

Coronavirus Disease 2019 (COVID-19) CDNA National Guidelines for Public Health Units

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4.1	12 January 2020	Communicable Diseases Network Australia	Inclusion of new subsection: Prioritisation of whole genome sequencing for all cases Revised: Case management with inclusion of subsection detailing management of cases infected with a SARS-CoV-2 variants of concern.
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This document summarises recommendations for surveillance, infection control, laboratory testing and contact management for coronavirus disease 2019 (COVID-19). CDNA will review and update these recommendations as required as new information becomes available on COVID-19 and the situation in Australia. These Guidelines will be updated regularly.

Readers should not rely solely on the information contained within these Guidelines. Guideline information is not intended to be a substitute for advice from other relevant sources including, but not limited to, the advice from a public health specialist or other health professional. Clinical judgement and discretion may be required in the interpretation and application of these guidelines.

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Abbreviations and definitions

- COVID-19: Coronavirus disease 2019. The name of the disease caused by the virus SARS-CoV-2, as agreed by the World Health Organization, the World Organisation for Animal Health and the Food and Agriculture Organization of the United Nations. For more information, refer to the [World Health Organization Director-General's remarks](https://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020): (https://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020)
- SARS-CoV-2: Severe acute respiratory syndrome coronavirus 2. The formal name of the coronavirus that causes COVID-19, as determined by the International Committee on Taxonomy of Viruses. Previously, this coronavirus was commonly known as 'novel coronavirus 2019 (2019-nCoV)'. For more information, refer to the [Consensus Statement of the Coronaviridae Study Group of the International Committee on Taxonomy of Viruses](#).

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1. Summary

Public health priority

Urgent – public health responses should be initiated as soon as possible.

Case management

All confirmed cases must be isolated until they meet the appropriate [release from isolation criteria](#). Cases should only be managed at home or in other community settings if the home environment permits separation of the case from other household members and following implementation of appropriate infection control measures and risk mitigation counselling. Where cases are managed at home, consideration should be given to public health mitigation strategies in the event household contacts are exposed (see [Management of contacts](#))

Hospitalised patients should be isolated in a single room, a designated COVID-19 ward or, if symptoms are severe and, where available, in a negative pressure room. Clinical staff should use contact and droplet precautions for routine care of patients with confirmed or suspected COVID-19. Where staff are performing [aerosol-generating procedures](#), they should use contact and airborne precautions. Particulate filter respirators should also be considered in preference to a surgical mask in certain specified clinical settings (refer to [Aerosol-generating procedures](#)).

Contact management

Close contacts of confirmed cases must quarantine for 14 days following the last close contact with the case during the case's infectious period. Close contacts should be actively monitored for development of fever or respiratory symptoms during this period, where feasible and should be tested if symptoms develop. Close contacts should also be tested on entry to and (where appropriate) exit from quarantine, even if asymptomatic.

2. The disease

Infectious agent

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the infective agent that causes coronavirus disease 2019 (COVID-19). SARS-CoV-2 is a novel coronavirus that was first identified in humans in Wuhan, China, in December 2019. SARS-CoV-2 shares 79.6% sequence identity to SARS-CoV-1 (1).

Coronaviruses are a large family of viruses, some causing illness in people and others that circulate among animals, including camels, cats and bats. Rarely, animal coronaviruses can evolve and infect people and then spread between people. Adaption has led to outbreaks of severe acute respiratory disease due to MERS-CoV and SARS-CoV, but there are also human coronaviruses that cause more mild illness in humans, such as the coronaviruses that cause the common cold.

Reservoir

It is highly likely that the virus has come from an animal source. Genomic analysis suggests that bats appear to be the reservoir of SARS-CoV-2 virus (2), but the intermediate host has not yet been identified (3).

Mode of transmission

The predominant mode of human-to-human transmission of SARS-CoV-2 is through droplets via direct and close contact with an infected person (3). Fomite transmission is also possible, as viable virus has been detected on inanimate surfaces for up to 72 hours (4).

There is a gradient from large droplets to very small particles (aerosols), which may contribute to transmission of SARS-CoV-2 in certain situations. These include during aerosol generating procedures in clinical settings (refer to [Aerosol-generating procedures](#)). Certain behaviours, such as singing and shouting, could also increase the force and range of spread of both large and small particles. In indoor environments with a low air exchange rate (i.e. less movement of outside air replacing the air indoors), small particles that are normally rapidly dispersed may remain suspended or be recirculated for longer periods. The particles may be moved around by fans or air conditioners. In these situations, airflow may play a role in transmission.

There is some evidence that COVID-19 infection may lead to intestinal infection and SARS-CoV-2 can be present in the faeces of infected persons (5). However, to date, there is no evidence of faecal-oral transmission.

Estimates for the basic reproductive number (R_0) of SARS-CoV-2 range from 2–4, with R_0 for confined settings, e.g. cruise ships, at the higher end of this range. Estimates of the effective reproductive number (R_{eff}) vary between settings and at different time points are dependent on a range of factors, including public health interventions such as isolation, quarantine, physical distancing, and mask wearing to limit exposure between people (6, 7)

Aerosol-generating procedures

Appropriate care should be taken during aerosol-generating procedures. Listed examples of aerosol-generating procedures are available in [Guidance on the minimum recommendations for the use of PPE in hospitals during the COVID-19 outbreak](#).

Airborne precautions should be used routinely when performing aerosol-generating procedures on confirmed or suspected COVID-19 patients. Examples of AGPs include bronchoscopy, intubation, suctioning etc. in hospital settings. Nebuliser use should be discouraged and alternative administration devices (e.g. spacers) should be used.

Particulate filter respirators, such as P2 or N95 respirators, should be used only when required. Unless used correctly, i.e. with fit-checking, protection against airborne pathogen transmission will be compromised.

Note: For aerosol-generating procedures performed in areas with low or no community transmission, on patients who are NOT suspected or confirmed cases of COVID-19, particulate filter respirators are not required, i.e. a surgical mask is appropriate.

Particulate filter respirators should also be considered in preference to a surgical mask in certain specified clinical settings. For further information, see the Infection Control Expert Group [guidance on the use of personal protective equipment in hospitals during the COVID-19 outbreak](#).

The [Testing section](#) provides detailed information on sample collection for SARS-CoV-2.

Environmental evaluation

Where local transmission of COVID-19 is thought possible, a thorough review of contributing environmental factors should be done. This should include a review of infection control procedures, and opportunities for exposure to respiratory or faecal contamination.

If a case has had occupational exposure to animals, it may be appropriate to consult with animal health authorities.

Incubation period

Current estimates of the incubation period indicate that the majority of people become infected 5 to 6 days after coming into contact with another infected person, with a range of 1 to 14 days (8). The advice in this guideline uses an upper range of 14 days to guide many public health measures, such as quarantine and isolation (9-11).

Infectious period

Several studies have shown that pre-symptomatic, and asymptomatic, transmission occurs (12, 13). Pre-symptomatic transmission can occur 1-3 days before symptom onset and viral load of throat swabs is highest at symptom onset and decreases within 7 days (14, 15). Viral load in asymptomatic patients has been found to be similar to that of symptomatic patients, suggesting transmission potential of asymptomatic, or minimally symptomatic patients (16). The risk of transmission from symptomatic or pre-symptomatic cases is considered to be higher than from asymptomatic cases (17), as viral RNA shedding is higher at symptom onset (18).

For the purposes of routine contact tracing, cases are considered to be infectious from 48 hours prior to onset of symptoms. At the discretion of the Public Health Unit (PHU), more conservative periods (e.g. 72 hours prior to illness onset) may be considered in high risk settings. Confirmed cases pose a risk of onward transmission and require isolation until criteria listed in the [Release from isolation section](#) have been met.

Clinical presentation and outcome

COVID-19 presents as a mild illness for approximately 80% of cases, with fever and cough being the most commonly reported symptoms. Other symptoms include headache, sore throat, fatigue, shortness of breath, myalgia, anosmia, dysgeusia, rhinorrhoea, chills and vomiting. Atypical symptoms of COVID-19 may also occur including chest pain, diarrhoea and conjunctivitis (19-22). Preliminary evidence suggests that children experience milder clinical symptoms and potentially fewer infections than adults (similar to SARS-CoV and MERS-CoV infections) (23-26). Severe or fatal outcomes occur more frequently in the elderly and those with comorbid conditions (3).

Some individuals remain asymptomatic (25, 27). Studies estimate that the asymptomatic proportion of cases ranges from 18% to 42% (28-30).

For confirmed cases reported globally, the crude case fatality rate (CFR) is approximately 2.3% (31). The true case fatality rate for COVID-19 is difficult to estimate due to variable case ascertainment, especially in regard to mild cases, and the impact of health systems on patient outcomes. Mortality of cases is, to a significant extent, determined by individual risk factors and healthcare quality and access. Based on surveillance data notified in Australia as of 16 December 2020, the crude national CFR was 3.2%. The crude CFR is a point in time measurement, and the clinical resolution or death of current cases may alter the CFR.

Immune response

The immune response, including duration of immunity and duration of antibody response to SARS-CoV-2 infection is still being understood (32). Preliminary evidence suggests IgM and IgG antibody levels to SARS-CoV-2 may wane overtime, however more studies are required to accurately determine the duration of immunity, role of B and T memory cells and correlates of protection for COVID-19 (33-35).

Persons at increased risk of exposure

People who have frequent, close, or extended contact with others have the potential for greater exposure to SARS-CoV-2.

People at increased risk of exposure might include those who have:

- travelled to areas with higher prevalence of COVID-19 through international or domestic travel;
- care for COVID-19 cases; or
- come in contact with people with a higher likelihood of having active infection.

These groups of people are often certain occupational groups and may include, but are not limited to:

- international border staff
- workers supporting quarantine and isolation services
- air and maritime crew
- health care and aged care workers with direct patient contact

Depending on the epidemiological context, there are other groups of workers at higher risk of infection, such as casual and mobile employees working across multiple settings. Some of these workers include cleaners, rideshare service and taxi drivers, and security personnel. There are several factors that may put them at higher risk, including multiple exposure points, staff who may have a perceived need to continue work despite being unwell, and language barriers for people from culturally and linguistically diverse backgrounds. Other people at increased risk of exposure might include those in public facing occupations or crowded settings (e.g. hospitality, public transport, retail).

Persons who live or work in a [high-risk setting](#), where there is evidence of a risk for rapid spread and ongoing chains of transmission, may also be at increased risk of exposure if an infectious case is introduced. Settings where disease is likely to readily transmit and be amplified are those with a high population density, settings where people are living or working in close proximity to others, or specific environmental conditions. These settings may include, but are not limited to:

- health care facilities
- residential aged care facilities
- residential care facilities
- crowded or high-density housing
- Aboriginal and Torres Strait Islander communities (particularly in rural and remote areas)
- correctional and detention facilities
- homeless shelters and residential/crisis hostels
- mining sites, and
- food processing, distribution and cold storage facilities, including abattoirs.

People at increased risk of severe disease

Older individuals are at the highest risk of severe COVID-19. Others with certain comorbidities are also at increased risk of severe COVID-19. Information on those at high and moderate risk of severe illness, and other factors that might increase the risk of severe disease, is available on the [Department of Health Website](https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/advice-for-people-at-risk-of-coronavirus-covid-19) (<https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/advice-for-people-at-risk-of-coronavirus-covid-19>).

Disease occurrence and public health significance

Cases of COVID-19 were initially associated with attendance at an animal wet market—located in Wuhan, Hubei Province, China—indicating a probable zoonotic source. Human-to-human transmission of SARS-CoV-2 is well established. As of 16 December 2020, numerous countries and all regions across the globe have reported broader community transmission, and globally there have been over 72,196,732 confirmed cases and 1,630,521 deaths (31).

