a number of groups looking at aerosol generation during medical interventions and the results of such studies are likely to better define the risk of aerosol generation in healthcare settings.

## 2.2 Infection prevention and control precautions

Standard Precautions and Transmission-based Precautions must be adhered to when managing patients with probable or confirmed COVID-19, or who meet the Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19.<sup>6</sup> In addition to practices carried out by health care workers when providing care, all individuals (including patients and visitors) should comply with infection control practices in health care settings. The control of spread from the source is essential to avoid transmission of COVID-19.

### Standard Precautions

Standard Precautions are the basic level of IPC measures which should always be applied regardless of the infectious nature of the patient, and in the case of all probable or confirmed COVID-19 patients, or those who meet the Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19.

#### Key elements of Standard Precautions:

**Hand hygiene** – hand hygiene must be performed before every episode of direct patient care and after any activity/task or contact that potentially results in hands becoming contaminated, including before and after putting on and removing personal protective equipment (PPE), and after equipment decontamination and waste handling. <https://www.hqsc.govt.nz/our-programmes/infection-prevention-and-control/topics/hand-hygiene>

- **Personal Protective Equipment (PPE)** – before use, assess the risk of exposure to blood and body fluids or contaminated surfaces before any health care activity.
- **Respiratory hygiene and cough etiquette** – this is important for source control. Make sure that the patient has access to tissues, is supported to safely dispose of the tissue after use and to perform hand hygiene.

<sup>4</sup> European Centre for Disease Prevention and Control. Infection prevention and control and preparedness for COVID-19 in healthcare settings. Sixth update – 9 February 2021. <https://www.ecdc.europa.eu/en/publications-data/infection-prevention-and-control-and-preparedness-covid-19-healthcare-settings>

<sup>5</sup> Assessing the evidence base for medical procedures which create a higher than usual risk of respiratory infection transmission from patient to healthcare worker, Version 1.2 14 May 2021. Antimicrobial Resistance and Healthcare Associated infection, National Services Scotland. [https://hpspubsrepo.blob.core.windows.net/hps-website/nss/3055/documents/1\\_agp-sbar.pdf](https://hpspubsrepo.blob.core.windows.net/hps-website/nss/3055/documents/1_agp-sbar.pdf)

<sup>6</sup> Current COVID-19 case definition: [www.health.govt.nz/covid19-case-definition](http://www.health.govt.nz/covid19-case-definition)

- **Safe use and disposal of needles and other sharps**
- **Aseptic technique** - adhering to a set of principles to prevent infection when performing a procedure.
- **Patient care equipment** – clean, disinfect and reprocess reusable equipment between patients.
- **Appropriate cleaning and disinfection** - of environmental and other frequently touched surfaces.
- **Safe waste management:** follow regional IPC protocols for managing waste.
- **Safe handling of linen:** follow regional IPC protocols for managing used linen.

Refer to the World Health Organization (WHO) poster on standard precautions for further information, available at: <https://www.who.int/docs/default-source/documents/health-topics/standard-precautions-in-health-care.pdf>

### **Transmission-based Precautions**

Transmission-based Precautions are used when Standard Precautions alone are insufficient to prevent cross transmission of an infectious agent when caring for a patient with a known or suspected infection.

### **Contact Precautions**

Contact Precautions are used in situations where the infectious agent is transmitted via direct contact with blood or body fluids or indirectly from contact with the immediate care environment (including care equipment).

In addition to Standard Precautions, the following infection control measures should also be followed.

- The patient should be placed in a single room (with an ensuite, where possible).
- Where possible, limit the movement of the patient outside of the room.
- Appropriate PPE should be worn (gloves and fluid-resistant long sleeve gown).
- PPE should be donned before entering the room and doffed upon exiting and safely disposed of.
- Remove and dispose of contaminated PPE and perform hand hygiene prior to transporting patients to other sites within the facility. Don clean PPE to assist the patient at the transport location.
- Use disposable or dedicated patient-care equipment. Avoid the use of share-patient equipment.
- Prioritise the cleaning and disinfection of these rooms.

### **Droplet Precautions**

Droplet Precautions are used to prevent and control infection transmission over short distances of large respiratory particles, termed droplets (>5µm). If they land on the mucous membranes of the nose and mouth or conjunctivae of the eye, they can transmit infection.

In addition to Standard Precautions, the following infection control measures should be followed:

- Place a medical mask on the patient, (if they can tolerate it), for source control.
- The patient should be placed in a single room (with an ensuite, where possible).
- Appropriate PPE should be worn by healthcare workers (medical mask and eye protection upon entry into the patient room or patient space).

- Limit transport and movement of patients outside of the room unless requiring a medical procedure in another department. If transport or movement outside of the room is necessary, instruct the patient to wear a mask and follow respiratory hygiene and cough etiquette.

