Queensland Health

# Acute Respiratory Infection – Infection Prevention and Control

Version 2.3 5 January 2024



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An electronic version of this document is available at <a href="https://www.health.qld.gov.au/">https://www.health.qld.gov.au/</a> data/assets/pdf file/0038/939656/qh-covid-19-Infection-control-guidelines.pdf

**Please note:** Updates after January 2024 are amended in the online version of this document – printed copies may not be current.

# **Contents**

1 Purpose		5
2 Scope		5
3 Key Principles		5
4 Mode of Transmission		5
5 Symptoms of acute respiratory infec	tion	6
	CIOII	
6 Hierarchy of controls		7
7 Infection Prevention and Control Me	asures	7
7.1 Standard precautions		8
7.2 Environmental cleaning		8
7.3 Transmission based precautions		8
7.4 PPE		10
7.5 Patient Risk Assessment, Placement		10
7.6 Standard + Contact + Droplet + Airbo	rne Precautions	10
7.6.1 Room Placement		10
7.7 Standard + Contact + Droplet Precaut	tions	11
7.7.1 Room Placement		11
7.9 Vantilation management		11
<ul><li>7.8 Ventilation management</li><li>7.9 Air-cleaning devices (air scrubbers, a</li></ul>	ir purifiers air filters)	12
<ul><li>7.9 Air-cleaning devices (air scrubbers, a</li><li>7.10 Facial hair</li></ul>	ii purillers, air fitters)	
7.10 Facial Hall		12
8 Patient management considerations		12
8.1 Patient movement		12
8.2 Outbreak management		13
8.3 Management of the deceased		13
9 Staff considerations		13
9.1 PPE fatigue		13
9.2 Testing		13
9.3 Healthcare workers exposed to or wi	th COVID-19 or another ARI	14
10 Resources		14
Appendix 1: Patient placement (cohorti	ng) advice	16
Suspected cases		16
Confirmed cases		16
Management of cohort areas		18
_		
Appendix 2: Factors increasing the risk	ot transmission of ARIs	20
Aerosol generating procedures		20
Aerosol generating behaviours		21
Environmental factors that may increase	21	

Appendix 3: Escalation of PPE usage in healthcare delivery, community health and care	22
services, in-home settings and for healthcare delivery in correctional health services	22
Decision for escalation or de-escalation of PPE	22
Continuous surgical mask use	22
Additional considerations for community health services and in-home care settings	22
Safe fitting and removal of PPE for home visiting services	23
Patient impacts of HCWs wearing masks	23
Patients wearing masks	24
Considerations for correctional health centres – primary protection measures	24
Appendix 4: Recommended approach to assessing close contact exposures to COVID-19 i	n
the hospital setting	26
Close contacts of COVID-19	26
Patient close contacts	26
Worker close contacts	27
References	29
Definition of terms	31

# 1 Purpose

This Guideline provides infection prevention and control (IPAC) guidance for managing patients with suspected or confirmed acute respiratory illnesses (ARIs) in healthcare settings. This Guideline provides a resource document that outlines IPAC principles for managing ARIs that can cause outbreaks in health facilities including, but not limited to, influenza, COVID-19 and RSV. While some other organisms may be transmitted by respiratory means they are not considered common causes of outbreaks within healthcare facilities (e.g. measles and varicella) and are not within the scope of this document.

# 2 Scope

This Manual provides information for all Queensland Health Hospital and Health Service (HHS) workers (permanent, temporary, and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants, students and volunteers). This includes acute care, aged care, offender health and disability services that are managed by Queensland Health. Queensland licensed private health facilities may choose to use this guideline.

# 3 Key Principles

- Acute respiratory illnesses are mainly spread between people when an infected person is in close contact with another person via droplets, aerosols or indirect contact.
- Implementing standard and transmission-based precautions is essential in preventing the transmission of ARIs in healthcare settings.
- The application of the <u>hierarchy of controls</u> will significantly reduce healthcare transmission of ARIs.
- Manage routine care of suspected or confirmed cases of ARI using personal protective
  equipment (PPE) as per the <u>Australian Guidelines for the Prevention and Control of
  Infection in Healthcare</u>, Australian Department of Health and Aged Care Infection Control
  Expert Group (ICEG) <u>Guidance on the use of personal protective equipment for health
  care workers in the context of COVID-19</u>, and the guidance in this Manual.

# **4 Mode of Transmission**

ARIs are most commonly spread from person-to-person by respiratory droplets produced during coughing, sneezing and speaking. This usually occurs when a susceptible person has direct contact with infectious respiratory secretions (such as inhalation), and indirectly through contaminated objects and surfaces (fomites) and secondary contact with the mucosa of the eyes, nose or mouth. Additional factors that increase the risk of transmission in healthcare include aerosol generating procedures (AGPs) and behaviours (AGBs).<sup>1,12</sup> Given

the potential for aerosol transmission in indoor environments and the variety of aerosol generating procedures (AGPs) and behaviours (AGBs) that occur in healthcare settings, a precautionary approach should be adopted to prevent healthcare transmission events.

Indirect transmission of ARIs may also occur, as the causative agent may remain viable on the hands for up to 5 minutes and may persist on the hands for 48 hours.<sup>20</sup>

# 5 Symptoms of acute respiratory infection

It is generally not possible to distinguish the causative organism of an acute respiratory infection based on clinical presentation alone.

Symptoms of ARI may include cough, breathing difficulty, sore throat and runny nose/nasal congestion, with or without other symptoms. Please see Table 1 for the period of communicability of common infective causes of ARI.

Other symptoms of an ARI may include:

- headache, myalgia, fatigue, diarrhoea, nausea/vomiting, loss of appetite, loss of smell or loss of taste, or increased work of breathing
- fever (≥37.5<sup>c</sup>) or history of fever (e.g. night sweats, chills)
- in the elderly consider new or increased confusion, change in baseline behaviour, falling, and exacerbation of underlying chronic illness.<sup>1</sup>

Clinical judgement should be applied where there are alternative clinical explanations for symptoms or non-specific symptoms are present.