The World Health Organization (WHO) declared the outbreak of COVID-19 a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 (36), and declared a pandemic on 12 March 2020 (37).

Australia implemented measures aimed at slowing the spread of COVID-19 into and within the country, and prepared healthcare services and laboratories for a targeted response. The [Australian Health Sector Emergency Response Plan for Novel Coronavirus \(COVID-19\)](#) details the national approach, the operational plan and guidance for the health sector response.

'Human coronavirus with pandemic potential' was added to the [Biosecurity \(Listed Human Diseases\) Determination 2016](#) as a listed human disease on 21 January 2020, and has been listed temporarily on the National Notifiable Diseases List (NNDL) since 10 February 2020.

On 18 March 2020, the Governor-General declared a “human biosecurity emergency” under the *Biosecurity Act 2015*, given the threat COVID-19 poses to human health on a nationally significant scale and the need to control its entry, emergence, establishment and spread in Australia. The declaration was recommended by the Minister for Health and informed by specialist medical and epidemiological advice provided by the Chief Medical Officer (in his capacity as the Director of Human Biosecurity) and the Australian Health Protection Principal Committee. The human biosecurity emergency declaration gives the Minister for Health powers under the Act to determine emergency requirements or issue directions to respond to COVID-19, such as restrictions on cruise ships and overseas travel. The emergency period is regularly reviewed to ensure it remains necessary and proportionate.

States and Territories have also exercised emergency powers under jurisdictional legislation as required throughout the pandemic to manage the spread of COVID-19 as quickly and flexibly as possible.

Routine prevention activities

Travel

The Australian government has implemented travel restrictions and quarantine requirements to reduce transmission between countries.

At present, overseas travel from Australia is restricted, with few exceptions. Travellers to other countries should comply with local requirements regarding quarantine, physical distancing and the use of PPE. They should also avoid contact with sick people and maintain good personal hygiene.

Some Australian jurisdictions may implement border closures and localised movement restrictions based on changes in local epidemiology of COVID-19.

Personal hygiene

Individuals should establish and maintain good hygiene practices to prevent infection from SARS-CoV-2, which includes:

- Practicing good hand hygiene and respiratory hygiene
- Cleaning frequently touched surfaces regularly with appropriate detergents and disinfectants
- Staying home and not attending public places including work or school if unwell
- Maintaining a distance of 1.5 m from people when in public

Public communications should encourage this behaviour. Individuals who develop symptoms of COVID-19 should self-isolate and seek medical assessment.

Some jurisdictions may recommend people to consider wearing masks where it is not possible to maintain a distance of 1.5m.

Physical distancing and gatherings

Physical distancing requirements may be enforced, and restrictions have been implemented, on private and public gatherings by state/territory governments. These restrictions have varied over time.

Physical distancing is an effective measure, but it is recognised that it cannot be practised in all situations. The aim is to reduce the potential for transmission. Whilst practising physical distancing, people can travel to work (including by public transport) and carry out normal duties. Physical distancing outside the workplace aims to reduce nonessential activities and includes:

- Avoiding physically greeting other people.
- Avoiding crowds and mass gatherings.
- Avoiding small gatherings in enclosed spaces, for example family celebrations.
- Attempting to keep a distance of 1.5 metres between themselves and other people where possible, for example when in public spaces.

Jurisdictions may have public health directions in place to ensure physical distancing is occurring to further support prevention of transmission, depending on the nature of the outbreak at a point in time. These physical distancing actions may range from reducing social interactions to 'stay at home' requirements for all except essential workers (commonly called shutdown or lockdown). Physical distancing can be enabled through density limitations of number of people allowed in a square metre. Other examples include: capped restrictions to the number of visitors allowed at a residence or outdoor gatherings; the number of people who can attend weddings, funerals or religious services; the number of people who can participate in sport and recreational activities; and number and spacing of patrons allowed at hospitality venues, events and musical activities.

If individuals are attending public gatherings or venues, they should comply with jurisdictional directions including limitations on the number of attendees. Some jurisdictions will also require venues, businesses and organisations to keep a record with contact details of all staff, patrons and contractors visiting their premises.

3. Surveillance

There are four main objectives of surveillance for COVID-19, which are to rapidly:

1. identify, isolate and manage cases.
2. identify, quarantine and provide relevant information to contacts.
3. detect and manage clusters and outbreaks, and
4. characterise the epidemiology of COVID-19 in Australia to inform the public health response including:
 - analysing the progression of the epidemic in time, person and place,
 - describing the transmission dynamics, and
 - identifying groups at special risk of infection.

Reporting

PHUs should immediately notify the central state/territory communicable diseases unit upon receipt of a notification or report of a confirmed or historical case of COVID-19 or death in an infected person.

As much information regarding the case's age, sex, comorbidities, place of residence, Indigenous status, any culturally/linguistically diverse background, date of onset, travel history, laboratory results, clinical status, likely place of acquisition, identification of close contacts and follow-up action taken should be included in the initial report, with additional information being followed up within one working day.

Central state/territory communicable diseases units will notify confirmed COVID-19 cases and deaths as soon as practicable to the Australian Government Department of Health via both transmission of data to the National Notifiable Diseases Surveillance System (NNDSS) and via email or telephone notification to the National Incident Room.

Data management

Initial information on confirmed and historical cases of COVID-19 should be entered onto the jurisdictional notifiable diseases database, for transmission to the NNDSS, within one working day of the notification/report. Enhanced surveillance data should be entered shortly after case follow-up.

4. Cases

Definition

Confirmed case

A person who:

1. tests positive to a validated specific SARS-CoV-2 nucleic acid test;

OR

2. has the virus isolated in cell culture, with PCR confirmation using a validated method;

Historical case

A historical case requires laboratory confirmed evidence **OR** laboratory suggestive evidence supported by either clinical evidence **OR** epidemiological evidence and is not a confirmed case

Laboratory confirmed evidence:

Undergoes a seroconversion to, or has a significant rise in, SARS-CoV-2 neutralising or IgG antibody level (e.g. four-fold or greater rise in titre).¹

Laboratory suggestive evidence:

Detection of SARS-CoV-2 neutralising or IgG antibody.¹

Clinical evidence:

1. History of measured ($\geq 37.5^{\circ}\text{C}$)² or self-reported fever (e.g. night sweats, chills).
OR
2. History of an acute respiratory infection (e.g. cough, shortness of breath, sore throat).

Epidemiological evidence:

1. Contact with a known COVID-19 case (confirmed or historical), involving a plausible mode of transmission, at a time when the case was likely to have been infectious.
OR
2. International or domestic travel in a geographically localised area with elevated risk of community transmission⁵, including travel on a cruise ship with known COVID-19 transmission on board.

Reporting

Both **confirmed cases** and **historical cases** should be notified and reported

Suspect case

Clinical and public health judgement should be used in assessing if hospitalised patients with non-specific signs of infection and patients who do not meet the clinical or epidemiological criteria should be considered suspect cases.

A person who meets the following clinical **AND** epidemiological criteria:

Clinical evidence:

Fever ($\geq 37.5^{\circ}\text{C}$)² or history of fever (e.g. night sweats, chills) **OR** acute respiratory infection (e.g. cough, shortness of breath, sore throat)³ **OR** loss of smell or loss of taste.

Epidemiological evidence:

In the 14 days prior to illness onset:

- Close contact (refer to [Close contacts](#) below) with a confirmed case
- International travel
- Passengers or crew who have travelled on a cruise ship
- Healthcare, aged or residential care workers and staff with direct patient contact
- People who have lived in or travelled through a geographically localised area with elevated risk of community transmission, as defined by public health authorities⁴

Notes:

¹ Antibody detection must be by a validated assay and included in an external quality assurance program.

² It is recommended that temperature is measured using a tympanic, oral or other thermometer proven to consistently and accurately represent peripheral body temperature.

³ Other reported symptoms of COVID-19 include: fatigue, runny nose, acute blocked nose (congestion), muscle pain, joint pain, diarrhoea, nausea/vomiting and loss of appetite. Clinical and public health judgement should be used to determine if individuals with sudden and unexplained onset of one or more of these other symptoms should be considered suspect cases.

⁴ For further information on geographically localised areas with elevated risk of community transmission, refer to the [Department of Health website](#): (<https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm>)

Testing

Persons meeting the suspect case definition should be tested for SARS-CoV-2. Persons meeting the [enhanced testing criteria](#) should be tested for SARS-CoV-2. State and territory communicable diseases units can advise on which laboratories can provide SARS-CoV-2 testing; appropriate specimen type, collection and transport; and also facilitate contact management if indicated.

In the context of **specimen collection from confirmed or suspect cases** in a clinic or pathology collection centre, when specimen collection is the only procedure required, the following infection prevention and control precautions apply.

If clinical examination is required, full contact and droplet precautions should be observed as described in the [Coronavirus \(COVID-19\) guidance on use of personal protective equipment \(PPE\) in non-inpatient health care settings, during the COVID-19 outbreak](#)

Infection prevention and control precautions:

- Perform hand hygiene
- Use gloves¹, surgical mask and eye protection (safety glasses or face shield).
 - Gloves must be removed, and hand hygiene performed after each patient, and new gloves put on before the next one.
 - Safety glasses and face shields can be worn during consecutive patients' specimen collections in the same location.
 - If it is labelled as reusable, the face shield can be cleaned with a detergent/disinfectant wipe in between uses.
 - If surgical masks are in short supply, they can be used for periods up to 4 hours during consecutive patients' specimen collections in the same location.
 - The mask should be discarded if it becomes wet or contaminated and on leaving the room.
 - Take care not to touch the mask while it is on; if the front of the mask is touched, remove and discard it, perform hand hygiene and put on a new one.
- The need for a gown or apron is based on risk assessment:
 - A gown or apron is needed for specimen collection, only if close physical contact with a symptomatic patient or splash/spray of body substances is anticipated.
 - If worn, a gown or apron can be worn for specimen collections from consecutive patients in the same location.
 - It must be changed if it becomes visibly contaminated.
 - It must be removed when leaving the immediate area to avoid contaminating other environments.

Note:

¹Vinyl gloves are not recommended for the clinical care of residents in the context of COVID-19. Powder-free latex or nitrile gloves are accepted as superior in clinical care and are less likely to be breached compared with vinyl gloves. Gloves should be selected and worn in line with the Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019).

Collection of upper respiratory samples from asymptomatic members of the public for enhanced testing

For sample collection from asymptomatic persons with no epidemiological risk factors, standard precautions apply, including hand hygiene between individual subjects and use of appropriate PPE, based on risk assessment. It is not possible to provide details of risk assessment for all situations, but the instructions below serve as a guide.

1. Verbally 'screen' the person for symptoms: "Do you currently have any acute respiratory symptoms e.g. runny nose, sore throat, cough or fever?" and record the response.
2. If the person has any symptoms, follow the infection prevention and control precautions above.
3. If the person has no symptoms, PPE is not required for the brief period when physical distancing cannot be maintained for specimen collection and in a setting where there is low or negligible community transmission of COVID-19.
4. Perform hand hygiene before and after collecting the specimen.

Where a person is asymptomatic but is tested as a part of active case finding (e.g. in an outbreak) they should be treated the same as a symptomatic person with regards to PPE requirements during sample collection.

For detailed guidance on the use of PPE in hospitals during the COVID-19 outbreak, refer to [Guidance on the minimum recommendations for the use of PPE in hospitals during the COVID-19 outbreak](#). For information on circumstances requiring airborne precautions, refer to [aerosol-generating procedures](#).