### **Airborne Precautions**

Airborne Precautions are used to prevent, and control infection transmitted by small particles (<5µm) dispersed from the respiratory tract. **Refer to section 2** for modes of transmission for SARS-CoV-2.

In addition to Standard Precautions the following infection control measures should also be followed

- Place a medical mask on the patient, if they can tolerate it, for source control.
- The patient should be placed in an Airborne Infection Isolation Room (AIIR). If an AIIR is not available, place the patient in a single room that has an ensuite bathroom. The door should remain closed.
- Use PPE appropriately. The healthcare worker is to wear a P2/N95 particulate respirator that they have been fit-tested to. They should fit check it each time they wear one.
- *Refer to fit checking section in **Role of face masks and respirators** available at: [https://www.health.govt.nz/system/files/documents/pages/the\\_role\\_of\\_medical\\_masks\\_and\\_particulate\\_respirators\\_110821.pdf](https://www.health.govt.nz/system/files/documents/pages/the_role_of_medical_masks_and_particulate_respirators_110821.pdf)*

### **Best Practice for patient placement**

For patients admitted to a DHB acute-care hospital who are suspected, or confirmed COVID-19 cases, or meet the Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19<sup>7</sup>, the implementation of Standard and Transmission-based Precautions (Contact and Airborne) are required. If available, the utilisation of an AIIR room is recommended. If there is no available AIIR room, a single room with the door closed is an acceptable option. This room should not be positively pressured to the outside corridor. A portable HEPA filtration unit, if available, may be used in this setting and it would provide an additional measure of infection prevention during the assessment of the patient.

In situations where indoor air quality may be poor, such as single rooms with less than 6 air changes per hour, internal rooms with no mechanical ventilation, rooms where windows cannot be opened to allow for air movement or where alternate strategies such as portable filtration units are not available, then consideration should be given to transfer the patient to another facility with adequate ventilation controls. In the event of needing to transfer a patient(s) to another facility, there should be pathways included in the DHB's COVID-19 pandemic preparedness planning.

If a medical procedure that generates aerosols, an aerosol generating procedure (AGP), is being undertaken, Contact and Airborne Precautions should be adhered to.

For further information refer to Frequently Asked Questions at: <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-information-specific-audiences/covid-19-personal-protective-equipment-central-supply/frequently-asked-questions-about-ppe-and-covid-19>

## 3. Organisational preparedness for preventing and controlling COVID-19

Preventing transmission of SARS Cov-2 in the health care setting requires a multi-faceted approach to ensure early identification and containment measures are in place, engineering, environmental, and administrative

<sup>7</sup> Current COVID-19 case definition: [www.health.govt.nz/covid19-case-definition](http://www.health.govt.nz/covid19-case-definition)

controls are established, and appropriate PPE is available. The following IPC principles can be considered as a hierarchy of controls.

### 3.1 Elimination of potential exposure – ensuring triage, early recognition, and source control

- Risk assessment is key to ensuring that cases meeting the Clinical and Higher Index of Suspicion (HIS) criteria are identified on entry to acute care facilities and are isolated and cared for according to IPC guidance to protect patients, visitors, and health care workers.
- Cases meeting the Clinical and Higher Index of Suspicion criteria require testing for SARS-CoV-2 and should be managed with appropriate Transmission-based Precautions and adherence to administrative controls.
- Source control is critical, including the use of medical masks where tolerated, and support for the patient to follow appropriate hand and respiratory hygiene.
- During Alert Level 3 or 4 (Community transmission occurring **or** multiple cluster outbreaks) consideration should be given to universal masking of all patients presenting to high density areas where physical distancing is not possible when awaiting triage and COVID risk assessment, e.g. Emergency Department waiting rooms.

### 3.2 Implementation of administrative controls

Administrative controls are policies designed to prevent and reduce the risk of exposure and transmission of COVID-19 in the acute care setting and include, but are not limited to:

- sustainable IPC infrastructures and governance
- appropriately trained personnel in IPC activities
- implementation of appropriate IPC measures (e.g. Standard Precautions for all patients)
- education of all health care workers, patients and visitors around hand hygiene and respiratory hygiene
- the safe and appropriate donning and doffing of PPE and other practices designed to prevent transmission of COVID-19
- ensuring adherence to all IPC policies and procedures for all aspects of health care
- vaccination programmes for staff and vulnerable patients
- implementing screening in high-risk areas such as emergency departments, using Standard, Contact and Airborne Precautions and appropriate triage of patients who are a probable or confirmed case of COVID-19, and those who meet the Clinical and Higher Index of Suspicion (HIS) criteria. **(Refer to Appendix 1).**

Administrative controls also include:

- the design and use of appropriate work processes and systems, including access to prompt laboratory testing
- provision and use of suitable work equipment and materials that support and enhance the efforts of health care workers to contain and control the risk of infection
- a resourced fit testing programme which ensures that appropriate staff are fit tested to available respirators at least annually.