Table 1 Information about common causes of ARI

Agent	Average incubation period (range)	Infectious period
Influenza (A and B)	2 days (1–4 days)	Up to 24 hours prior to onset of symptoms and up to 7 days after onset of symptoms. The amount of virus shed is highest during the first 2–5 days of symptoms. Children and people who are immunocompromised may shed the virus for longer. Those who are treated with oseltamivir shed the most virus in the first 3 days of illness.
SARS-CoV-2 (COVID-19)	The median incubation period of ancestral strains of SARS-CoV-2 is 5–6 days, with a range of 1–14 days.	Generally considered to be 48 hours prior to symptom onset (or positive test if asymptomatic). Infectious period varies based on individual factors and variant of concern. Individuals with severe illness or who are significantly immunocompromised may have prolonged infectious periods.

Agent	Average incubation period (range)	Infectious period	
Respiratory syncytial virus (RSV)	4–6 days (2–8 days)	3–8 days but can be 3–4 weeks in immunocompromised people.	
Parainfluenza virus	3–5 days (2–7 days)	Most contagious during the early stage of illness, but children with primary infection can shed the virus up to one week before onset and up to 1–3 weeks after symptoms have ended.	
Human metapneumovirus	3–5 days (up to 9 days)	1–2 weeks in healthy infants, can be weeks to months in immunocompromised people.	
Rhinovirus	2–3 days (up to 7 days)	Shedding is highest in the first 2–3 days of infection and usually stops by 7–10 days but can last up to 3 weeks.	
Pertussis	7–10 days (4–21 days)	From the onset of catarrhal symptoms. A person is most infectious in the early stages of their illness. Unless treated with appropriate antibiotics for at least 5 days, a person is regarded as infectious for 3 weeks after the first sign of any cough; or 14 days after the start of the bouts of coughing.	

Table 1 – adapted from <u>Guidelines for Prevention and Control of Upper and Lower Acute Respiratory Illnesses</u> (<u>including Influenza and Pneumonia</u>) in <u>Healthcare Settings</u> - Maryland Department of Health Infectious Disease Epidemiology and Outbreak Response Bureau, November 2020.

# 6 Hierarchy of controls

Guidance on consideration of the <u>hierarchy of controls in the context of minimising the risk of COVID-19 transmission</u> has been produced by ICEG. While it was developed for the management of COVID-19 risk, the principles of the guidance apply to all ARIs.

# 7 Infection Prevention and Control Measures

A risk assessment for transmission of ARIs should be undertaken. When the risk is unknown, not yet assessed, or unable to be assessed, a symptomatic patient should be managed with airborne and contact precautions (i.e., as a suspected COVID-19 case). Symptomatic persons tested for an ARI should remain isolated on airborne and contact precautions until the results of the test are known.

Precautions should be in place until the causative agent is known and the infectious period has passed (refer to Table 1) or at least 24 hours since the resolution of symptoms has passed (no fevers without antipyretics and no acute upper respiratory symptoms). Where there is doubt, please liaise with your local infection prevention and control team or infectious diseases specialist.

# 7.1 Standard precautions

Standard precautions should be used when providing care to all patients<sup>2</sup>, whether or not they are suspected of having an ARI. Standard precautions represent the minimum infection prevention measures that apply to all patient care.

For more information about the components of standard precautions, please see the <u>Australian Commission on Safety and Quality in Healthcare: Australian Guidelines for the Prevention and Control of Infection in Healthcare.</u>

# 7.2 Environmental cleaning

Environmental cleaning and disinfection should be undertaken using a 2-step clean and disinfection process or using a 2-in-1 product that has been entered into the Australian Register of Therapeutic Goods, with specific claims against viruses the person is suspected of being infected with. Please see the <a href="https://documents.org/">Therapeutic Goods Administration page</a> about disinfectant claims for more information.

The clean should be to the same standard as one performed after the discharge of a patient that is colonised with a multi-resistant organism.

Routine cleaning and discharge cleaning in the facility should be undertaken as per the <u>Strategic Operational Services Guideline</u>.

## 7.3 Transmission based precautions

Transmission-based precautions (TBP) are implemented in addition to Standard Precautions for patients suspected of, or confirmed with ARIs.

Section 6.3 of the <u>Australian Guidelines for the Prevention and Control of Infection in</u> <u>Healthcare (2019)</u> provides detailed explanations of routes of transmission and precautions to help prevent transmission via these routes.

#### **Table 2 Infection prevention precautions for ARIs**

Type of precautions	ARI	Patient placement	Gloves	Gowns/Aprons	Mask	Protective eyewear	Handling of shared equipment	Environmental cleaning	Visitors*
Droplet <sup>^</sup>	Influenza, pertussis#, human metapneumovirus, parainfluenza, RSV, rhinovirus	Single room with door closed, or cohort with same strain of infectious agent	As per	per As per	Use surgical mask	Single use, single Use patient use	Neutral detergent followed by disinfectant or 2	Restrict visitor numbers and use	
Airborne	COVID-19	Single room with door closed.  Use negative pressure room if available.	standard precautions	standard precautions	Use particulate respirator (P2 or N95 mask)	protective eyewear	or reprocess between patients	in 1 clean and disinfectant.	same precautions as staff

#### Notes:

**Standard precautions** should be used at all times when providing patient care.

**Patient placement**: Patient placement should be informed by a risk assessment and any competing needs. For further information refer to the <u>Patient placement guide</u> and local infection prevention and control service.

#### Personal protective equipment (PPE) use:

- When used as part of **standard precautions**, PPE protects against potential exposure to blood and body substances.
- When used as part of **transmission-based precautions**, PPE is used as a barrier against specific means of transmission of infectious agents.

# Only staff and visitors who have received a pertussis containing vaccine in the last 10 years should enter the room. See Section 4.2.1 of the <u>Australian Guidelines for the Prevention and Control of Infection in Healthcare</u> for further information.

**Table adapted from**: Section 6.3 Use of standard and transmission-based precautions **Table A2.4. Use of standard and transmission-based precautions**, <u>Australian Guidelines for the Prevention and Control of Infection in Healthcare</u>

<sup>^</sup> Droplets can contaminate horizontal surfaces close to the source patient, and the hands of healthcare workers can become contaminated through contact with those surfaces. Aerosol generating procedures increase risk therefore airborne precautions should be used.

<sup>\*</sup>Visitors should be given instruction about correct procedures when transmission-based precautions are applied and given appropriate resources to support them in meeting these requirements.