Approach to testing and specimen collection

Routine tests for acute pneumonia/pneumonitis should be performed where indicated, including bacterial cultures, acute and convalescent serology, urinary antigen testing and nucleic acid tests for respiratory pathogens, according to local protocols.

The PHLN advises collecting lower respiratory tract specimens e.g. sputum for SARS-CoV-2 testing where possible. This is because the lower respiratory tract specimens contain the highest viral loads in SARS-CoV and MERS-CoV.

The appropriate specimen for PCR testing is a deep nasal swab and an oropharyngeal swab, the same swab used to sample the oropharynx should be utilised for nasal sampling. It is **not** a swab of the pharynx accessed through the nares (i.e. not a nasopharyngeal swab). Saliva samples may be validated by pathology providers of PCR. For advice on selecting the appropriate specimen for diagnostic reverse transcriptase – polymerase chain reaction (RT-PCR) testing for COVID-19, refer to [Public Health Laboratory Network \(PHLN\) guidance on laboratory testing for SARS-CoV-2](#).

Refer to [PHLN guidance on laboratory testing for SARS-CoV-2](#) for additional information on other testing modalities for acute infection.

Laboratory-based serology tests can help identify individuals who have developed detectable antibodies as part of an immune response to SARS-CoV-2. Serology does not currently have a role for diagnosis during acute illness but has utility for the diagnosis of past SARS-CoV-2 infection.

Collection of serum must be performed under transmission-based precautions if an individual is a suspect COVID-19 case or has proven COVID-19 infection and not yet released from isolation. Collection of serum from proven cases of COVID-19 who have been released from isolation can be performed using standard precautions.

Whole genome sequencing has become a vital part of Australia's response to the COVID-19 pandemic. State and territory public health laboratories have established pathogen genomics capacity and capability at varying levels. Some jurisdictions have demonstrated significant benefits of using SARS-CoV-2 genomics to inform their public health response. Refer to [PHLN guidance on laboratory testing for SARS-CoV-2](#) for further information.

Enhanced testing

The information in this section reflects the current national recommendations for SARS-CoV-2 testing beyond the suspect case definition. These recommendations will change over time based on a variety of factors, including current epidemiology and testing capacity. It is important to check relevant state and territory health department case definitions and criteria for who should be tested, as these will vary according to local epidemiology and circumstances.

Testing beyond the suspect case definition should be undertaken on persons with: fever ($\geq 37.5^{\circ}\text{C}$)¹ or history of fever (e.g. night sweats, chills) or loss of smell or loss of taste, where no other clinical focus of infection or alternate explanation of the patient's illness is evident, **OR** acute respiratory infection (e.g. cough, shortness of breath, sore throat)².

Notes:

¹ It is recommended that temperature is measured using a tympanic, oral or other thermometer proven to consistently and accurately represent peripheral body temperature.

² Other reported symptoms of COVID-19 include: fatigue, runny nose, acute blocked nose (congestion), muscle pain, joint pain, diarrhoea, nausea/vomiting and loss of appetite. Testing beyond the suspect case definition may, based on the clinical and public health judgement of the treating clinician, include individuals with sudden and unexplained onset of one or more of these other symptoms.

To mitigate the risk of transmission through donated organs and to ensure transplantation is conducted as safely as possible, all deceased and living donors should be tested for SARS-CoV-2; ideally, recipients would also be tested. For more detailed information, refer to [Appendix C](#).

Jurisdictions will arrange to test people who are in hotel quarantine due to international travel (i.e. '[returned travellers](#)'). Testing should occur day 0–2 and then on day 10–14 of hotel quarantine, with results to be received prior to release from quarantine period. Exact arrangements will depend on state and territory protocols. Jurisdictions may also test asymptomatic persons quarantined due to interstate travel. For further information, see [Contact management – returned travellers](#).

Jurisdictions are recommended to conduct regular testing of staff who work in COVID-19 quarantine and isolation settings who are at risk of exposure to COVID-19. Workers who are at higher risk are recommended to be tested at least every 7 days. For further information, see [Hotel quarantine workers](#) and [AHPPC statement on COVID-19: Routine Testing of Hotel Quarantine Workers](#).

All specimens should be collected in accordance with the appropriate guidelines, refer to [Coronavirus \(COVID-19\) guidance on use of personal protective equipment \(PPE\) in non-inpatient health care settings, during the COVID-19 outbreak](#)

Post testing instructions for individuals with symptoms that may be due to COVID-19

In any communications about post-test requirements, it is important to make clear that the risk of an individual having COVID-19 is linked to whether they have **a clinically compatible illness and/or epidemiological link, rather than the fact that the person is undergoing a COVID-19 test**. A clear rationale is an important driver of appropriate behaviour.

Jurisdictions should give clear direction on requirements for people to isolate after testing. Clear information should be made available (e.g. on the jurisdictional health department website, in multiple languages). Where applicable, culturally-appropriate resources and engagement with community leaders may also be considered.

The level of isolation required after testing should consider the principles below:

- Epidemiological context
- Potential risk of transmission of undiagnosed COVID-19
- Reduction of the risk of transmission of other causes of acute respiratory illness
- The public health risk of creating a barrier to testing

Healthcare workers providing testing services should have a good understanding of their jurisdiction's isolation requirements after testing, based on written information from the jurisdiction's Communicable Diseases Unit (or equivalent). Healthcare workers providing testing services should clearly communicate the isolation requirements each person should follow after testing, depending on their situation.

Directions on isolation requirements after testing could be divided based on the following categories:

1. People who are **not** in quarantine with a clinically compatible illness:
2. People who **are in quarantine** with a clinically compatible illness

For people not in quarantine with a clinically compatible illness:

- A person with a clinically compatible illness should stay at home until a negative test is returned AND symptoms have resolved¹.
- Whilst at home, the individual should continue to practise respiratory and hand hygiene, and, where possible, try to stay at least 1.5 metres away from others and where this is not possible, wear a mask.
- The household should not have visitors, but household contacts are free to come and go from the house.

Additional Instructions for people with symptoms compatible with COVID-19 when there is community transmission:

- Where possible, they should try to isolate in a single room in the household, avoid common areas and not carry out regular caring responsibilities that bring them into close contact with others.
- Household contacts should not attend high-risk settings (e.g. residential aged-care facilities)

For people in quarantine with a clinically compatible illness:

- They should isolate in a single room in the household, avoid common areas and not carry out regular caring responsibilities that bring them into close contact with others.
- Instructions should stress that even if the individual receives a negative test result they must remain in quarantine for the pre-determined period as determined by the relevant PHU.

Notes:

¹ In some situations, where the pre-test probability is very low and particularly where there is a long delay between taking a test and receiving a result, public health authorities may decide that it is permissible for individuals with complete symptom resolution to leave their homes, even when they have not yet received a negative test. In this situation, individuals may still be asked to avoid any high-risk settings (e.g. RACFs) until a negative test is received. Decisions on this advice will rest with local public health authorities who are best placed to recognise the level of local risk.

Procedure for assessing indeterminate and suspected false positive SARS-CoV-2 PCR results

Australian laboratories use highly accurate SARS-CoV-2 PCR assays and have procedures in place for confirmatory testing when required. Despite this, it may not be possible for the laboratory to provide a definitive positive or negative result for all specimens tested for SARS-CoV-2.

In addition, despite the highly specific nature of the SARS-CoV-2 PCR, the low prevalence of COVID-19 in some jurisdictions and high levels of enhanced testing means the positive predictive value of the test result may be reduced, increasing the risk of a false positive result. PHUs should consider this in low prevalence settings along with the clinical and epidemiological information, especially when the case is not linked to a previous known case and has no other epidemiological risk factors (e.g. international travel or travel to a setting with increased incidence). Such an assessment is particularly important in order to avoid continuing unnecessary isolation of cases, quarantine of contacts, and strain on public health resources. When deciding on appropriate action, it is important to note that the incidence of false positive results in Australia to date has been very low, despite most testing being conducted in low prevalence populations.

Indeterminate or inconclusive PCR results

Despite most laboratories employing multiple PCR tests for the detection of SARS-CoV-2, often with several gene targets in each assay, it may not be possible to resolve initially discrepant PCR results in all instances (e.g. the laboratory PCR test results are weakly positive for only one SARS-CoV-2 specific target). Indeterminate results may be due to SARS-CoV-2 infection with very low viral loads, persistent shedding or due to non-SARS-CoV-2 reactivity in the PCR test. In these circumstances, PHUs should first contact the laboratory microbiologist to discuss the results and decide whether further testing is warranted. As for all indeterminate results, results should be considered in the context of the clinical and epidemiological circumstances to inform decisions on any required further public health action. Indeterminate results are not always false positive results and may occur, for example, with low viral loads or in historical cases. The procedures for investigation of suspected false positive PCR results (below) may be employed when determining whether the person with indeterminate PCR results is to be managed as a COVID-19 case.

Suspected false positive PCR results

False positive test results are rare but can occur for a variety of reasons. Further information on the possible sources of false positive PCR tests see [Public Health Laboratory Network Guidance on Nucleic Acid Test Result Interpretation for SARS-CoV-2](#).

The usual circumstance for a positive SARS-CoV-2 PCR result to be suspected to be a false positive is **when there is a lack of an epidemiological risk factor for acquisition of COVID-19**, especially in the setting of asymptomatic screening. Before attributing the result as a false positive it is very important that the **PHUs first contact the laboratory microbiologist** to obtain more details of the PCR test results.

The laboratory microbiologist will investigate for any evidence of laboratory error or non-specific reactivity in the PCR test, and ascertain whether further testing of the sample is required (e.g. has retesting of the sample already been performed, has the result been confirmed using an assay with a second gene target or using a second molecular assay, either within the original testing laboratory, or by referral to a reference or another laboratory). The laboratory may also perform molecular tests for alternate diagnoses, particularly molecular testing for other respiratory viral pathogens.

If results from the further laboratory investigations provide convincing evidence that the case is negative, the case may be considered a false positive and the laboratory will issue an amended report.

Investigation of suspected false positive PCR results

Where there is agreement that the PCR result should be queried as a possible false positive, further assessments should be conducted in **close collaboration with the laboratory microbiologist and the treating clinician:**

1. Ensure that all relevant public health action, including case isolation and contact tracing, continues until there is consensus (or majority decision) that the case is a false positive.
2. Thoroughly review the clinical history (including for mild/atypical symptoms; delayed development of symptoms; history of compatible illness) of the case and any potential epidemiological links. Consider the potential of the case being any of the following:
 - True asymptomatic infection
 - Pre-symptomatic infection
 - Symptomatic infection (especially mildly symptomatic infection)
 - Previous infection with persistent shedding of viral RNA
3. Immediately collect another respiratory specimen for PCR testing, where feasible.
4. Consider collection of acute and convalescent serum, where feasible, for serological testing to look for seroconversion or significant rise in SARS-CoV-2 neutralising or IgG antibody level.
5. Where feasible and at the discretion of PHU, collect and test respiratory specimens from close contacts of the case, starting with those who have had the most regular and prolonged contact (e.g. household contacts).
 - Consider collecting sera of contacts to identify 'potential source contacts'.

The results of the above investigation procedures, including the relevant laboratory information following discussion with the microbiologist, should be recorded and collated into a standard report.

During this process, if a second sample is PCR positive or there is evidence of seroconversion, the person should be classified as a confirmed case of COVID-19.

To assist with this determination and with public health actions, a case conference with experienced public health practitioners, the microbiologist and the treating clinician may be considered once the laboratory, clinical and epidemiological information from the investigation is available. In some jurisdictions, there may already be established panels for this purpose. Where there may be a degree of uncertainty or difficulty reaching an agreement as to whether the PCR is a false positive; the risks of missing a true COVID-19 case should be considered. Depending on the circumstances, it may be pertinent to consider the case as a confirmed case.