Effective strategies need to address environmental, organisational, and individual barriers to adherence. Intervention programmes need strong leadership and the involvement of all staff at all levels. Infection

prevention does not rely solely on a functional IPC team, but also depends on hospital organisation, bed occupancy, appropriate staffing ratios, and workload. On-going workplace risk assessment for SARS-CoV-2 is required to determine the level of risk for potential occupational exposure related to role, work task and work setting.

Administrative measures specifically related to providing a safe work environment for health care workers include:

- provision of adequate education and training for health care workers
- ensuring an adequate patient-to-staff ratio
- establishing a surveillance process for acute respiratory infections potentially caused by COVID-19 virus among health care workers
- ensuring that health care workers understand the importance of promptly seeking medical care
- ensuring adequate and appropriate consumables (for example non-sterile gloves)
- monitoring health care worker compliance with Standard and Transmission-based Precautions and providing mechanisms for improvement as needed (e.g. 'buddy' systems to support correct use of PPE)
- provision of dedicated clinical and non-clinical rooms for staff working with COVID-19 patients as deemed necessary through DHB risk assessment.

### 3.3 Implementation of engineering and environmental controls

The control of exposure at source, including adequate ventilation systems<sup>6,7</sup> and effective environmental decontamination physically reduces exposure to infection.

Controls to address the infrastructure of the acute care facility aim to ensure adequate ventilation in all areas of the facility, and environmental cleaning.

#### Engineering controls

Engineering controls can be used to reduce or eliminate exposure of healthcare workers and other patients to infected patients. They include the use of physical barriers and dedicated pathways, remote triage areas, airborne infection isolation rooms and single patient spaces rather than shared open bays in recovery areas. Engineering controls also focus on maintaining the quality of the indoor air.

Indoor air quality in shared spaces can be improved by:

- optimising air-handling systems to provide a minimum of 6 Air Changes per Hour (ACH)
- ensuring that the system in use provides appropriate directional air movement
- providing filtration of the air through high-efficiency particulate absorbing filtration where required
- using portable HEPA filtration units in high risk areas where permanent air-handling systems are not feasible
- consider opening of windows to provide natural ventilation if mechanical ventilation is not available
- The mechanical ventilation system in use in each hospital is fit for purpose, correctly installed and regularly maintained



- The IPC Service maintaining a close working relationship with the relevant service that provides oversight for air quality.

### Environmental controls

Effective cleaning and decontamination procedures are necessary to ensure removal of pathogens from the environment. There should be processes in place to ensure that environmental cleaning and disinfection procedures are followed consistently and correctly.

Management of laundry, food services and medical waste should be in accordance with local DHB policies.

Cleaning staff providing terminal cleaning of rooms should follow recommended practices and wear the appropriate PPE for the type of room and cleaning chemicals required. Cleaning chemicals should be effective against SARS-CoV-2.

## 3.4 Protection of health care workers and patients using hand hygiene and personal protective equipment (PPE)

### Hand Hygiene

Health care workers should follow the '5 moments for hand hygiene' before touching a patient, before any clean or aseptic procedure is performed, after exposure to body fluids, after touching a patient, and after touching a patient's surroundings. <https://www.hqsc.govt.nz/our-programmes/infection-prevention-and-control/topics/hand-hygiene/>

Patients should be enabled to clean their hands at key times and provided with the means to do so.

### Personal Protective Equipment

Clear guidance should be provided as to the choice of PPE when caring for a probable or confirmed COVID-19 case, or those who meet Clinical and Higher Index of Suspicion (HIS) Criteria. PPE should be donned prior to any interaction with a suspected, probable or positive COVID-19 patient.

The sequence for donning and doffing PPE should be visually indicated, and a place for these activities should be designated.

- PPE donning and doffing stations should be located close to the point of use (where this does not compromise patient safety, e.g. mental health/learning disabilities) but separate from each other. If located outside a room then the two activities should not be occurring simultaneously.

Medical masks, P2/N95 particulate respirators, gowns and eye protection can be worn continuously for up to 4 hours when providing care to patients in a cohorting setting. Gloves need to be replaced between each patient encounter. Hand hygiene must be performed with change of gloves. If during continuous use the PPE becomes damp, soiled or contaminated with blood or body fluids, then all PPE, including the gown, will need to be replaced.

There are many opportunities for the transmission of SARS CoV-2 and PPE is only one, albeit an important measure, to protect health care workers and others from being exposed to the virus. The use of PPE



should be accompanied by strict adherence to national and local IPC policies and procedures, and the overarching IPC principles of hand hygiene, respiratory hygiene and cough etiquette, physical distancing, cleaning of surfaces and frequently touched items and staying home when unwell.