#### **7.4 PPE**

PPE for the management of patients with a confirmed or suspected ARI during periods of low risk of community transmission or in non-outbreak settings can be found in Table 2 above

Facilities should consider adopting advice for when there is an outbreak of an ARI or ARIs, either in patient or staff cohorts that may affect operations of the facility. Please refer to <a href="Appendix 3">Appendix 3</a> for advice for HHS or facilities to consider in the event of increased transmission of in an outbreak setting. Please note that in the event of an outbreak, the <a href="Health Facilities">Health Facilities</a> <a href="Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery">Response and Recovery</a> plan should be used in conjunction with any advice found in this guidance.

# 7.5 Patient Risk Assessment, Placement

All patients presenting to a hospital and health service should be assessed as per HHS protocol to determine if TBP are required.

Healthcare facilities offer varying types and quantities of patient accommodation. The risk assessment process should involve local infection prevention and control experts and consider infection prevention and control principles, including TBP and the hierarchy of controls. The use of negative pressure isolation rooms, single rooms and other accommodation types should be based on availability, other isolation requirements (e.g. patients with other airborne pathogens) and risk assessment.

Please refer to any specific paediatric requirements contained in the CHQ isolation table.

# 7.6 Standard + Contact + Droplet + Airborne Precautions

#### Patients who:

- are confirmed cases of COVID-19
- have symptoms of ARI that are yet to be diagnosed.

#### 7.6.1 Room Placement

Patients should be placed in a single Class N – Negative Pressure Respiratory Isolation room (Type 5) with dedicated ensuite and anteroom where available.<sup>2, 18</sup> Accommodation resources should be allocated in the following descending order thereafter:

- Single Class N Negative Pressure Respiratory Isolation room (Type 5) with dedicated ensuite without anteroom.<sup>18</sup>
- Single Class S Standard Isolation room (Type 4) with ensuite, door remains closed (negative airflow preferred), consider use of portable air filter.<sup>18</sup>
- Cohort room (for confirmed cases only), door closed, consider use of portable air filter, see <a href="Appendix1">Appendix 1</a>: Patient Placement (Cohorting) Advice.

For use of single rooms without anterooms and cohort rooms, an adjacent room or area for storage of and putting on clean PPE, and a separate area of adequate size for the safe removal of PPE and the disposal of clinical waste are required.

For further information on the principles for allocating Class N -Negative Pressure Respiratory Isolation rooms in the context of limited supply, see <u>Appendix 1</u>.

Do not use 'Class P' Positive Pressure Patient Protection rooms (Type 3) that are specifically designed for the management of profoundly immunocompromised patients.<sup>3,18</sup> Use of 'Class P' rooms may result in corridor spaces being inadvertently contaminated.

## 7.7 Standard + Contact + Droplet Precautions

#### Patients:

with symptoms of ARI.

#### **AND**

• who are confirmed to be COVID-19 **negative** and/or are positive for another ARI.

Follow local procedure for ARI patient placement or consult with local infectious diseases and/or infection prevention and control practitioners for patient management guidance where doubt exists.

#### 7.7.1 Room Placement

Patients being managed using standard, contact and droplet precautions should be placed in a Single Class S – Standard Isolation room (Type 4) with ensuite, and where the door remains closed (negative airflow preferred).<sup>2, 18</sup> Consider use of portable air filter.

For use of single rooms without anterooms, an adjacent room or area for storage of and putting on clean PPE, and a separate area of adequate size for the safe removal of PPE and the disposal of clinical waste are required.

Do not use 'Class P' positive pressure 'protective isolation' rooms that are specifically designed for the management of profoundly immunocompromised patients.<sup>3</sup>

• If cohorting is to be considered, a local, contemporaneous risk assessment is required. See <u>Appendix 1</u>: Patient Placement (Cohorting) Advice.

# 7.8 Ventilation management

Facilities should make use of local heating, ventilation, and air conditioning (HVAC) expertise to determine suitability of accommodation and minimum time required to enable a minimum of six air changes per hour for standard rooms (ACH).<sup>2,7,8,14</sup>

All facilities should review the Australian Commission on Safety and Quality in Healthcare's Optimising ventilation for infection prevention and control in healthcare settings when assessing existing ventilation systems to ensure these recommendations are considered.

# 7.9 Air-cleaning devices (air scrubbers, air purifiers, air filters)

Air-cleaning devices are currently utilised in many healthcare facilities and evidence suggests that these devices are easy to use and inexpensive to deploy and have the potential to reduce airborne SARS CoV-2 virus particles and augment existing HVACs.<sup>14, 15, 16, 17</sup> Consider the use of portable or built-in air-cleaning devices with high efficiency particulate air (HEPA) filtration in areas where existing HVAC systems are sub-optimal in providing fresh air and circulation, and where negative pressure facilities have been exhausted.

When selecting an appropriate air cleaner for a space:

- ensure the unit has a HEPA filter, which is managed in accordance with local protocols and manufacturer's advice
- ensure the unit is the appropriate size for the space
- develop local policies for the use, cleaning, disinfection and maintenance of devices.

Placement of portable air cleaners may include:

- close to the patient in single rooms without negative pressure air handling
- close to the patient in cohort rooms without negative pressure air handling
- in corridors of high-risk areas, such as COVID-19 wards without negative pressure rooms
- in procedure/treatment rooms following aerosol-generating procedures
- where there is an increased risk of transmission such as staff tea rooms, patient communal dining areas, reception areas and nurses' stations
- dead zones or areas where there are stagnant pockets or air that cannot be ventilated.

## 7.10 Facial hair

As per the Queensland Health's position statement on <u>Facial Hair and Ensuring the Adequate</u> <u>Performance of Respiratory Protective Equipment</u>, the fitting of all types of respiratory protective equipment must always be in accordance with the manufacturer's instructions.

Please discuss local issues regarding any staff that decline to remove their facial hair with your local Human Resources department.

# **8 Patient management considerations**

## 8.1 Patient movement

Movement of patients within a facility should be limited to essential purposes.

If a patient being managed under droplet or airborne precautions needs to be transferred to another department within the facility:

• the patient should wear a surgical mask wherever possible if tolerated

- the receiving department should be notified in advance
- HCWs transferring the patient should wear the appropriate PPE during transit
- see section 6.2 Environmental cleaning for more information about cleaning and disinfection
- do not place paper medical records on the patient's bed.