Where the outcome of the above assessment or case conference is that the PCR result can confidently be considered to be a false positive, all public health interventions can be ceased, and the case and contacts should be made aware of the outcome. If notification has taken place and the case is included in jurisdictional and national reporting, PHUs should take necessary actions to reverse this.

Case management

Response times

On notification of a confirmed or suspect case, begin follow up investigation as soon as practicable and, where applicable, notify your central state or territory communicable diseases unit. Complete follow up within 1 day.

PHU staff should be available to contribute to the expert assessment of patients under investigation as possible cases on request from hospital clinicians or general practitioners.

Response procedure

Case investigation

The response to a notification will normally be carried out in collaboration with the clinicians managing the case and be guided by the [COVID-19 PHU checklist \(Appendix A\)](#) and the state or territory COVID-19 case report form.

Genome sequencing for all cases

With the emergence of new variants of SARS-CoV-2 with higher transmissibility overseas, whole genome sequencing of COVID-19 cases in Australia must be prioritised for all new cases (overseas and locally acquired)¹. Laboratories across Australia are routinely monitoring sequences for variants, including variants of concern identified in the United Kingdom (B.1.1.1.7) and Republic of South Africa (B.1.351). These are the current variants of concern and have been shown to have increased transmissibility. Rapid identification of cases infected with a SARS-CoV-2 variant of concern enables cases to be managed with additional precautions to mitigate risk to the public (see [release from isolation](#) criteria). Public health authorities should work with the Communicable Diseases Genomics Network (CDGN) to ensure timely reporting of genomics to AusTrakker, where feasible.

Regardless of who does the follow-up, PHU staff should ensure that action has been taken to:

- Isolate the case
- Confirm the onset date and symptoms of the illness.
- Confirm results of relevant pathology tests, or recommend that tests be done, including repeat tests where relevant.
- Determine if the diagnosis has been discussed with the case or relevant caregiver before beginning the interview).
- Review both case and contact management.
- Commence or complete contact tracing with identified close contacts placed in quarantine within 48 hours of specimen collection from the case and determine if the case has attended settings that are at higher risk for transmission.
- Ensure appropriate infection control guidelines are followed in caring for the case.
- Identify the likely source of infection

Note: If interviews with suspect cases are conducted face-to-face, the person conducting the interview must have a thorough understanding of infection control practices and be competent in using appropriate PPE.

¹ <https://www.who.int/csr/don/31-december-2020-sars-cov2-variants/en/>

PCR positive tests in asymptomatic or pre-symptomatic persons

Jurisdictional enhanced testing regimens may identify asymptomatic or pre-symptomatic PCR positive cases in the community (i.e. not in quarantine or a high-risk outbreak setting). In such circumstances, the person is considered a confirmed case and should be isolated while the following steps are taken:

1. Confirm veracity of the test in close liaison with the laboratory, if indicated depending on local epidemiology. In some cases, this may involve re-running the test on an alternative platform, retesting, or testing at a reference laboratory.
2. Thorough investigation of the case history for the past 3 months to determine if they had recent symptoms compatible with COVID-19 or an identified epidemiological link. If historical symptoms are identified, the duration of infectivity is regarded as commencing 48 hours prior to symptom onset for the purposes of contact tracing.
3. If no historical symptoms are identified, the case is considered infectious for 48 hours prior to the initial positive test for the purposes of contact tracing.
4. Regardless of whether historical symptoms are identified, the case should be followed prospectively for 10 days after the initial test to determine if symptoms develop. If symptoms develop, the case is considered to have been pre-symptomatic and the case and contacts should be managed according to the time of symptom onset.

Patients identified as asymptomatic or pre-symptomatic may be released from isolation when they meet the relevant 'release from isolation' criteria (refer below).

Identification of potential source contacts

Potential source contacts (or 'upstream contacts') are individuals who had contact with the first reported case during the time in which the case was likely to have acquired infection. Where a confirmed case has no identified source of infection, potential source contact tracing of the 'first reported case' (or in an outbreak, index case) should be undertaken. The aim is to identify potential unrecognised chains of transmission, and may be particularly important to identify the source of introduction of disease in a [setting where there is potential for rapid transmission](#) (e.g. aged care facilities, correctional facilities, and closed community settings). In such settings, potential source contact tracing should be done for the index case.

For most cases, infection is likely to have been acquired 5-7 days prior to the first reported case becoming symptomatic (i.e. the median incubation period of the disease) but may be from anyone who has had contact between 14 days and 24 hours before the first reported case became symptomatic (i.e. the longest and shortest possible incubation periods). These individuals may be unidentified cases and the transmission source for the first reported case. Follow-up should occur for any person who in that period had:

- face-to-face contact with the index case in any setting for greater than 15 minutes cumulative over the course of a week, or,
- sharing of a closed space with the index case for a prolonged period (e.g. more than 2 hours).

All potential source contacts should be screened for possible symptoms, have their temperature measured and, where feasible, be tested for SARS-CoV-2 infection with a PCR test; with prioritisation of those at highest risk. If a validated serological assay is available, serological testing should be considered for potential source contacts who are currently well (noting the limitations of antibody testing and potential lack of availability). In [settings where there is potential for rapid transmission](#), it is likely that some contacts will be identified as both

close contacts and potential source contacts and contact status may not be able to be determined.

For potential source contacts who test positive, via PCR or a validated serological assay, clinical and public health judgement should be used to determine if they are infectious; if infectious, they should be managed as any other confirmed case. They should also be assessed to determine if they are likely to be the primary case who infected the index case, a secondary case infected by the first reported case, or represent a separate transmission chain.

Wherever a new case is identified, rapid contact tracing of these cases must also occur.

Clinical management

In the absence of pathogen-specific interventions, patient management largely depends on supportive treatment, and vigilance for and treatment of complications.

Further advice on clinical management is available from:

- [WHO](https://bit.ly/3eKZQs3): <https://bit.ly/3eKZQs3>
- [National COVID-19 Clinical Evidence Taskforce](https://covid19evidence.net.au/): (<https://covid19evidence.net.au/>)
- [Cochrane Library: Coronavirus \(COVID-19\)](https://www.cochranelibrary.com/covid-19): (<https://www.cochranelibrary.com/covid-19>)

Education

Cases should be educated about the nature of the illness, importance of isolation and infection control measures that prevent the transmission of COVID-19. PHU staff should provide a COVID-19 factsheet to cases and their household contacts.

Isolation and restriction

Depending on clinical indication, cases should either be managed in hospital, at home, or other community settings identified by the PHU. Cases may be managed at home or in a community setting only if:

- a risk assessment is conducted regarding the suitability of the accommodation and living arrangements, including who else is in the home and their vulnerability to severe disease; and
- If it can be assured that the home environment permits separation of the case from other household members; the case and household contacts are counselled about risk, and appropriate infection control measures are in place.

Healthcare workers and others who come into contact with confirmed and suspect cases must be protected according to recommended infection control guidelines. Visitors should be restricted to close family members.

If a case is identified through serology, clinical and public health judgement should be used in determining case management and whether or not a case requires isolation. If the case had a clinically compatible illness some time ago, it may not be necessary to isolate the case and quarantine close contacts.

PHUs should undertake a risk assessment for suspect cases who initially test negative for SARS-CoV-2. If there is no alternative diagnosis and a high index of suspicion remains that such cases may have COVID-19, consideration should be given to continued isolation and use of the recommended infection control precautions, pending further testing (refer to [Testing](#))

[section](#) and [PHLN guidance on laboratory testing for SARS-CoV-2](#)) and re-assessment. Suspect cases can otherwise discontinue isolation upon receipt of a negative test result and resolution of symptoms. Suspect cases who are close contacts or are required to quarantine for other purposes (e.g. international travel) must continue quarantine for the remainder of the 14-day period, regardless of any negative test results. Refer to [Management of contacts](#) for further information.

In addition to standard precautions, including hand hygiene (5 Moments), recommendations for the use of PPE during clinical care of people with confirmed or suspected COVID-19 are:

- **Contact and droplet precautions** are recommended for **routine care** of patients with confirmed or suspected COVID-19.
- **Contact, droplet and airborne precautions** are recommended when performing **aerosol-generating procedures, and in other specified clinical circumstances**. Refer to [Guidance on the minimum recommendations for the use of PPE in hospitals during the COVID-19 outbreak](#) for further information.

Other recommended infection control measures include:

- When a patient with acute respiratory symptoms, and/or who meets the confirmed or suspect case definition
 - presents to a healthcare setting (GP, hospital ED, or pathology collection centre), the patient should immediately be:
 - given a surgical mask to put on if acute respiratory symptoms are present, AND
 - placed in a single room with the door closed or in a physically separated closed area designated isolation area that is separate from other patient areas and is not used as a thoroughfare, OR
 - at minimum, be directed to a single room with the door closed for an aerosol-generating procedure, OR
 - directed to a negative pressure room if an aerosol-generating procedure is to be performed (or well-ventilated operating or procedure room).

If transfer outside of the room or designated isolation area is necessary, the patient should wear a surgical mask during transfer, if their condition allows.

Patients should be reminded of the importance of respiratory hygiene and cough etiquette at all times. Patients requiring oxygen therapy should be transitioned to nasal prongs where medically possible and wear a surgical mask.

For more detailed guidance on the use of PPE in hospitals during the COVID-19 outbreak, refer to [Guidance on the minimum recommendations for the use of PPE in hospitals during the COVID-19 outbreak](#).

For detailed information on standard and transmission-based precautions, (including contact, droplet, and airborne precautions) refer to the [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#).

Release from isolation

Confirmed cases NOT infected with a SARS-CoV-2 variant of concern.

The following information details the circumstances under which confirmed cases **not infected with a SARS-CoV-2 variant of concern, as confirmed by whole genome sequencing**, can be released from isolation. Cases can be released from isolation if they meet the appropriate

criteria in either point 1, 2, or 3 – whichever is applicable. Significantly immunocompromised cases can be released from isolation if they meet the appropriate criteria in point 1, 2, or 3 and the additional criterion in point 4.

1. Confirmed cases who are asymptomatic.

The case can be released from isolation if at least 10 days have passed since the first respiratory specimen positive for SARS-CoV-2 by PCR was taken and no symptoms have developed during this period.

2. Confirmed cases with mild illness (not requiring hospitalisation or admitted to hospital for reasons not directly related to acute COVID-19 e.g. infection control).

The case can be released from isolation if they meet all of the following criteria:

- at least 10 days have passed since the onset of symptoms; and
- there has been resolution of fever and substantial improvement of respiratory symptoms of the acute illness for the previous 72 hours^{1,2}

3. Confirmed cases with more severe illness (where severity would warrant hospitalisation irrespective of whether the case was hospitalised or not).

a. Confirmed cases with resolution of fever and respiratory symptoms of acute illness.

The case can be released from isolation if they meet all of the following criteria:

- at least 14 days have passed since onset of symptoms; and
- there has been resolution of fever and respiratory symptoms of the acute illness for the previous 72 hours^{1,2}

b. Confirmed cases without complete resolution of respiratory symptoms of acute illness.

The case can be released from isolation if they meet both of the following criteria²:

- at least 20 days have passed since the onset of symptoms; and
- the case is not significantly immunocompromised⁴

OR

The case can also be released from isolation if they meet all the following criteria:

- at least 14 days have passed since the onset of symptoms;
- there has been substantial improvement in respiratory symptoms of the acute illness (including resolution of fever for the previous 72 hours)¹; and
- the case has had two consecutive respiratory specimens negative³ for SARS-CoV-2 by PCR taken at least 24 hours apart and at least 11 days from symptom onset.