Regular monitoring and feedback of adherence to PPE guidance as well as support and further education for staff when needed will improve compliance, safe practice and identify gaps in PPE training and advice. Identifying barriers to safe donning and doffing of PPE and enabling workable solutions will ensure the safety of health care workers, patients and visitors is maintained.

**For further information refer to:** [www.health.govt.nz/ppe-health](http://www.health.govt.nz/ppe-health)

### **Staff caring for probable or confirmed COVID-19 patients or those who meet the Clinical and Higher Index of Suspicion (HIS) criteria**

Staff assigned to care for probable or confirmed COVID-19 patients should:

- meet the occupational health policy for fitness to work in this situation and should be fully vaccinated (there should be adequate staff allocated to work in this area, with high staff to patient ratio ensured)
- follow the local procedure for documenting their details for Occupational Health follow up
- follow the guidance of their DHB for surveillance monitoring for COVID-19.

Staff who were not wearing adequate PPE for an interaction with a positive COVID-19 patient or who had a PPE breach that is considered significant by the IPC team are required to isolate at home, under the direction and monitoring of the Occupational Health team.

In March 2021, COVID-19 vaccination of all frontline healthcare workers commenced. A healthcare worker is considered to be fully vaccinated  $\geq 2$  weeks following the second dose of vaccine.

Vaccination is not mandatory for healthcare staff working in DHBs, therefore DHBs should work with their Occupational Health team to develop a policy to manage staff who are not vaccinated against COVID-19. For further information, refer to: <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-vaccines/covid-19-vaccine-information-health-professionals>

#### **NOTE:**

- 1. Fully vaccinated healthcare workers still need to follow IPC guidance including the use of PPE.**
- 2. Patients from Quarantine Free Travel Zones (QFTZ) are to be considered 'New Zealanders' when applying the HIS criteria.** <https://www.miq.govt.nz/assets/MIQ-documents/operations-framework-managed-isolation-and-quarantine-facilities.pdf>

## 4. IPC procedures for DHB acute care hospitals

The table below is for use by Infection Prevention Teams to refer to in developing IPC processes for managing patients, visitors and procedures throughout the hospital including admission from Accident and Emergency, or out-patient department.

Circumstances (Where, Who, What)	Actions and IPC measures
1. <b>Pre-hospital interface</b>	Primary care or ambulance service to notify the emergency department or the designated SMO at the DHB of the patient transfer to hospital.
2. <b>Public calls to emergency departments</b>	Refer to Healthline on 0800 538 5453.
3. <b>Calls from community providers</b>	Refer to Healthline on 0800 538 5453 or the local Public Health Service.
4. <b>PPE for health care workers assessing patients</b>	<b>Refer to Appendix 1</b> for the appropriate PPE to be worn by HCW
5. <b>Patients presenting to Emergency Departments <u>who are proven COVID-19 cases</u> or who <u>meet both the Clinical and Higher Index of Suspicion (HIS) criteria</u> for COVID-19</b>	<p>Triage and assess. Refer to <b>Risk assessment questions if COVID-19 status is unknown</b> or your local DHB COVID-19 pathway.</p> <p><b>Refer to Appendix 1</b> for the appropriate PPE to be worn by HCW</p> <p>Patients are to wear a medical mask for source control and need to be moved to an airborne infection isolation room (AIIR), or a single room with the door closed. They should be supported to follow respiratory and hand hygiene, and cough etiquette if able.</p>
6. <b>Any patient(s) presenting to Emergency Departments <u>who meet the HIS criteria only</u>, in the absence of clinical symptoms</b>	<p>When interacting with patients who meet the Higher Index of Suspicion (HIS) criteria, HCWs should <b>Refer to Appendix 1</b></p> <p>Patients without clinical symptoms consistent with an acute respiratory tract infection should still wear a medical mask.</p>
7. <b>Patients presenting to Emergency Department from Quarantine free travel zones</b>	<p>Patients from Quarantine Free Travel Zones (QFTZ) are to be considered as "New Zealanders" when applying the HIS criteria.</p> <p>If they work in an area or a role in their country of origin that meets the Ministry of Health's HIS criteria, they are managed the same as any New Zealander meeting the HIS criteria.</p>