# 8.2 Outbreak management

Outbreaks of ARIs are more likely to occur in healthcare settings when the level of ARI community transmission is high. Outbreaks are managed at a facility level. Refer to the Health Facilities Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery guideline for advice around outbreak management, outbreak plans and outbreak control teams (OCT) and roles and responsibilities during an outbreak of ARI in a healthcare setting.

See Appendix 4 for close contact management of COVID-19 cases.

# 8.3 Management of the deceased

Staff caring for persons who are deceased are still required to wear PPE as for contact, droplet and airborne transmission-based precautions as required by the risk in accordance with usual processes for the care of the deceased. Please refer to <u>Coronavirus (COVID-19) – Advice for funeral directors</u> and <u>Guide for the funeral industry</u> for further advice.

# 9 Staff considerations

# 9.1 PPE fatigue

The combination of PPE required in the care of suspected or confirmed ARI cases can cause fatigue. The impact of PPE fatigue on staff comfort and potential PPE breaches should be monitored. Please see guidance from WorkSafe Queensland about <u>managing fatigue and PPE fatigue</u> at work.

# 9.2 Testing

All HCWs are to self-monitor for symptoms of ARI. If HCWs experience symptoms of ARI they should self-exclude from work until symptoms resolve and seek testing for ARIs, as advised by local HHS protocols.

# 9.3 Healthcare workers exposed to or with COVID-19 or another ARI

Staff who have symptoms of acute respiratory illness should not attend work.

Staff who have been exposed at work or at home to an COVID-19 can continue to work provided they meet the requirements outlined in <u>Appendix 4</u>. Staff who have been exposed at work or at home to another ARI can continue to work as long as they have no symptoms of the ARI. If they become symptomatic while at work, they should notify their manager and leave the workplace if it is safe to do so.

## 10 Resources

Other documents that may be of assistance in the management of ARI:

#### **PUBLIC HEALTH**

- Coronavirus (COVID-19) CDNA National Guidelines for Public Health Units
- Influenza infection (flu) CDNA National Guidelines for Public Health Units
- Pertussis (whooping cough) CDNA National Guidelines for Public Health Units
- National Guidelines for the Prevention, Control and Public Health Management of Outbreaks of Acute Respiratory Infection (including COVID-19 and Influenza) in Residential Care Facilities
- Managing individual employee COVID-19 related health risks
- Acute respiratory infection (potential or confirmed COVID-19 or Influenza) | Queensland Health

#### **INFECTION CONTROL**

- Australian Commission on Safety and Quality in Healthcare: Australian Guidelines for the Prevention and Control of Infection in Healthcare
- Infection Control Expert Group: Minimising the risk of infectious respiratory disease transmission in the context of COVID-19: the hierarchy of controls
- Coronavirus (COVID-19) Environmental cleaning and disinfection principles for health and residential care facilities
- Minimising the risk of COVID-19 transmission in the Emergency Department
- Optimising ventilation for infection prevention and control in healthcare settings

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Infection Control Expert Group (ICEG) Guidance on the use of personal protective equipment (PPE) for health care workers in the context of COVID-19
- The use of face masks and respirators in the context of COVID-19
- <u>Fit Testing of particulate filter respirators in respiratory protection programs</u>
  <u>Implementation guidance</u>

• QH Position Statement on Facial Hair and Ensuring the Adequate Performance of Respiratory Protective Equipment

#### **OUTBREAK MANAGEMENT**

• <u>Health Facilities Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery</u>

# Appendix 1: Patient placement (cohorting) advice

## Suspected cases

**Cohorting suspected cases of ARI is not recommended.** The decision to cohort suspected cases needs to be taken following consultation with local experts, such as infection control practitioners and infectious diseases physicians.

In the first instance, patients with suspected ARI are to be managed with airborne, droplet and contact precautions in a single room with an unshared ensuite until PCR results are known. In the event that no single rooms are available all administrative and engineering controls are to be investigated and the following conditions in the table below are to be met before symptomatic patients can be cohorted.

Suspected cases should not be cohorted with confirmed cases.

## Confirmed cases

Cohorting patients who are infected with ARI confines their care to one area and prevents contact with other patients.

If it can be avoided, patients who are positive on rapid antigen test only should not be placed in a cohort with PCR positive patients (please note that TGA approved rapid antigen testing is available for influenza A, influenza B, COVID-19 and RSV for the general public). It is advised, where able, to confirm the RAT result with a PCR.

There are a number of risk factors for transmission in hospital settings, including multiple patients with ARI within the same clinical space and older ventilation systems that are less effective at recirculating air. These should all be considered before cohorting confirmed cases.

Cohorting of confirmed cases of ARI in shared bed areas must only be undertaken following consultation with local experts and hospital executive after risk assessment of the environment and ventilation characteristics<sup>8</sup> in the intended area.

Patient flow and bed management should be considered when deciding to cohort patients. The management of outbreaks of other diseases or multi-resistant organisms should also be considered when making the decision to cohort ARI patients.

The below table considers the hierarchy of controls when deciding who is appropriate to place in the cohort environment.

#### Table 1 - Cohort decision making based on hierarchy of controls

#### 1. **DESIGNATED COVID WARDS**

#### **ELIMINATION**

Class N rooms – highest priority for severely immunocompromised close contact and COVID-19 positive patients. Patients with Pulmonary TB, measles, and chicken pox also require priority placement in negative pressure rooms. Prioritise influenza patients in single rooms over other nonairborne ARIs.

2. SINGLE ROOMS ANY WARD WITH DOOR CLOSED				
SUBSTITUTION				
1. Standard single room with an air purifier (air	scrubber) with an unshared ensuite			
2. Standard single room with an air purifier (air	scrubber) with a shared ensuite			
3. COHORT COVID POSITIVE PATIENTS IN 4-BED BA	AYS			
ENGINEERING CONTROLS				
☐ Air scrubber located at the head of the patient bed	☐ Transmission Based Precautions Signs			
☐ Close fire doors between wards ☐ Additional cleaning support				
☐ Entry point door signs – Staff and visitor alert				
ADMINISTRATIVE CONTROLS				
COHORT IN 4-BED BAYS				
DO NOT COHORT THE FOLLOWING PATIENTS				
☐ Recent chemotherapy	☐ Receiving potent immunosuppressive agents			
☐ Haemodialysis	☐ Incomplete COVID-19 vaccination.			
☐ Severe autoimmune condition ☐ ILI and a rash				
☐ Congenital or acquired immunodeficiency e.g. HIV ☐ BMT and solid organ transplants				
PPE - TRANSMISSION BASED PRECAUTIONS				
STAFF – to don P2/N95 respirator and eyewear for all COVID positive patients and where any				

**VISITORS** – As above. Risk of transmission must be explained to visitors.

**OTHER PATIENTS** - Where COVID positive patients are cohorted in open 4-bed bay, offer surgical masks to patients in other bays.