4. Significantly immunocompromised persons.

In **addition** to meeting the appropriate criteria described in points 1, 2, or 3a above, persons who are significantly immunocompromised⁴ and are identified as confirmed cases

must meet a higher standard requiring additional assessment. They can be released from isolation when they meet the following additional criterion:

- PCR negative³ on at least two consecutive respiratory specimens collected at least 24 hours apart at least 7 days after symptom onset⁵.

Notes:

¹ Some people may have pre-existing illnesses with chronic respiratory signs or symptoms, such as chronic cough. Others may have on-going sequelae that result in symptoms such as continuing shortness of breath or post viral cough. For these people, the treating medical practitioner should make an assessment as to whether the respiratory signs and symptoms of acute COVID-19 have resolved.

² If a case who meets these criteria is additionally swabbed and tests positive, then the case can still be released from isolation based on current evidence from the literature and Australian public health experience that indicates these people are unlikely to be infectious.

³ In patients in which swabs are required to meet release from isolation criteria but where swabs remain positive, additional factors may be considered to determine the need of ongoing isolation, including the clinical scenario and laboratory details (e.g. Ct values, viral culture results). This should be discussed with the treating medical practitioner, the testing laboratory and public health.

⁴ Persons who are clinically assessed as being significantly immunocompromised may have a reduced ability to effectively clear SARS-CoV-2 and a prolonged infectious period. Significantly immunocompromised persons may include, but are not limited to, those who have had an organ transplant and are on immune suppressive therapy; have had a bone marrow transplant in the past 2 years; are on immune suppressive therapy for graft versus host disease; have had an active haematological malignancy; and human immunodeficiency virus infection with CD4 T lymphocyte count below 200 cells/per mm³; or other conditions specifically noted by the treating medical practitioner.

⁵ If the patient has a productive cough due to a pre-existing respiratory illness or other ongoing lower respiratory tract disease, then the sputum or other lower respiratory tract specimens must be PCR negative for SARS-CoV-2. Otherwise upper respiratory tract specimens (deep nasal and oropharyngeal swabs) must be PCR negative.

Routine PCR testing post-release from isolation is not recommended unless the person re-develops clinical features consistent with COVID-19.

If a case is identified retrospectively through serology, clinical and public health judgement should be used in determining case management and whether or not a case requires isolation. If the case had a clinically compatible illness some time ago, it may not be necessary to isolate. If isolation is required, the case can be released from isolation when the appropriate criteria (above) is met.

Based on a review of current evidence, persons who fulfil the appropriate criteria above are not considered to be infectious (38, 39). Cases returning to a high risk setting can be released from isolation based on the clinical criteria above and **do not need to meet** a higher standard or undergo additional assessment before going into any high-risk settings. This includes persons returning to work in a health care setting, living in a residential age care setting, or who regularly attend healthcare settings for any other reason. Specifically, if a person has met the appropriate criteria above, it is **not** necessary for them to:

- undergo isolation or quarantine in another ward, the facility they are returning to, or any other location, or
- have evidence of any negative test results for SARS-CoV-2 prior to returning to residential aged care or any other setting.

Note that for patients who are being transferred to another ward or hospital, they should remain in isolation with transmission-based precautions and appropriate PPE until the above criteria (point 3) is met.

People who have recovered from COVID-19 and have been released from isolation based on the criteria above do not require COVID-19 testing if they are hospitalised for a non-COVID-19 related condition.

The duration and degree of immunity following infection is not yet known. Persons who have been released from isolation should adhere to hygiene and physical distancing measures.

A person without significant immunocompromise who has recovered from COVID-19 does not need to quarantine if they become a close contact of a confirmed case and the exposure was less than 8 weeks since the recovered case's symptom onset (or first positive PCR test if the case was asymptomatic). Recovered cases, unless immunocompromised, can continue to attend high-risk settings (refer to Outbreak investigation and management in high-risk settings for examples of settings) and do not need to be furloughed from work if re-exposed during this 8 week period. For recovered cases exposed after 8 weeks from their symptom onset (or first positive test if asymptomatic), and immunocompromised recovered cases exposed at any time after release from isolation, consider serology testing in consultation with the microbiologist or virologist at the testing laboratory when making decisions about quarantine and exclusion from the high-risk settings.

All recovered cases should continue following community recommendations (e.g. physical distancing, hand hygiene, masks where indicated etc.) and healthcare workers should continue to use appropriate PPE as recommended when caring for COVID-19 patients, or in settings of potential exposure. Infectious cases living in the same household as recovered cases should remain isolated from recovered cases to the extent practicable.

Re-exposed recovered cases should self-monitor for symptoms clinically consistent with COVID-19 for 14 days after the last contact with the confirmed case. If symptoms reappear, they should immediately self-isolate and be retested for SARS-CoV-2. As further evidence becomes available on the duration of immunity, these recommendations may be amended.

Faecal sampling is not recommended as a standard test, however, it may be done for patients with gastrointestinal symptoms. For cases who do have faecal samples tested, and remain persistently PCR positive in these samples after all the release from isolation criteria (above) are met, further or extended precautions and exclusions should be implemented on a case-by-case basis:

- All cases with diarrhoea should be advised not to prepare food for others until 48 hours after symptoms have resolved.
- Cases who are employed in a role where there is an increased risk of onward transmission (e.g. healthcare workers, restaurant workers and food handlers), should be excluded from work until 48 hours after any symptoms of diarrhoea have resolved.
- Cases with ongoing diarrhoea or faecal incontinence who may have limited capacity to maintain standards of personal hygiene should be isolated until 48 hours after the resolution of these symptoms.

Patients do not require repeat testing until they are PCR negative in faecal samples. It is recommended that people who remain persistently PCR positive in faecal samples use soap and water for hand hygiene. If this is unavailable, alcohol hand gel should be used. Education emphasising the importance of proper hand hygiene should be provided to **all** cases upon release from isolation.

Confirmed cases infected with a SARS-CoV-2 variant of concern

The following information details the circumstances under which confirmed cases *infected with a SARS-CoV-2 variant of concern* as confirmed by whole genome sequencing, can be released from isolation.

All cases *must* fulfil the following criteria to be considered for release from isolation:

- at least 14 days have passed since the onset of symptoms or positive PCR if asymptomatic; and
- there has been clinical resolution of fever and respiratory symptoms of the acute illness for the previous 72 hours

In **addition** to the above criteria, cases must have a respiratory specimen for SARS-CoV-2 by PCR taken at day 12-13 from symptom onset, (or from the first positive PCR date for asymptomatic cases). Cases should be managed as follows:

- If the day 12-13 PCR is negative, the case may be released from isolation, regardless of serology result; or
- If the day 12-13 PCR has a high/long CT in consultation with the responsible authorising pathologist, and spike/neutralizing antibodies are present, then the case would be considered non-infectious and can be released from isolation. Expert public health and laboratory review should be sought if there are concerns with thresholds of the PCR or serology values to decide on release from isolation.
- If the day 12-13 PCR has a high/long CT in consultation with the responsible authorising pathologist, and no seroconversion, a repeat PCR could be performed (to ensure the result was not due to inadequate collection) and serology could be repeated. In these circumstances, expert public health and laboratory review is required to determine when the case can be released from isolation.

Definition of COVID-19 death

A COVID-19 death is defined for surveillance purposes as a death in a confirmed COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID-19 (e.g. trauma). There should be no period of complete recovery from COVID-19 between illness and death. Where a Coroner's report is available, these findings are to be observed.

5. Contacts

Close contacts

The aim of contact tracing is to interrupt transmission of SARS-CoV-2. In a setting of limited or no community transmission, the following definitions of contacts should be used to rapidly identify all persons who may be incubating the disease.

A primary close contact is anyone who has had unprotected exposure to a confirmed case. Identifying people who are secondary close contacts of those primary contacts is an intensive exercise aimed at a second ring of containment. It may or may not be implemented depending on the circumstances of the epidemic at the time. Identification of secondary contacts may be more applicable in household settings, situations with challenges in communication with contacts, settings with delays in testing or specific workplaces such as those with a high transmission risk.

Primary close contact

A primary close contact is defined as a person who has:

- had face-to-face contact of any duration or shared a closed space (for at least 1 hour) with a confirmed case during their infectious period (from 48 hours before onset of symptoms until the case is no longer infectious (refer to [Release from isolation](#))).
- the exposure may be any duration depending on risk setting such as: transmission has already been proven to have readily occurred, there are concerns about adequate air exchange in an indoor environment or concerns about the nature of contact in the place of exposure (e.g. the contact has been exposed to shouting or singing)
- been exposed to a **setting or exposure site** where there is a high prevalence of infection e.g. a country where there is community transmission of COVID-19, or unprotected exposure in a quarantine hotel for returned travelers
- been in a venue where transmission has been demonstrated to have occurred during the time frame in which the transmission would be expected to have occurred.

If the case is asymptomatic, see [PCR positive tests in asymptomatic or pre-symptomatic persons](#) for information on determining the asymptomatic (or pre-symptomatic) case's infectious period and to inform identification of contacts

Contact needs to have occurred within the infectious period of the case: a period extending from 48 hours before onset of symptoms in the case until the case is classified as no longer infectious (refer to [Release from isolation](#)). More conservative periods (e.g. 72 hours prior to illness onset) may be considered in high risk settings, at the discretion of the PHU.

If the case is asymptomatic, see [PCR positive tests in asymptomatic or pre-symptomatic persons](#) for information on determining the asymptomatic (or pre-symptomatic) case's infectious period and to inform identification of contacts.

Note that:

- Healthcare workers and other contacts who have taken recommended infection control precautions, including the use of appropriate PPE, while caring for an infectious confirmed COVID-19 case are not considered to be close contacts.

For more information about close contacts in different settings Refer to [Special situations](#) and [Appendix B](#).

Casual contact

A casual contact is defined as a person who has:

- been in the same setting with a confirmed case in their infectious period, but does not meet the definition of a primary close contact

At the discretion of the PHU, some casual contacts may be classified as primary close contacts. This may be relevant in super spreading events, where there is evidence of transmission occurring to people who do not meet the primary close contact definition (e.g. in restaurants, pubs, places of worship). The following factors should be considered prior to classifying casual contacts as primary close contacts:

- Epidemiological context, risk tolerance and level of community transmission
- Potential for the venue or setting to result in large scale amplification
- Jurisdictional capacity and resourcing requirements, including potential opportunity costs
- Adequate translation services, culturally-appropriate resources and engagement with community leaders, where appropriate

Secondary close contact

A secondary close contact (also known as a close contact of a close contact) is defined as a person who has:

- had face-to-face contact in any setting with a primary close contact from 24 hours after the primary contact's exposure to the case
- the exposure to the primary close contact may be any duration depending on risk setting such as: transmission has already been proven to have readily occurred, there are concerns about adequate air exchange in an indoor environment or concerns about the nature of contact in the place of exposure (e.g. the contact has been exposed to shouting or singing)

Management of contacts

All persons identified as having had contact with a confirmed case should be assessed to see if they should be classified as a primary close contact and should have demographic and epidemiological data collected.

All identified contacts who do not meet the primary close contact definition should be provided with information on their risk (refer to [Education](#) below), where feasible.

Quarantine and restriction

The site of quarantine needs to be carefully chosen to prevent transmission to others. Homes may not be feasible if the person cannot quarantine away from other house members.

Primary close contacts

Primary close contacts:

- are required to quarantine for 14 days following the last possible contact with a confirmed COVID-19 case, during the case's infectious period. Quarantine must occur for 14 days regardless of any negative test result.