<p><b>8. Movement of patients, who meet the Clinical criteria, or the Clinical and Higher Index of Suspicion (HIS) criteria, for COVID-19 from the Emergency Department to another department or to a ward</b></p>	<p>Each DHB should develop a patient pathway for movement of patients through their hospital starting in the Emergency Department.</p> <p>The movement and transport of patients should be limited to essential purposes only. Staff at the receiving department or ward should be advised that the patient meets the Clinical and HIS criteria.</p> <p>All health care workers involved in transferring the patient should adhere to Standard and Transmission-based Precautions <b>Refer to Appendix 1</b>. Clean PPE must be donned before transfer and it should be doffed when the transfer process is completed.</p> <p>If transferring the patient requires the use of a lift, as much as practically possible, the route should be clear, and the lift should be exclusively allocated for the patient and transfer staff. A designated “clean staff member”, who is part of the transfer team, is recommended to operate lift buttons etc.</p> <p>The patient must wear a medical mask for source control, if tolerated, on transfer to and from department(s), or on transfer to a ward, and must not wait in communal areas.</p> <p>If possible, patients should be placed at the end of procedure or surgical lists.</p> <p>Medical records should not be placed on the bed during transfer (consider placing in an envelope/plastic sleeve).</p>
<p><b>9. Accompanying family/ whānau, carer or support person in the Emergency Department, who meet the Clinical criteria or Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19, and who wants to remain with the patient</b></p>	<p>Ideally, in this situation, the family/whānau, carer and support person/people should be redirected to their GP or a community-based testing centre to get tested for COVID-19 and be required to self-isolate at home whilst awaiting the test result.</p> <p>If this situation is unavoidable, and they are required to remain with the patient in the Emergency Department during the assessment, the following actions should be undertaken to mitigate the risk:</p> <ul style="list-style-type: none"> <li>• This situation should be discussed with the senior clinical team COVID-19 response team, and the IPC service within the DHB.</li> <li>• The person should wear a medical mask and be supported to adhere to respiratory and hand hygiene and cough etiquette.</li> <li>• The person should be instructed to remain in the room/bay that the patient is in and not to leave this space unless it has been discussed with, and agreed to, by a senior member of the Emergency Department clinical team.</li> </ul> <p>If the patient is discharged home, the family or whānau member, carer or support person should be advised/informed to have a COVID-19 test and, self-isolate at home while awaiting the test result.</p>

<p><b>10. Accompanying family/ whānau, carer or support person who meet the <u>Clinical criteria or Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19, and who wants to remain with the patient following admission to the ward.</u></b></p>	<p>Ideally, in this situation, the family/whānau, carers and support person/people should be redirected to their GP or a community-based testing centre to get tested for COVID-19 and be required to self-isolate at home whilst awaiting the test result.</p> <p>If this situation is unavoidable, it should be discussed with the senior leadership team or COVID-19 response team, and the IPC service within the DHB, in conjunction with the local public health service, before the transfer to the ward occurs. Approval will be decided on a case-by-case basis and reviewed daily.</p> <p>The following additional actions should be undertaken to mitigate risk:</p> <ul style="list-style-type: none"> <li>• The person should be provided with a clean medical mask prior to leaving the Emergency Department to wear during transfer to the ward.</li> <li>• Once in the ward they should be provided with guidance about respiratory and hand hygiene, and the safe donning and doffing of a medical mask.</li> <li>• They do not need to wear a gown, gloves and eye protection in the room.</li> <li>• There should be a clear set of expectations provided to the family/whānau, carer or support person by the DHB about what they can, and cannot do, whilst in attendance. This should be provided verbally and in written form. If necessary, this may require assistance from interpreters. This will cover, but is not limited to the following: <ul style="list-style-type: none"> <li>○ the person should not leave the room unless they have discussed this with the health care worker team</li> <li>○ testing for SARS-CoV-2 may be required, if not already done</li> <li>○ daily symptom check will occur</li> <li>○ communication with other family/whānau should be via digital means only.</li> </ul> </li> </ul> <p>Food, clothing etc, can be handed to the reception area of the ward for delivering to the room.</p>
<p><b>11. Management of patients <u>meeting Higher Index of Suspicion (HIS) criteria for COVID-19 for an unrelated medical event</u></b></p>	<p>When interacting with patients who meet the Higher Index of Suspicion (HIS) criteria, HCWs should <b>Refer to Appendix 1</b></p> <p>Standard and Transmission-based Precautions should be followed at all times until the patient is discharged or until the 14 days self-isolation period has ended; whichever is the soonest. <b>Refer to Appendix 1</b></p> <p>Patient would be reviewed daily for symptoms. <b>Refer to Appendix 2</b></p> <p>If they do develop symptoms they should be managed with Contact and Airborne Precautions until SARS-CoV-2 infection can be excluded.</p> <p>If they remain in hospital for more than 14 days after meeting the HIS criteria then, following discussion with the IPC service, they can be removed from Transmission-based Precautions.</p>