Adapted with thanks to the Royal Brisbane and Women's Hospital

When determining placement, the ability to isolate the ward air handling system from other areas of the hospital should be considered. The ventilation of the ward area used for cohorting is to be assessed by a qualified engineer.

- Early engagement with local engineering experts (BEMS) is advised. These local experts
  understand the design, operation and modifications of the air handling systems over
  time and can facilitate the appropriate movement of airflows and sharing of return air
  across the facility.
- In HVAC systems with modulating outside air systems, or where manual adjustment is possible, increasing outside air rates to provide increased dilution should be considered. It is recommended that ventilation or air conditioning systems that normally run with a recirculation mode should be set up to run on full outside air where this is possible. This will also require increasing the system's exhaust air rate and will help dilute any contaminants in the circulating air.
- It should be noted that increasing outside air rates and or ventilation rates will generally
  result in increased energy usage and in some circumstances may result in difficulties in
  the system maintaining the desired internal temperature and humidity conditions.

#### Other considerations:

- the use of signs identifying transmission-based precautions in place
- the ability to limit entry/access to the ward
- all necessary equipment is available
- patient populations in areas adjacent to the cohort ward should be separated from patients who are potentially at greater risk of complications from the ARI.

## Management of cohort areas

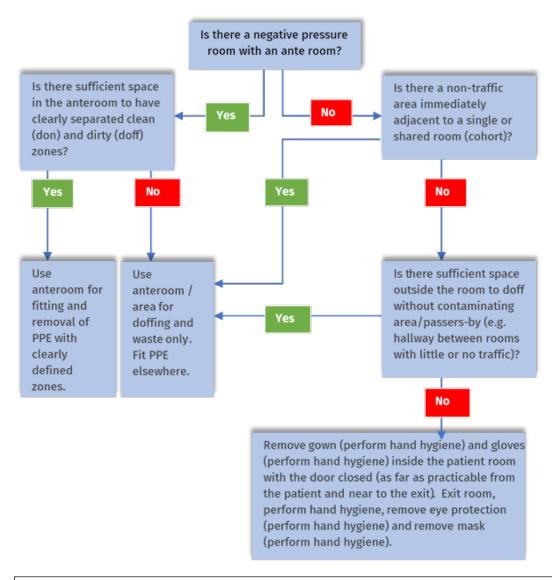
Standard and transmission-based precautions must continue to be maintained between patients. Further detail on PPE selection can be found in Table 1 of <u>Appendix 3</u>: Escalation of PPE usage in healthcare delivery, community health and care services, in-home settings and for healthcare delivery in correctional health services.

The following infection prevention and control principles should be considered:

- Plastic aprons may be used when providing care with minimal patient contact, e.g. delivering meals and taking observations. Plastic aprons and gloves, where worn, must be changed, and hand hygiene performed between contact with patients.
- PFR/surgical mask and eye protection can stay in place between patients. Dispose of PFRs or masks as soon as they are removed. Eye protection must be either discarded or cleaned and disinfected appropriately as soon as they are removed.
- Where there is extensive close patient contact, consider the use of a gown. The gown
  must be changed at the end of the procedure and hand hygiene performed. Examples of
  extensive close contact are providing care such as dressing large or complex wounds;
  hygiene cares for incontinent patients; hygiene cares or pressure area cares when a
  patient is fully dependent; urinary catheter cares.
- Limit persons entering the cohorted area to the minimum number necessary for patient care and support.

- Patient transport should be limited by having necessary equipment, e.g. portable X-ray, available in cohort areas.
- The frequency of routine environmental cleaning and disinfection should be increased in cohort areas in line with the facility's additional precautions policy.
- The need for frequent emptying of waste bins used for the disposal of PPE in clinical areas should be considered. Anecdotal evidence suggests that when such bins become full, HCWs may start to tamp down the waste when discarding used PPE, potentially leading to self-contamination.

The following flow chart can help assist identify where PPE fitting and removal should occur, both in a cohort setting or more generally.



#### Key principles for the flow chart:

- HCW should keep masks and protective eyewear on until they have exited the patient care area.
- Gowns and gloves should be removed in an area which reduces the risk of contaminating environment or persons passing by.
- Masks/PFR and protective eyewear may remain on in between care areas
- Hand hygiene must be performed after removing each item of PPE to reduce the risk of self-contamination.

# Appendix 2: Factors increasing the risk of transmission of ARIs

# Aerosol generating procedures

Some procedures may be more likely to generate higher concentrations of infectious respiratory aerosols. When performing an AGP consider additional measures for staff and other patients where appropriate.

Collection of deep nasal or oropharyngeal swabs **is not** considered an AGP.

Cardiopulmonary resuscitation (CPR):

- Chest compression and defibrillation during resuscitation is not considered an AGP.<sup>11</sup>
- Airway management in the context of CPR is considered an AGP.<sup>11</sup>

A combination of measures should be used to reduce exposures when performing AGPs on suspected or confirmed ARI patients:

- Only perform AGPs when medically necessary.
- Where possible, AGPs should be performed in a single room with negative pressure air handling. If no rooms with negative pressure air handling are available, the AGP should be performed in a single room with the door closed. Do not use 'Class P' positive pressure 'protective isolation' rooms that are specifically designed for the management of profoundly immunocompromised patients.<sup>3</sup>
- Use standard, contact, droplet and airborne precautions.
- Nebuliser use should be discouraged in open bays (i.e., when not in a single room) and alternative administration devices (e.g. spacers) should be used.<sup>11</sup>
- Limit the number of HCWs present during the procedure to those essential for patient care and support.
- The air changes per hour (ACH) of the room should be considered when determining the time required for a room to remain vacant (if required) following an AGP. Consult local infection prevention and control and HVAC facility experts for individual room capacities and clearly communicate local protocols to clinical and environmental services staff.
- Conduct environmental cleaning as per the <u>Strategic Operational Services Guideline</u> Environmental cleaning may be performed during air change time by staff in full PPE with door closed.