- should be advised to monitor their health. PHUs should conduct active daily monitoring of primary close contacts for symptoms for 14 days after the last possible contact with a confirmed COVID-19 case, during the case's infectious period.
- should be advised on the processes for seeking medical care, including on how to safely seek testing for COVID-19. Refer to [Medical care for quarantined individuals](#).
- should be tested during the quarantine period. At a minimum this should occur
 - On entry to quarantine – a positive test result would make the primary close contact a case and support a decision to move the person to an alternative place for isolation and would also bring forward contact tracing for that person
 - If symptoms of COVID-19 develop
 - Before exit from quarantine (where appropriate)
 - For household and individually identified close contacts, and all other close contacts considered to be at higher risk of infection, finding a positive test result late in the quarantine period (e.g. day 10–12) of a primary close contact who is asymptomatic or has under-reported symptoms would prevent the release of potentially infectious people into the community.
 - Exit screening is particularly important if the primary close contact is associated with a high risk setting or if the timing of potential exposure is likely to see infection develop later in the quarantine period.
 - In some circumstances, PHUs may also consider the need for extension of quarantine if a primary close contact refuses to undergo exit testing.

Casual contacts

Casual contacts should be provided with information about their exposure and need to monitor for symptoms and seek testing if symptoms develop. Depending on the circumstances, they may be asked to attend for asymptomatic testing.

Secondary close contacts

Some jurisdictional communicable disease authorities or PHUs may identify secondary close contacts (also known as close contacts of close contacts) and require them to quarantine for a duration of time since the exposure of a primary close contact to the confirmed case.

PHU may consider quarantine of secondary contacts if:

- The primary close contact has a higher probability of becoming a case (e.g. exposed at a high-risk setting such as abattoir or hospital);
- The secondary contact has had extensive and/or ongoing exposure to the primary contact (e.g. living in the same household);
- There was a delay in confirming the initial case or commencement of contact tracing (enabling more time for the primary contact to become infectious prior to quarantine);
or
- Secondary transmission has already occurred from a primary close contact to a secondary close contact.

Secondary close contacts should be quarantined until the PHU is certain that the primary close contact was not infectious at the time of last contact with the secondary close contact (i.e. the primary contact returns a negative test result, or the exposure time is not consistent with transmission) and contact with the primary contact is not ongoing.

Enhanced management of household contacts

In households with one or more confirmed cases of COVID-19, PHUs may implement several enhanced contact management strategies. These strategies may particularly be useful for people living together in close quarters where quarantine is not possible (e.g. single parent families with young children) or is challenging (e.g. extended families that share multiple living spaces, people who share a small apartment). Given the greater potential for multiple generations of transmission in these settings, enhanced contact management strategies may reduce the number of secondary cases as well as the overall period of quarantine for household members.

Potential strategies include those used in outbreaks in closed settings, for example:

- Providing separate accommodation to cases on diagnosis, or to asymptomatic household members
- Providing separate accommodation for close contacts who are unable to quarantine from the rest of the household
- PCR testing of household contacts in mid-quarantine, in addition to the entry and exit testing, to enable early identification and isolation of cases
- Quarantine of an entire household
- Serological testing of household contacts to identify household members who have had earlier undiagnosed infection and therefore not at risk of becoming infectious with COVID-19 (noting that interpretation of serology requires expert review and interpretation in light of clinical and epidemiological risk).

In some larger households, PHUs may wish to use similar principles in managing a case in a closed setting (see [Outbreak investigation and management in high-risk settings](#)).

Returned travellers

Returned travellers are defined as those who have undertaken international travel to any country outside Australia in the last 14 days.

All travellers, with the exception of travellers from New Zealand in some jurisdictions, who have returned from international travel are required to be in mandatory quarantine for 14 days after arrival in Australia. Returned travellers must adhere to jurisdictional quarantine requirements, which includes mandatory hotel quarantine.

In addition, some state and territory governments have travel restrictions for persons arriving from other domestic jurisdictions. Persons may be required to quarantine for 14 days following travel to another state or territory and should check local requirements before travelling.

Quarantined returned travellers should be advised on the processes for seeking medical care. Refer to [Medical care for quarantined individuals](#). All returned travellers undertaking quarantine should self-monitor for symptoms and [immediately isolate themselves from others \(if they are quarantining with other people\) should they become unwell](#). This advice should be followed for 14 days after returning from overseas/interstate.

Jurisdictions will test asymptomatic persons who are quarantined due to being a returned international traveller. They will do this on day 0–2 and then on day 10–12 of hotel quarantine. Exact arrangements will depend on states and territories, with results from the second test to be received by the end of the quarantine period. Some jurisdictions may also test persons quarantined due to interstate travel.

If a negative test result is received, the returned traveller may finish quarantine after the 14-day period has transpired. If a positive result is received, the returned traveller should be isolated and managed as per the recommendations for confirmed cases.

All returned travellers who have undertaken international travel in the last 14 days **who are unwell** with fever, or with respiratory symptoms (with or without fever) or other symptoms consistent with COVID-19 should be isolated and managed as per the current recommendations for suspect cases.

Quarantine and essential workers

Quarantined individuals who are regarded as essential workers in a [critical infrastructure industry](#) should work from their quarantine location (e.g. home, hotel) and/or implement alternate staffing arrangements wherever possible. Where this is not feasible, an individual risk assessment should be conducted in collaboration with the PHU to identify essential workers who **may** be permitted to maintain normal work patterns while in quarantine.

This should only be considered in circumstances where there is risk of grave damage to Australian national interests and security if the worker is unable to work. If normal work patterns are maintained, the essential worker should practise vigilant physical distancing, hand and respiratory hygiene, and wear a mask whilst around others at work. Normal quarantine restrictions should be adhered to outside of essential work activities.

Medical care for quarantined individuals

If individuals in quarantine need medical attention for any reason (e.g. fever and respiratory symptoms or other illness/injury), they should telephone their GP or hospital Emergency Department before presenting. Patients with severe symptoms should call 000 and make it clear they are in quarantine or isolation (or otherwise) because of COVID-19. If the patient has symptoms consistent with the COVID-19 [case definition](#), the local PHU should be consulted about the most suitable venue for clinical assessment and specimen collection. Where feasible, patients should don a surgical mask before presenting to any healthcare setting.

Management of symptomatic contacts

If fever or respiratory symptoms consistent with the clinical criteria in the [suspect case definition](#) develop within the first 14 days following the last contact with a confirmed case, the individual should be immediately isolated and managed as per the current recommendations for suspected COVID-19 cases, with urgent testing for COVID-19 undertaken in an environment that minimises the exposure of others.

Ill contacts who are being evaluated for COVID-19 can be appropriately isolated and managed at home or in other community settings identified by PHU, unless their condition is severe enough to require hospitalisation.

Symptomatic primary close contacts who test negative for SARS-CoV-2 by PCR should be re-tested, given the higher pre-test probability for COVID-19. Re-testing should occur as soon as possible after a negative result is received, and if still negative, another test may be conducted on day 14 of the quarantine period. They will still need to be monitored for 14 days after their last contact with a confirmed COVID-19 case.

Prophylaxis

No specific chemoprophylaxis is available for contacts.

Education

Primary and secondary close contacts (where secondary close contacts are identified and contacted) should be counselled about their risk and the symptoms of COVID-19 and provided with a COVID-19 factsheet. They are required to self-quarantine. Casual contacts are not required to quarantine, but may similarly, where feasible, be counselled about their risk and the symptoms of COVID-19 and provided with a COVID-19 factsheet. They should be given advice about the need to immediately self-isolate and get tested should they develop symptoms and given information about where and how to access COVID-19 testing.

6. Outbreak investigation and management in high-risk settings

This section focuses on the epidemiological investigation and response to an outbreak in a high-risk setting (i.e. a setting where there is potential for rapid transmission). Investigations in these settings differ as a wider range of contacts may need to be considered.

Contact tracing in high-risk settings

In high risk settings, an aggressive and proactive approach to contact tracing is required. As a starting position, all staff on the same or overlapping shifts should be regarded as potentially at risk requiring assessment. Potential sources of information might include shift rosters, patient allocation lists, patient documentation, and tearoom logs, in addition to interviews with the case and potential contacts. In healthcare settings, it is important to consider all staff groups who may have been present – medical, nursing, allied health, paramedics, pharmacy, cleaners, pastoral care, security, contractors, students and visitors. In addition to face-to-face contact during the course of patient care, other settings such as tea rooms, shared work areas, changing rooms and bathrooms should be considered as potential locations where transmission may occur.

A high-risk setting is defined as a setting where there is evidence of a risk for rapid spread and ongoing chains of infection. These include but are not limited to:

- Places where people reside in groups.
- Workplace settings where previous outbreaks have shown large scale amplification.

Note that some of these settings have specific guidance documents². Examples of these settings are provided below.

Within these settings, for the purposes of investigation, an outbreak is defined as:

- A single confirmed case of COVID-19 in a resident, staff member or frequent attendee of a high-risk setting.

This definition does not include a single case in an infrequent visitor of the setting. A determination of whether someone is a frequent or infrequent visitor may be based on frequency of visits, time spent in the setting, and number of contacts within the setting.

² [Aboriginal and Torres Strait Islander rural and remote communities](https://www.health.gov.au/resources/publications/cdna-national-guidance-for-remote-aboriginal-and-torres-strait-islander-communities-for-covid-19) -

<https://www.health.gov.au/resources/publications/cdna-national-guidance-for-remote-aboriginal-and-torres-strait-islander-communities-for-covid-19>

[Residential care facilities](https://www.health.gov.au/resources/publications/coronavirus-covid-19-guidelines-for-outbreaks-in-residential-care-facilities) - <https://www.health.gov.au/resources/publications/coronavirus-covid-19-guidelines-for-outbreaks-in-residential-care-facilities>

[Correctional and detention facilities](https://www.health.gov.au/resources/publications/cdna-guidelines-for-the-prevention-control-and-public-health-management-of-covid-19-outbreaks-in-correctional-and-detention-facilities-in-australia) - <https://www.health.gov.au/resources/publications/cdna-guidelines-for-the-prevention-control-and-public-health-management-of-covid-19-outbreaks-in-correctional-and-detention-facilities-in-australia>

Due to the importance of undertaking early action to minimise transmission within a high-risk setting, PHU should consider advising that the facility should implement some of these actions (see 'steps in investigation' below) where an outbreak is suspected, whilst awaiting laboratory confirmation.

When an index³ case of COVID-19 is identified who likely acquired their infection within the setting (i.e. the case has not left the setting within the previous 14 days), then it is likely that there are already other transmission chains.

High-risk settings – steps in investigation

There are several initial steps that P staff need to take when responding to an outbreak of COVID-19 in high-risk settings. Further details for each step are provided below.

1. Define the setting.
2. Confirm and declare a COVID-19 outbreak with one confirmed case.
3. Identify those most at risk of severe disease.
4. Arrange diagnostic testing for COVID-19 for all members of the setting. If available, consider additional serological tests. If other members of the setting are symptomatic, test these individuals for other respiratory pathogens such as influenza as well as COVID-19.
5. Ensure that the facility managers have notified ALL staff, residents (where applicable) and visitors as relevant, that cases of COVID-19 have occurred in the setting.
6. Advise staff about enhanced implementation of infection control measures. Determine if staff have worked at any other aged care facility or provided in home care in the last 14 days.
7. Collate information onto a line list that describes people infected in terms of time, place and person.
8. In a residential facility, ensure the staff form an outbreak management team that meets within hours of the identification of a case. The team should not be part of day-to-day facility management.
9. Identify and inform relevant internal and external stakeholders.
10. Isolate and treat individuals who test positive. Quarantine, as best as possible, those individuals who test negative and monitor for illness – persons in this group are considered to be susceptible or incubating.
11. Where feasible, commence a program of repeat tests for those (who may be) susceptible or incubating who are in quarantine. This will identify those who are pre-symptomatic to enable rapid removal from the environment.
12. Identify suitable sites where individuals may be cohorted together into either: isolation of the sick OR quarantine the exposed.