<p><b>12. Entry into room</b> <b>(General information across all settings)</b></p>	<p>There should be;</p> <ul style="list-style-type: none"> <li>• Clear signage on the door with instructions on the level of PPE required before entering the room</li> <li>• Clearly demarcated donning and doffing areas including the sequence for donning and doffing PPE.</li> </ul> <p>Access is limited to essential health care workers only.</p> <p>Local policy should guide non-essential health care workers access to the room, for example, meal delivery.</p> <p>Maintain a record of all people who enter the patient’s room. This includes visitors and the names of accompanying family/whānau to support any future contact tracing. Ensure names of health care workers are recorded in notes, for future reference.</p> <p>As with any other health and safety issue identified (including blood and body fluid exposures), HCWs who experience a failure in PPE should notify their line manager and Occupational Health Department for advice.</p>
<p><b>13. Cohorting patients with confirmed COVID-19</b></p>	<p>Two or more patients with confirmed COVID-19 can be cohorted together in a multi-bedded room or bay. The decision to create cohort rooms or wards should be undertaken in discussion with senior management, COVID-19 response team, clinical microbiologists, infectious diseases physicians, and the IPC service.</p> <ul style="list-style-type: none"> <li>• Cohort areas should be separated from other patient areas with a door or physical barrier.</li> <li>• The cohort area should have an effective ventilation system in use. Additional ventilation equipment, such as portal HEPA filtration units, may be required.</li> <li>• Cohort area within a ward should be located away from high traffic areas, clearly identified, and in a safe area provided for donning and doffing PPE.</li> <li>• Clear signage indicating the required PPE is to be placed at the entrance of the cohort area.</li> <li>• Where possible only health care workers who have been assessed as competent in donning and doffing of PPE should be allocated to work in the cohort area.</li> <li>• A system to support correct use of PPE is recommended, e.g. a ‘buddy’ system.</li> <li>• Assigning a dedicated team of staff should be considered, along with ensuring that the staff: patient ratio is sufficient to support staff’s adherence to IPC measures.</li> <li>• Visiting should be in accordance with national or regional Alert Level - (case by case restrictions should be part of ward policy).</li> <li>• All staff working in such areas should be fully vaccinated.</li> <li>• Patients in cohort areas should be asked to wear medical masks for source control, when able.</li> <li>• Movement of patients out of the cohort area should be limited.</li> <li>• A dedicated bathroom for cohorted patient group should be implemented.</li> </ul>

	<ul style="list-style-type: none"> <li>• Cleaning should be undertaken more frequently and, cleaning staff should be assessed as competent in donning and doffing the appropriate PPE.</li> </ul>
<b>14. Visitors (to patients)</b>	<p>Visiting should be restricted to essential visitors only and align with the COVID-19 Alert Levels range of measures.</p> <p>Visitors should be assessed against Clinical and Higher Index of Suspicion (HIS) criteria for COVID-19 at each visit as per the local DHB policy.</p> <p>If visitors meet the case definition for COVID-19, have been identified as a close contact of the case, or meet the Higher Index of Suspicion (HIS) criteria for COVID-19, they should not be visiting the hospital.</p> <p>Visitors should be supported to use other means of contacting the patient, such as mobile phone communication. Each DHB should develop a communication policy.</p> <p>Signage should be visible at the entrance to the room and guidance on the required PPE and IPC measures visitors should follow.</p> <p>Medical masks, hand sanitisers and waste bins should be available.</p> <p>There should be clear simple instructions on how to don and doff a medical mask, how to safely dispose of it and when to perform hand hygiene. Both written and verbal advice around safe practice should be provided by the IPC Service, where feasible.</p>
<b>15. Collection of clinical specimens</b>	<p>Ensure the collection, type of specimen and transport media required are followed for the receiving laboratory.</p> <p><b>Refer to Appendix 1 for PPE requirements</b></p> <p>For hospitalised patients, consider collecting both upper and lower respiratory tract specimens. This should be undertaken in a single room with the door closed.</p> <p>Refer to: <a href="https://www.health.govt.nz/system/files/documents/pages/hp7353_02_-_ppe_ipc_poster_nasopharyngeal_testing_v3.pdf">https://www.health.govt.nz/system/files/documents/pages/hp7353_02_-_ppe_ipc_poster_nasopharyngeal_testing_v3.pdf</a></p>
<b>16. Diagnostic testing</b>	See local laboratory guidance.
<b>17. Clinical investigations and procedures</b>	<p>Use portable equipment wherever possible.</p> <p>Where this not possible, discuss with the relevant department before transferring the patient.</p> <p>The patient should go directly into the imaging/treatment room. The patient should wear a medical mask on transfer to and from department, and during the procedure.</p> <p>Contact and Airborne Precautions should be adhered to by the staff.</p>