Other risk mitigation strategies may reduce 'fallow time", which include but are not limited to:

- for dental procedures:
  - high volume evacuation (dental assistant support)
  - use of dental dam
- where possible open windows and doors (to outdoors/external environment)
- exhaust fan to external
- use of portable air cleaning units
- consideration of contemporaneous ARI prevalence in local community, use of screening tool and RAT prior to procedure may allow relaxation of 'fallow time'
- PPE should be worn for cleaning as recommended for care of the patient. This should include an apron in addition to a long-sleeved preferably fluid-resistant gown if high volumes of fluid are expected
- visitors should not be present during an AGP.

# Aerosol generating behaviours

Behaviours that are more likely to generate higher concentrations of infectious respiratory aerosols include persistent or severe coughing, screaming, shouting, or heavy breathing and panting during active labour.

Patient factors that increase the risk of aerosols being created and therefore transmission include cognitive impairment/inability to cooperate, and inability to tolerate, or refusal of, a surgical mask.<sup>3</sup>

# Environmental factors that may increase the risk of transmission

Environmental factors that may increase the risk of transmission include:3

- low level of ventilation or unexpected air movements from a contaminated area
- care settings that are less controlled such as community-based or in-home care
- encounters with patients before their risk of an ARI is assessed, e.g. triage or initial assessment stage at fever/testing clinics
- the presence of multiple patients with an ARI in an enclosed space.

<sup>&</sup>quot;'fallow time' means leaving a room unoccupied with the door closed to allow respiratory particles to settle from the air onto surfaces. A period of at least 30 minutes is desirable if operationally possible.

# Appendix 3: Escalation of PPE usage in healthcare delivery, community health and care services, in-home settings and for healthcare delivery in correctional health services

## Decision for escalation or de-escalation of PPE

HHS, health services or health facilities decide what their level of response is based on local epidemiology and workforce management decisions. This guidance refers to two PPE escalation levels: **base** level and **enhanced** level. The PPE escalation table outlines the recommended PPE corresponding with the ARI community transmission level and probability of unrecognised infection in patients, visitors, or HCWs.

It is recommended that decisions are made locally in relation to escalation and de-escalation of facility or HHS-wide PPE in response to the level of community transmission and HHS level data. It is additionally recommended that a decision is determined by those responsible for clinical operations on the advice and guidance of the infection prevention and control and infectious diseases lead.

# Continuous surgical mask use

Continuous surgical mask use is recommended for HCWs during periods of enhanced level of PPE escalation, to reduce the risk of transmission of ARIs between HCWs and patients, and amongst HCWs (who may be asymptomatic but infectious, especially early in the course of illness). At these times, HCWs who directly work with patients and/or in common workspaces are recommended to continuously wear a surgical mask for their entire shift in patient care areas and common areas. HCWs who generally work alone in their own office are recommended to wear a mask when outside of their office.

Surgical masks are designed to be worn for extended periods of time. They are generally well tolerated on the face. A worker will need to perform hand hygiene and remove or change a mask for reasons such as visible soiling, eating or drinking, taking a toilet break, or leaving the patient care area before the integrity/effectiveness of the mask is compromised.

# Additional considerations for community health services and in-home care settings

Community health service: A facility-based service that delivers care but does not provide overnight support.

In-home care setting: Care that is delivered within a patient's permanent or temporary residence.

# Safe fitting and removal of PPE for home visiting services

Strict adherence to <u>safe fitting and removal of PPE</u> is crucial.

For home visiting services, fitting (donning) should occur prior to entry of the premises and removal (doffing) should occur immediately after leaving the premises/residence with all equipment placed in a sealed bag for transport and disposal.

Ensure that hand hygiene is performed before fitting PPE and upon removal of each item of PPE as per <u>safe fitting and removal of PPE</u>.

# Patient impacts of HCWs wearing masks

The use of surgical masks when providing care to people at increased risk of severe illness/adverse outcomes and those with disabilities can sometimes cause additional problems. If the patient gets or is likely to get distressed, alarmed or violent because the HCW is wearing a surgical mask or has communication difficulties such as reliance on lip reading, HCWs may need to consider alternative options after discussion with the patient and/or carer/appointed substitute decision-makers. A risk assessment must be conducted prior to considering/implementing alternative options (refer to risk assessment in the Infection Control Expert Group Guidance on the use of personal protective equipment for healthcare workers in the context of COVID-19). Alternative options may include, for example, discussing with the patient/resident first from a distance greater than 1.5 metres, or using social stories to explain and reassure them, prior to putting on the surgical mask to assist them. Employing strategies to socialise surgical mask use is essential so patients are familiar with them in the event of an outbreak where masks will be essential for the safety of both patients and HCWs.

For <u>very limited and rare circumstances</u> where essential care/support is required and communicating to the patient without a surgical mask from a distance of greater than 1.5 metres is not a viable alternative strategy, the option of a face shield instead of a surgical mask may be considered but only where:

- the patient has not tested ARI positive
- the patient displays no symptoms of ARI
- there is not a person in the home/care setting that is confirmed/probable or awaiting ARI/COVID-19 results
- the patient is not identified as a close contact of a case of COVID-19 or another ARI.

In addition, HCWs should be aware of the lack of data showing that face shields alone prevent transmission of ARIs, and they may not offer the same level of protection as a surgical mask.

A person's use of PPE should not create any serious risk to that person's life or health and safety, including if determined through work health and safety guidelines.

## Patients wearing masks

Patients at increased risk of severe illness and adverse outcomes should not be required to wear a mask if:

- they are affected by a medical condition, mental health condition or disability that may be exacerbated or made worse in any way by wearing a mask, and/or
- it is important to be able to see their mouth for communication.

Where this is applicable, PPE should be worn by the healthcare/support worker and by other people in the vicinity of the person at increased risk of severe illness and adverse outcomes. Hand hygiene and environmental cleaning should also be conducted to reduce the transmission risk for the person unable to wear a mask.

# Considerations for correctional health centres – primary protection measures

In response to the COVID-19 pandemic, several protection measures have been put in place in correctional health centres to reduce the risk of ARI being present in a correctional health centre. These measures may include:

- screening of all visitors and staff each time they enter a correctional health facility (staff
  or visitors are refused entry if it is not safe for them to enter)
- screening of all prisoners on reception to a correctional health centre
- PCR or RAT testing and isolating of prisoners in a correctional health centre
- temporary restriction or suspension of personal visits in correctional health centres in response to community and/or centre-based transmission.