Further details about the steps

1. Define the setting

High-risk settings are defined as a setting where there is evidence of a risk for rapid spread and ongoing chains of infection. These include but are not limited to:

³ Index case is the first case reported to a health agency that is part of an outbreak. The primary case is the first case that occurred in the outbreak.

- Places where people reside in groups, e.g.
 - o Residential settings such as aged care facilities, congregate disability accommodation, military residential groups residential, boarding schools, boarding houses, homeless shelters, correctional facilities, remote industrial sites with accommodation, migrant workers accommodation, remote communities.
- Workplace settings where previous outbreaks have shown large scale amplification e.g.
 - o Abattoirs
 - o Hospitals
 - o Nightclubs and bars.

Consider if a smaller defined setting is appropriate.

The context and parameters of the outbreak may enable the definition of the setting to be a defined section of a facility. However, experiences in outbreaks in Australia indicate that at the early stage a broad definition of the setting should be used where possible; this can be scaled back later after further investigation and/or testing.

Any determination of how to define the parameters should consider any movement of staff or residents to other areas (e.g. other wards or blocks), and the potential for cases to have spread to the wider community, e.g:

- A single block of a prison or single unit in a military base
- A dormitory in a boarding school that is well separated from others

In the setting of an aged care facility, a wide definition of the setting is required at the outset because experience of transmission in these facilities is that it has been widespread and the population in the community is at risk of severe disease.

If a smaller setting is defined, the following steps should be instituted for the smaller setting. The decision to define the whole setting versus part of the setting should take into account the size of the community, availability of laboratory testing facilities and contact patterns within the community, including staffing patterns.

2. Confirm and declare an outbreak investigation

An outbreak is declared for a single confirmed case of COVID-19 in a resident, staff member or frequent attendee at the setting.

The rationale for one case being considered an outbreak is to stimulate wider immediate investigation than what may occur through routine case and contact follow-up. A single case is for the purposes of initiating an investigation but may not result in detection of subsequent cases.

Note that an outbreak is not declared if the single case is an infrequent visitor. A determination of whether someone is a frequent or infrequent visitor may be based on frequency of visits, time spent at the setting, and number of contacts within the setting.

3. Identify those most at risk of severe disease

[Using the advice for people at risk of COVID-19](https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/advice-for-people-at-risk-of-coronavirus-covid-19) (https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/advice-for-people-at-risk-of-coronavirus-covid-19) identify and record those at highest risk of severe disease. If it is feasible, immediate quarantine should be implemented for those at risk of severe disease.

Arrange testing for all members of the setting for SARS-CoV-2 and other respiratory pathogens.

When an index⁴ case of COVID-19 is identified who is likely to have acquired his/her infection within that setting (i.e. the case has not left the setting within the previous 14 days, or has had minimal or no contact with others outside of the setting), then it is likely that there are already other transmission chains within the setting. Testing widely should help identify those who may be shedding virus.

Consider if serological tests are available to identify persons previously infected. Note the evidence at the time about whether this indicates the person is immune or considered still susceptible.

4. Ensure that the facility managers notify ALL staff, residents (where applicable) and visitors (if relevant), to the persons in the setting that a case of COVID-19 has occurred in the setting.

Messaging needs to be clear that there is only one case (if applicable), but to be cautious, all members of the setting are being tested. The facility needs to take a strong leadership role with support from the PHU staff. The [Australian Government Department of Health state office](https://www.health.gov.au/about-us/contact-us/state-and-territory-offices) (https://www.health.gov.au/about-us/contact-us/state-and-territory-offices) should be engaged at the start of the outbreak, along with the [Aged Care Safety and Quality Commission](https://www.agedcarequality.gov.au/) (https://www.agedcarequality.gov.au/).

5. Advise staff about enhanced implementation of infection prevention and control measures and develop a process for ongoing IPC observation.

Enhanced infection prevention and control measures are detailed in the Infection Control Expert Group's [COVID-19 Infection Prevention and Control for Residential Care Facilities](https://www.health.gov.au/sites/default/files/documents/2020/05/coronavirus-covid-19-guidelines-for-infection-prevention-and-control-in-residential-care-facilities_0.pdf) (https://www.health.gov.au/sites/default/files/documents/2020/05/coronavirus-covid-19-guidelines-for-infection-prevention-and-control-in-residential-care-facilities_0.pdf). While the advice in these guidelines is tailored specifically to the setting of a residential care facility, the principles and actions can be applied to any setting where there is potential for rapid transmission.

Ensure all staff have completed infection control training, in person or online (COVID-19training.gov.au). Ensure that the facility appoints an IPC audit officer and that this person attends the site daily until the outbreak is over. This person's role should be observing day-to-day practices and providing advice to staff where needed. The IPC audit officer should report daily to the outbreak management team.

6. Collate information.

Collate information onto a line list that describes people infected in terms of time, place and person. If available, a map of the facility (such as are used to identify evacuation points) may be useful to identify case locations. Seek staff rosters for employees who have been nearer the index case. Consider diagrams for chain of infection.

⁴ Index case is the first case reported to a health agency that is part of an outbreak. The primary case is the first case that occurred in the outbreak.

- 7. In a residential facility, ensure the staff form an outbreak management team that meet within hours of the identification of a case. The team should not be part of day-to-day facility management.**

[Guidelines](https://www.health.gov.au/resources/publications/coronavirus-covid-19-guidelines-for-outbreaks-in-residential-care-facilities) about who should be members of this team can be found in the <https://www.health.gov.au/resources/publications/coronavirus-covid-19-guidelines-for-outbreaks-in-residential-care-facilities>

- 8. Identify and ensure the staff inform relevant internal and external stakeholders.**

Because of the extended testing strategy in this outbreak investigation, messaging to other stakeholders such as families in a boarding school or aged care facility is important. Other agencies involved in the oversight of the facility should also be identified.

- 9. Isolate and treat individuals who test positive. Quarantine, as best as possible, those individuals who test negative and monitor for illness.**

Individuals in the quarantine group are considered to be either susceptible or incubating.

- 10. Where feasible, commence a program of repeat tests for those in quarantine (susceptible or incubating persons).**

This will identify those who are pre-symptomatic to enable rapid removal from the environment. Refer to Table 1.

- With each round of testing, those who are PCR positive can be removed to positive cohort isolation wherever possible
- In subsequent rounds, only those who are PCR negative (i.e. those who are susceptible) should be tested.
- Symptom screening should be conducted daily, for the negative (quarantined) cohort.

- 11. Identify suitable sites where individuals may be cohorted together into either: isolation of the sick OR quarantine of those exposed.**

In residential settings, cohort methods of quarantine and isolation, based on symptoms and/or PCR test results, provides residents and staff with a higher level of independence within the setting, and removes barriers to care and support that are presented when individual isolation occurs. It is an important disease control intervention to manage outbreaks.

Furthermore, cohort-based quarantine and isolation for PCR positive residents reduces the amount of single use PPE required. Where possible, closed settings may consider proactive cohorting of staff and residents as an outbreak prevention measure to ensure that if there is an outbreak, it will be limited to a sub-group of residents.

Staff working at a facility with an outbreak should only work within one of the cohorts and not move between those with the disease and those in quarantine. They should not attend work at a different facility (e.g. another aged care setting, university residence) for the duration of the outbreak. Staff should be regularly screened for symptoms in addition to participating in whole of setting testing.

Table 1. Testing and ongoing actions for the individuals in the defined setting.

	Testing overview		Date for quarantine	
	Day 1	Repeat Testing Days (where feasible)	Quarantine Cohort Day 1	Quarantine Cohort On Retest Day/s
Recommended testing and actions	<p>Test all members of the setting via PCR</p> <p>Isolate positive persons (may designate an area to cohort positive cases)</p> <p>Quarantine cohort of negative community members (an off-site quarantine site may suit depending on the setting)</p>	<p>Whom to test Re-test PCR negative cohort where feasible (e.g. 72 hourly) A subset of the quarantined cohort may be re-tested if appropriate.</p> <p>Actions Isolate positive persons Quarantine cohort of PCR negative community members & screen for symptoms</p>	14 day quarantine starts from date that the quarantine cohort are PCR negative	<p>If any of the quarantined cohort are positive:</p> <ol style="list-style-type: none"> 1. Recommence 14-day quarantine period 2. Consider retesting every 72 hours until no new PCR positive tests.

Release from isolation

Release from isolation for cases should be according to the appropriate [release from isolation criteria](#). If the setting involves older Australians, it may be difficult to determine when the person is symptom free because of comorbidity. If it is difficult to identify symptom free days, two negative PCR swabs 24 hours apart indicate the case can be released from isolation.

Consideration of source of introduction of disease (upstream investigation)

This seeks to identify other chains of transmission in the community that may be unrecognised. For further information, see [identification of potential source \('upstream'\) contacts](#).

Staff

Staff working in a facility or community where an outbreak is occurring should not attend work at a different facility (e.g. another aged care setting, university residence) until the outbreak is declared over. Staff should be regularly screened for symptoms and/or tested during an outbreak. PHU should consider this for all staff, including anyone who works on site (e.g. cleaners, visiting staff, contractors, etc.).

All staff should self-monitor for signs and symptoms of acute respiratory illness and self-exclude from work if unwell, even if appropriate PPE has been used.

The setting should maintain a register for all staff and visitors to check for symptoms and the occurrence of fever at the beginning of every shift, in addition to regular visitor register protocols.

Once isolation of infected persons is in place, to further reduce the risk of transmission, specific staff should be allocated to support/care for PCR positive isolated residents. The facility should ensure that staff members:

- Do not move between their allocated room/section and other areas of the facility or care for other residents.
- Follow guidelines for infection prevention and control and correct use of PPE.

Declare that the outbreak is over

Repeat testing allows for close observation of the outbreak and clarity regarding when it can be declared over. In most circumstances, an outbreak can be declared as over 14 days post isolation of the last case.

Once the outbreak is over, PHU should ensure that cluster reports are provided to relevant stakeholders and that data is summarised appropriately.

Healthcare

All healthcare workers should observe usual infection prevention and control practices in the workplace. This includes healthcare workers and other staff in any setting who have direct patient contact.

Healthcare workers with influenza-like illness should not work while they are symptomatic. They should be tested for SARS-CoV-2 and undergo isolation pending results. Healthcare workers who are defined as close contacts should be treated as such (refer to [Management of contacts](#)).

In settings where the loss of the healthcare worker will have a significant impact on health services, an individual risk assessment should be conducted in collaboration with the PHU.

Quarantined healthcare worker close contacts should be advised on the processes for seeking medical care. Refer to [Medical care for quarantined individuals](#).

PHU may assist infection control units of health facilities to identify and monitor healthcare worker close contacts.

It is recognised that clinical work restrictions on close contacts who are healthcare workers may place strain on individuals and on the delivery of health services. This underlines the importance of ensuring healthcare workers implement appropriate infection control precautions when assessing and managing confirmed and suspect COVID-19 cases.

Staff (including Healthcare workers) who have direct patient contact in a hospital or residential/aged care facility.

Healthcare workers and other staff with close patient contact who work in hospitals or residential/aged care facilities should take additional precautions because they come into contact with a high caseload of potentially vulnerable patients.