	Clean the equipment and the procedure room after use as per local DHB IPC guidance.
<b>18. Handling of linen</b>	Infectious linen should be handled as per local DHB IPC guidance.
<b>19. Cleaning</b>	<p>An appropriate hospital grade disinfectant with activity against respiratory viruses, including coronavirus, or use a sodium hypochlorite solution (bleach) should be used to clean the hospital environment.</p> <p>Cleaning staff should be trained and updated regularly on the appropriate PPE to wear dependent on the environment.</p> <p>Cleaning schedules should include frequency of cleaning based on the area/s, risk and environment.</p> <p>On discharge of patient, a terminal clean should be done as per local DHB IPC guidance.</p>
<b>20. Waste</b>	<p>Infectious clinical and controlled waste should be disposed as per DHB IPC guidance.</p> <p>Large volumes of waste may be generated by frequent use of PPE; ensure regular emptying of waste to avoid over-filled bins.</p> <p>Used PPE may be considered Controlled Waste, however the DHB must be able to verify that the Controlled Waste is being handled in a sanitary landfill as per the Management of Health Care Waste Standard (NZS 4304: 2002).</p>
<b>21. Food service</b>	<p>Local policy should guide non-essential health care worker access to the room, including meal delivery.</p> <p>Standard Precautions should be used when handling used crockery and cutlery.</p> <p>Unopened food items or food waste is to be discarded as per local waste policy.</p>
<b>22. Hospitalised patient is ready for discharge</b>	<p>The clinical team will determine when the patient is well enough for discharge.</p> <p>The clinical microbiologist, infectious diseases specialist, or IPC Service should be involved in discharge planning and the Public Health Unit notified.</p> <p>For further information refer to COVID-19 advice for all health professionals:  <a href="https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-information-health-professionals/covid-19-advice-all-health-professionals">https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-information-health-professionals/covid-19-advice-all-health-professionals</a></p>
<b>23. Management of deceased patients</b>	<p>PPE must be worn when handling the deceased. The body should be placed in a fluid-proof body bag and once this has occurred Standard Precautions should be followed. Refer to below link for further advice.  <a href="https://www.health.govt.nz/system/files/documents/pages/management-of-deaths-due-to-covid-9-information-for-funeral-directors-19082020.pdf">https://www.health.govt.nz/system/files/documents/pages/management-of-deaths-due-to-covid-9-information-for-funeral-directors-19082020.pdf</a></p>



<b>24. Outbreak management</b>	If an outbreak of COVID-19 is suspected, implement the Outbreak Management Policy as per local DHB guidance, including contacting relevant departments or specialists such as the IPC service, clinical microbiologist, infectious diseases specialist and Public Health Unit.
<b>25. Personal care considerations for patients who meets the Clinical and Higher Index of Suspicion</b>	If assistance with personal cares are required for patients who are COVID-19 positive, the patient should wear a medical mask as appropriate and the assisting health care worker to <b>refer to Appendix 1</b> for PPE guidance.
<b>26. Reuse of PPE</b>	The reprocessing of single use PPE is not recommended.

## 5. References

1. Australian Government. Infection Control Expert Group: Guidance on the use of personal protective equipment (PPE) for healthcare workers in the context of COVID-19. June 2021  
<https://www.health.gov.au/resources/publications/guidance-on-the-use-of-personal-protective-equipment-ppe-for-health-care-workers-in-the-context-of-covid-19>
2. Branch-Elliman W, Savor Price C, Bessesen MT, Perl TM. Using the Pillars of Infection Prevention to Build an Effective Program for Reducing the Transmission of Emerging and Reemerging Infections. *Curr Envir Health Rpt* (2015) 2:226–235. DOI 10.1007/s40572-015-0059-7
3. Centers for Disease Control and Prevention (CDC) Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic Updated Feb. 23, 2021, Accessed 17 May 2021  
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>
4. Centers for Disease Control and Prevention (CDC) Scientific Brief: SARS-CoV-2 Transmission. Updated 7 May 2021, Accessed 17 May 2021  
<https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/sars-cov-2-transmission.html>
5. Communicable Diseases Network of Australia. National guidelines for Public Health Units, v4.4, 11 May 2021, Accessed 17 May 2021.  
<https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm>
6. FGI Guidelines for Design and Construction of Hospitals, 2018. Part 3: Ventilation of Hospitals  
<https://fgiguilines.org/guidelines/2018-fgi-guidelines/>
7. ANSI/ASHRAE/ASHE Standard 170-2017 Ventilation of Health Care Facilities  
<https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/ansi-ashrae-ashe-standard-170-2017-ventilation-of-health-care-facilities>
8. Public Health England Covid-19: Infection prevention and control guidance. V 1.1. Updated 21 January 2021 Accessed 17 May 2021  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/954690/Infection\\_Prevention\\_and\\_Control\\_Guidance\\_January\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/954690/Infection_Prevention_and_Control_Guidance_January_2021.pdf)
9. COVID-19 infection prevention and control guidance: aerosol generating procedures. Updated 15 April 2021, Accessed 17 May 2021  
<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-infection-prevention-and-control-guidance-aerosol-generating-procedures>
10. Rapid review of the literature: Assessing the infection prevention and control measures for the prevention and management of COVID-19 in health and care settings. V 14, 7 May 2021. Accessed 10 May 2021  
<https://www.hps.scot.nhs.uk/web-resources-container/rapid-review-of-the-literature-assessing-the->