Table 1. Hospital and other healthcare services, Community health services, in-home care settings and correctional health services. Recommended PPE escalation according to facility or HHS recommendations

	PPE escalation level→	Base	Enhanced
PPE for HCWs caring for residents/patients in these categories	Patient category↓	Standard and Transmission-Based Precautions	Standard and Transmission-Based Precautions, plus measures to counter moderate risk of unexpected COVID-19 infection
	NO symptoms of acute respiratory infection (ARI) and NOT a close contact <sup>®</sup>	Standard precautions	Surgical mask <sup>\$,^</sup> or PFR* in high-risk clinical area <sup>&amp;</sup> Protective eyewear# (within 1.5m)
	ARI symptoms and NOT a COVID-19 close contact <sup>®</sup>	Surgical mask <sup>\$,^</sup> Protective eyewear <sup>#</sup> Gown or apron as per standard precautions <sup>%</sup> Gloves as per standard precautions	PFR9 Protective eyewear <sup>®</sup> Gown or apron as per standard precautions <sup>\$</sup> Gloves as per standard precautions
	Confirmed / Probable COVID-19  OR  Suspected COVID-19 (ARI symptoms and awaiting test results)  OR  COVID-19 Close contact®	PFR <sup>®</sup> Protective eyewear <sup>#</sup> Gown or apron as per standard precautions <sup>®</sup> Gloves as per standard precautions	PFR <sup>®</sup> Protective eyewear <sup>#</sup> Gown or apron as per standard precautions <sup>®</sup> Gloves as per standard precautions
PPE for HCWs doing activities other than direct patient care		Standard precautions	Surgical mask when unable to physically distance (1.5m)
PPE for patients - ARI symptoms OR COVID-19 close contact³ (excluding children under 12)		Patients to wear surgical masks where tolerated outside of room (excluding children under 12)	Patients to wear surgical masks where tolerated outside of room (excluding children under 12)
PPE for Support persons or other household members during healt	hcare interaction for <u>non-COVID-19</u> patients	Nil additional	Surgical mask

#### Table 1 footnotes

Includes all non-hospital paediatric health services (incl. multiple home visits, RACF and facilities). Further guidance regarding paediatric health service PPE requirements Further information for RACF services Disability Supplement to the CDNA National Guidelines for the Prevention, Control and Public Health Management of COVID-19 Outbreaks in Residential Care Facilities in Australia

Please refer to the applicable Determination by the Commissioner of Queensland Corrective Services.

<sup>®</sup>Close contact: a patient who has been identified as a close contact of a case of COVID-19 in the last 5 days, according to the Coronavirus (COVID-19) - CDNA National Guidelines for Public Health Units

<sup>\*</sup>Protective eyewear is defined as a face shield, goggles, or dedicated safety glasses – note that prescription glasses alone are not considered adequate eye protection.

<sup>§</sup> A particulate filter respirator (PFR) should be worn for AGPs (AGP), aerosol-generating behaviours (AGB), and upon entering a room within 30 min of an AGP where there have been no other risk mitigating strategies to reduce that time. AGP, AGB and other factors increasing the risk of transmission.

<sup>\*</sup>A long-sleeved, preferably fluid-resistant gown. An apron or a non-fluid-resistant gown may be used in situations where physical contact is minimal and there is little chance of body fluid splash.

<sup>^</sup> Mask selection surgical or PFR may be chosen by staff according to an individual risk assessment

<sup>&</sup>amp; High-risk clinical areas are based on a local risk assessment, e.g. general practice may follow the recommendations for EDs if treating clients with undifferentiated illness.

<sup>\*</sup>PFR requires fit checking and fit testing

# Appendix 4: Recommended approach to assessing close contact exposures to COVID-19 in the hospital setting

Do not attend work if you are unwell with symptoms of acute respiratory illness.

### Close contacts of COVID-19

A close contact of COVID-19 is a person having had contact with a COVID-19 case in a "household or household like" setting. This definition can be applied in facilities to patients who are inadvertently sharing accommodation with a confirmed case of COVID-19. The concept of close prolonged exposure can also apply to health workers.

Given cases are generally considered infectious prior to onset of their symptoms, contact may have occurred in the 48 hours before onset of symptoms of the case.

For clarity, a person is a close contact if:

- they have had household like contact with a case of COVID-19
- this contact has occurred with a symptomatic case or in the 48 hours preceding symptom onset of the case
- this contact has occurred in the last 5 days, and
- 5 days has not elapsed since last contact with the case.

## Patient close contacts

To assist identifying patients who may present an infection risk to others in the healthcare setting, the definition of a "Close Contact of COVID-19" is a person who has had "household" and/or "household like" contact – usually described as prolonged (>4 hours) contact within 1.5 m or in an enclosed space (such as a shared room) – with a confirmed case of COVID-19. See Table 1 for the recommended management of patients who are considered close contacts of COVID-19.

Table 1. Management of patient contacts following COVID-19 exposure in hospital

Patient Cohort	Recommended management
All patients	Be alert to mild symptoms and test if symptomatic
Exposure to COVID- 19 without ALL mitigation strategies (see	COVID-19 test when contact identified     COVID-19 test day 2 post exposure (if indicated) and again if becomes symptomatic
Infection prevention and	<ul> <li>Additional measures apply for 5 days after the last exposure:</li> <li>Refer to PPE in Part 7 of the ARI Guideline</li> </ul>

control measures in the guideline)	0	Accommodation requirements for close contacts are as per suspected cases and are in <a href="Appendix 1">Appendix 1</a> and Table 2 in the ARI guideline. Where close contacts require cohorting, they should not be cohorted with confirmed, suspected or other patients who are not close contacts.
	0	+/- any other mitigation strategies as advised by infection control team

## Worker close contacts

A close contact in a work setting is defined as close contact (<1.5 m) prolonged contact (>4 hours cumulative) without the appropriate PPE. A risk assessment on the exposure may determine a shorter time period is used. For example, if an AGP is performed without P2 or N95 respirators being used or if there is close contact with a patient who is heavily symptomatic (<1.5 m) without appropriate PPE, it may be decided by the assessor that being a close contact is warranted before 4 hours of contact.