[infection-prevention-and-control-measures-for-the-prevention-and-management-of-covid-19-in-healthcare-settings/](#)

11. World Health Organization (WHO). Standard precautions, Accessed 20 May 2020  
<https://www.who.int/docs/default-source/documents/health-topics/standard-precautions-in-health-care.pdf>
12. WHO. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. Interim guidance, 19 March 2020, Accessed 23 May 2020  
[www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](http://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)
13. WHO: Rational use of personal protective equipment for COVID-19 and considerations during severe shortages Interim guidance 23 December 2020  
[https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-\(covid-19\)-and-considerations-during-severe-shortages](https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-(covid-19)-and-considerations-during-severe-shortages)
14. WHO. Mask Use in the Context of COVID-19. Interim guidance 1 December 2020  
<https://apps.who.int/iris/handle/10665/337199>
15. WHO: COVID-19: Occupational health and safety for health workers Interim guidance 2 February 2021, Accessed April 2021  
[https://www.who.int/publications/i/item/WHO-2019-nCoV-HCW\\_advice-2021.1](https://www.who.int/publications/i/item/WHO-2019-nCoV-HCW_advice-2021.1)
16. WHO Technical specifications of personal protective equipment for COVID-19 World Guidance 13 November 2020  
<https://apps.who.int/iris/handle/10665/336622>

## Appendix 1. Transmission-based Precautions according to Alert level.

**NOTE: These IPC precautions should be followed regardless of the patients or the HCW vaccination status**

<b>Transmission-based Precautions to be followed per ALERT LEVEL</b>				
<b>Contact and Airborne Precautions PPE</b>				
P2/N95 particulate respirator*, eye protection, long sleeve fluid resistant gown and gloves				
*Staff who are required to wear a P2/N95 particulate respirator should have undertaken the requisite fit testing and be trained in fit checking				
<b>Contact and Droplet Precautions PPE</b>				
Medical masks (BS or EN Standard Type IIR, or ASTM Level 1, 2 or 3), eye protection, long sleeve fluid resistant gown, and gloves				
<b>Patient Risk Factors</b>	<b>Alert Level 1</b>	<b>Alert Level 2</b>	<b>Alert Level 3</b>	<b>Alert Level 4</b>
	Heightened risk of importing COVID-19. Sporadic imported cases. Isolated household transmission associated with imported cases	High risk of importing COVID-19 <b>or</b> uptick in imported cases <b>or</b> uptick in household transmission <b>or</b> single or isolated cluster outbreaks	Community transmission occurring <b>or</b> multiple cluster outbreaks	Sustained and intensive transmission. Widespread outbreaks
<b>Meets clinical <u>and</u> higher index of suspicion (HIS) criteria.</b>				
Providing clinical care	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions
Aerosol generating procedure (AGP)	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions
<b>Meets clinical criteria <u>only</u></b>				
Providing clinical care	Contact and Droplet Precautions	Contact and Droplet Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions
AGP	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions

<b>Meets HIS criteria <u>only</u></b>				
Providing clinical care	Droplet Precautions	Droplet Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions
AGP	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions
<b>Proven COVID-19 infection</b>				
Within 14-day infectious period	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions	Contact and Airborne Precautions

## Appendix 2 – Example of Daily screen for COVID-19 symptoms

Initial ward screen for COVID -19		
Date: _____		Screen completed by: _____
Daily Screen:-Do you have a new fever, fatigue, body aches, cough, sore throat, headache, shortness of breath, loss of smell or taste, runny nose, sneezing, blocked nose, nausea/vomiting/ diarrhoea?		
Daily Check Date		
1	No	Yes – Contact ID/ IPC team
2	No	Yes – Contact ID/ IPC team
3	No	Yes – Contact ID/ IPC team
4	No	Yes – Contact ID/ IPC team
5	No	Yes – Contact ID/ IPC team
6	No	Yes – Contact ID/ IPC team
7	No	Yes – Contact ID/ IPC team
8	No	Yes – Contact ID/ IPC team
9	No	Yes – Contact ID/ IPC team
10	No	Yes – Contact ID/ IPC team
11	No	Yes – Contact ID/ IPC team
12	No	Yes – Contact ID/ IPC team
13	No	Yes – Contact ID/ IPC team
14	No	Yes – Contact ID/ IPC team
15	No DX!	Yes – Contact ID/ IPC team