Health workers remain at risk of exposure to COVID-19 through their work, despite mitigations such as vaccination, environmental controls, PPE, and early identification of appropriate transmission-based precautions for patients with suspected and confirmed COVID-19 infection. HCWs are very likely to encounter COVID-19 outside of their work setting as well as when they are at work.

Management of workers who are close contacts should be based on symptom management. Close contacts may attend work but should refer to the measures in Table 2 and leave work immediately if they become unwell. A worker who is confirmed to have COVID-19 should not attend work while still acutely unwell. This period varies from person to person but is usually 5 to 7 days until acute symptoms have resolved.

HCWs who are infected with COVID-19 or determined to be a close contact should follow the advice provided at Table 2. Advice for staff exposed to or with COVID-19.

Table 2. Advice for staff exposed to or with COVID-19

	Conditions of attendance at work	
	No symptoms – monitor for onset of symptoms	
Close contact	Follow additional measures for 5 days. Wear a surgical mask. Reduce circumstances where masks are removed and maintain at least 1.5 m separation while mask is off. Consider breaks outdoors.	
	At least 5 days since either the onset of symptoms or a positive COVID-19 test (whichever was first)	
	AND	
Diagnosed Case (return to workplace)	acute respiratory symptoms and fever have resolved	
	AND	
	able to comply with any additional infection control measures required	

	Conditions of attendance at work
Diagnosed case (work from home)	Work from home if well enough to work
Return of a diagnosed case to workplace within 5 days	Exceptional circumstances, following local risk assessment

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# **Definition of terms**

Term	Definition/Explanation/Details	Source
Acute Respiratory Infection (ARI)	An acute respiratory infection (ARI) is defined as a recent onset of new or worsening acute respiratory symptoms: cough, breathing difficulty, sore throat, or runny nose/nasal congestion with or without other symptoms. This can be caused by a variety of pathogens, usually viral, including but not limited to Influenza, COVID-19 and RSV.	Communicable Diseases Network of Australia (CDNA)
Aerosol-generating procedures (AGPs)	Any medical procedure that can induce the production of aerosols of various sizes, including small (<5 µm) particles.  See section on aerosol-generating procedures page 20 in this document	World Health Organization (WHO)
Aerosol-generating behaviours (AGBs)	Behaviours that are more likely to generate higher concentrations of infectious respiratory aerosols such as persistent or severe coughing, screaming, shouting, or heavy breathing and panting during active labour.	Victorian Department of Health
Close Contact of COVID-19	For the purposes of identifying patients who may present an infection risk to others in the healthcare setting, the definition of a "Close Contact of COVID-19" is a person who lives with a person that has COVID-19 or has been with a person that has COVID-19 in a household like setting.  HCWs are very likely to encounter COVID-19	Queensland Health
	outside of their work setting as well as when they are at work. A close contact in a work setting is defined as close contact (<1.5 m) for prolonged contact (>4 hours cumulative) without the appropriate personal protective equipment (PPE).	
Cohorting	The practice of grouping patients infected or colonised with the same infectious agent together to confine their care to one area and prevent contact with susceptible patients.	World Health Organization

Term	Definition/Explanation/Details	Source
Contact tracing	Contact tracing is the process of identifying relevant contacts of a person (the case) with a notifiable condition and ensuring that they are aware of their exposure; the risk of acquiring the infection; and any public health actions that are recommended or required under public health legislation, which may include quarantine.	Queensland Health
Healthcare worker (HCW)	For the purpose of this Manual, a healthcare worker (HCW) is a worker* who has direct or indirect contact with patients or infectious materials or works on a healthcare campus, including but not restricted to doctor, nurse, patient support officer, paramedic, laboratory technician, pharmacist, administrative staff, housekeeping, tradespersons.  Staff/employees will be referred to as "HCWs", unless the section directly refers to their employment, e.g. rostering.  The definition of worker* is as per the Work Health and Safety Act 2011 (QLD) Section 7.	Queensland Health
Negative pressure room	Class N – Negative Pressure Isolation Room (Australian Standard: AS 1668.2): single-occupancy patient care room used to isolate persons with a suspected or confirmed airborne infectious disease. Must contain Type B hand basin within the room and a self-closing door, with sufficient and appropriate storage for clinical waste <sup>18</sup> . Environmental factors are controlled in negative pressure rooms to minimise the transmission of infectious agents that are usually transmitted from person to person by droplet nuclei associated with coughing or aerosolisation of contaminated fluids.	NHMRC Australasian Health Infrastructure Alliance
Particulate filter respirator (PFR)	Particulate filter respirators (PFR) are designed to reduce the wearer's respiratory exposure to airborne contaminants such as particles, gases or vapours. P2/N95 respirators are types of PFR.  PFRs are appropriate for use for respiratory protection as part of the personal protective equipment (PPE) required for airborne precautions applied in healthcare facilities (for both clinical and non-clinical HCWs).  PFRs are also appropriate as part of the PPE required for all healthcare workers involved in aerosol-generating procedures when a patient is confirmed or suspected of having a disease that may be transmitted via the droplet or airborne route (including COVID-19).	Queensland Health

Term	Definition/Explanation/Details	Source
Patient	For consistency, a "patient" is anyone who receives care or support in a healthcare facility or from a HCW in another setting, including patients, clients, consumers, residents, or inmates of correctional health centres.	Queensland Health
Personal protective equipment (PPE)	A variety of barriers used alone or in combination to protect mucous membranes, skin and clothing from contact with infectious agents. PPE used in healthcare includes gloves, masks, PFR, protective eyewear, face shields, gowns and aprons.	NHMRC
Transmission-based precautions	Extra work practices in situations where standard precautions alone may be insufficient to prevent infection (e.g. for patients known or suspected to be infected or colonised with infectious agents that may not be contained with standard precautions alone).	NHMRC

# **Approval and implementation**

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Approval Date	1 September 2023	

# Version control

Version	Date	Prepared by	Comments
2.3	5 January 2024	Communicable Diseases Branch	Minor addition to improve clarify in Appendix 4.
2.2	9 November 2023	Communicable Diseases Branch	Update to improve clarity in Appendix 4.
2.1	14 September 2023	Communicable Diseases Branch	Update for clarity of PPE requirements and close contact cohorting.
2.0	1 September 2023	Communicable Diseases Branch	Update to diagnosed HCW case return to workplace recommendations.  Update to close contact information.
1.0	30 June 2023	Developed by the Communicable Diseases Branch	New guideline