Healthcare worker exposures in the context of PPE use

Where the healthcare worker (HCW) and/or case are using PPE, a risk assessment should be performed to determine whether the contact should be designated as a close contact and quarantined for 14 days (see Tables 2a and 2b). Factors that may be considered include:

- Case details: presence of symptoms and timing of exposure in relation to symptom onset; high-risk behaviours (e.g. shouting, wandering).
- Contact details: physical distancing, length of exposure time either directly to the case or within a shared closed space.
- PPE: use of PPE by the case and contact, appropriate PPE use and any reports or suspicion of PPE breaches.
- High risk procedures: if aerosol generating procedures were performed.
- Environment: use of shared equipment (e.g. computers on wheels, pagers) and use of communal spaces (e.g. tea rooms, flight decks, work stations).
- Staff mobility: if staff work across multiple facilities or are highly mobile within the facility (e.g. security guards or cleaning staff).

Table 2a. Risk assessment matrix – PPE and type of exposure

		Exposure			
		Aerosol generating procedures	Close contact (refer to Close contact definition for further information)	Environmental contamination and/or working in COVID-19 treatment or testing facility	Casual contact (contact not meeting the Close contact definition)
Contact PPE	No PPE	High risk	High risk	Conduct individual risk assessment	Conduct individual risk assessment
	Surgical mask only	High risk	High risk	Conduct individual risk assessment	Low risk
	Mask and eye protection only	High risk	Conduct individual risk assessment	Conduct individual risk assessment	Low risk
	Other PPE concerns e.g. incorrect doffing	High risk	Conduct individual risk assessment	Conduct individual risk assessment	Low risk
	Appropriate PPE as per latest guidance	Low risk	Low risk	Low risk	Low risk

Note: exposure must have occurred in the period from 48 hours before onset of symptoms in the case (or first positive PCR test if asymptomatic) until the case is deemed no longer infectious. In some high-risk settings, PHUs may opt for a more precautionary approach and use a time period of 72 hours prior to the case's symptom onset (or first positive PCR test if asymptomatic). Refer to [Close contact definition](#) for further information.

Table 2b. Actions following assessments of high or low risk*

High risk	Low risk
<ul style="list-style-type: none"> Quarantine for 14 days as a close contact Test if symptomatic at any time Test upon entry or exit to quarantine as per jurisdictional practices 	<ul style="list-style-type: none"> Continue to work HCW to be alert to mild symptoms Test only if symptomatic or as part of outbreak response

*In circumstances where a risk assessment is indeterminate, it may be appropriate to adopt low risk actions with the addition of testing the HCW, and return of a negative result, prior to continuation of work.

Aboriginal and Torres Strait Islander Communities

CDNA will continue to monitor the emerging evidence around COVID-19 transmission risks in healthcare settings and Aboriginal and Torres Strait Islander communities and revise these recommendations as needed. For further information, refer to the [CDNA National Guidance for remote Aboriginal and Torres Strait Islander communities for COVID-19](https://www.health.gov.au/resources/publications/cdna-national-guidance-for-remote-aboriginal-and-torres-strait-islander-communities-for-covid-19) (<https://www.health.gov.au/resources/publications/cdna-national-guidance-for-remote-aboriginal-and-torres-strait-islander-communities-for-covid-19>).

Key drivers of increased risk of transmission and severity

- **Mobility:** Aboriginal and Torres Strait Islander peoples are highly mobile, with frequent travel often linked to family and cultural connections and community events involving long distances between cities, towns, and communities. In addition, remote communities have a high flow of visitors (e.g. tourists, fly-in fly-out clinicians and other workers). This increases the risk of transmission even in generally isolated communities.
- **Remoteness:** A fifth of the Aboriginal and Torres Strait Islander population lives in remote and very remote areas. There is often reduced access health services, these are usually at capacity in normal circumstances and are often reliant on temporary staff. Limited transport options may further inhibit presentations and delay laboratory testing.
- **Barriers to access:** Unwell people may present late in disease progression for many reasons including lack of availability of services, institutional racism, and mistrust of mainstream health services.
- **Overcrowding:** Many Aboriginal and Torres Strait Islander communities have insufficient housing infrastructure, which results in people living in overcrowded conditions. This facilitates disease transmission and makes it difficult for cases and contacts to maintain physical distance measures and self-quarantine.
- **Burden of disease:** Aboriginal and Torres Strait Islander people experience a burden of disease 2.3 times the rate of other Australians. This may increase the risk of severe disease from SARS-CoV-2.

Key response strategies

- **Shared decision-making and governance:** Throughout all phases, COVID-19 response work should be collaborative to ensure local community leaders are central to the response. Further risk reduction strategies and public health responses should be co-developed, and co-designed, enabling Aboriginal and Torres Strait Islander people to contribute and fully participate in shared decision-making.
- **Social and cultural determinants of health:** Public health strategies should be considered within the context of a holistic approach that prioritises the safety and well-being of individuals, families and communities while acknowledging the centrality of culture, and the addressing racism, intergenerational trauma and other social determinants of health.
- **Community control:** The Aboriginal Community Controlled Health Services (ACCHS) sector provides a comprehensive model of culturally safe care with structured support and governance systems. The network of ACCHS and peak bodies should be included in the response as a fundamental mechanism of engagement and communication.
- **Appropriate communication with the community:** Each community action plan should contain recommendations for communication within the community. These should be implemented as agreed by community-controlled organisations. Messages should be strengths-based and encompass Aboriginal ways of living, including family-centred approaches during both prevention and control phases. They should address factors that may contribute to risk such as social determinants of health, including living arrangements and accessibility to services.

- **Clinical Communication:** Public health officers should immediately alert other health services in the region and the regional town that there is a suspect case (if this is thought likely to be confirmed) or if there is a confirmed case. This should include services in other jurisdictions if there is regular travel between these communities.
- **Education of confirmed and suspect cases:** Suspect cases should be offered education on why isolation is required to protect others and how this can be done within a household as well as social and cultural support. This should be ongoing if the case is confirmed. All contacts should be provided with an explanation of COVID-19, ample opportunity to ask questions; informed about the community response plan including quarantine options and why it is important that they quarantine themselves to protect others.
- **Flexible and responsive models of care:** Consider flexible health service delivery and healthcare models (e.g. pandemic assessment centres, flexible ACCHSs clinic hours/location with additional staffing, and home visits). Consider employing the use of point of care influenza tests, where available, to help determine whether influenza is implicated in presentations in the community.
- **Isolation and quarantine:** Families should feel empowered and be part of decision-making around quarantine. This can be achieved through exploring with families what quarantine looks like, working through how it might impact on the family and their way of living, and identifying ways around it. Family members will want to visit unwell people in hospital. It should be made clear that there are other ways to be with sick family members in hospital, maintain communication with families and communities in lieu of gatherings (e.g. staying socially connected through the internet and video calling).

Residential group settings

Residential care facilities

Outbreaks of COVID-19 in residential care facilities should be managed with close reference to the [Coronavirus \(COVID-19\) guidelines for outbreaks in residential care facilities](https://www.health.gov.au/resources/publications/coronavirus-covid-19-guidelines-for-outbreaks-in-residential-care-facilities) (available at: <https://www.health.gov.au/resources/publications/coronavirus-covid-19-guidelines-for-outbreaks-in-residential-care-facilities>). The guidelines provide specific advice on the prevention, control and public health management of COVID-19 outbreaks in residential care facilities in Australia.

Correctional and detention facilities

Correctional and detention facilities are likely to be at increased risk for significant transmission of COVID-19. This is due to high-density shared living arrangements where inmates are often located in close proximity and logistical and practical difficulties involved in implementing physical distancing. Visitors, inmates and staff moving between the facility and the community, and inmate transfers between facilities, represent potential routes of introducing infection into correctional and detention facilities.

Preventive measures

Consider zoning or cohorting of staff, inmates and essential prison services (e.g. food service, laundry, cleaning) so that if a case occurs, the number of close contacts is a fraction of the people in the facility, not everyone. Correctional and detention facilities should educate staff, inmates and visitors to inform their behaviour and promote preventive measures. Staff, inmates and visitors should be encouraged to self-screen for symptoms, practise good personal hygiene, and practise physical distancing where possible.

If staff or visitors are unwell, they should not enter the facility, and facilities should consider the use of a screening tool for visitors and/or staff. If inmates are unwell with COVID-19 symptoms, SARS-CoV-2 testing should be arranged.

Unwell inmates should be kept separate from others until results are available and/or symptoms have resolved. Facilities should undertake regular environmental cleaning and should ensure hygiene supplies such as soap are readily available for inmates and staff. Precautions should be taken when transferring inmates between facilities and when admitting new inmates to a facility, with screening processes in place. Early detection, testing and isolation of symptomatic inmates is essential. For more information, refer to section 3.2 of the [CDNA National Guidelines for the Prevention, Control and Public Health Management of COVID-19 Outbreaks in Correctional and Detention Facilities in Australia](#).

Outbreaks

Correctional and detention facilities may already have frameworks and protocols in place for testing and isolation in the event of a disease outbreak. Correctional and detention facilities should prepare for and manage outbreaks of COVID-19 with close reference to the [CDNA National Guidelines for the Prevention, Control and Public Health Management of COVID-19 Outbreaks in Correctional and Detention Facilities in Australia](#).

People with disability

Some people with disability will be at greater risk throughout the COVID-19 pandemic. This is due to:

- Risk of more serious illness if infected by COVID-19.
 - There is a high prevalence of comorbidities amongst people with disability, including chronic conditions and weakened immune systems.
 - Additionally, people with disabilities can have unrecognised, untreated or poorly managed physical or mental health conditions.
- Challenges involved in preventative measures.
 - Physical distancing can also be difficult or impossible for some people with disability. This includes those who rely on support and assistance from family members, carers and support workers.
 - Some people with disability also face barriers to implementing basic hygiene measures and safely wearing face masks. These factors put many people with disability and those that support them at higher potential risk of exposure to the virus.
 - Barriers to adequate deep nasal swabs for PCR.

Some people with disability live at home by themselves, others live with family members, or in congregate disability accommodation such as group homes or larger facilities.

Congregate disability accommodation settings are high-risk settings for infectious disease outbreaks due to higher density living, close physical contact between staff and participants, and large number of visitors and staff moving between the community and facilities.

Such settings require increased levels of risk mitigation and support to prevent COVID-19 transmission.

Preventative measures

In addition to usual preventative protocols, congregate disability accommodation should ensure that people with disability and support staff are encouraged to increase their frequency of hand hygiene (with soap and water or using alcohol hand rub), surface cleaning, and to use correct cough/sneeze etiquette. Consideration should be given to the communication and support needs of the person with disability, and reasonable adjustments should be made as required. Information should be provided in accessible formats such as Easy Read and Auslan.

Messaging to discourage unwell visitors from visiting people with disability in congregate accommodation should be reinforced, and care should be taken to ensure unwell staff and volunteers know not to present to work while symptomatic with any infectious condition.

Outbreaks

Outbreaks of COVID-19 in congregate disability accommodation settings should be managed with reference to the [Coronavirus \(COVID-19\) guidelines for outbreaks in residential care facilities](#). The guidelines provide specific advice on the prevention, control and public health management of COVID-19 outbreaks in residential care facilities in Australia, noting that a supplementary appendix is currently being drafted to address the specific needs of smaller residential care homes or congregate disability accommodation settings.

Hotel quarantine

Jurisdictions are recommended to conduct regular testing of staff who work in COVID-19 quarantine and isolation settings who are at risk of exposure to COVID-19. Workers who are at higher risk are recommended to be tested at least every 7 days. The risk of exposure should be determined by those managing the quarantine/isolation setting (e.g. a Public Health Unit).

Routine testing should complement but not replace existing infection prevention and control activities as well as occupational health and safety requirements intended to protect workers, ensure the safety of quarantine facilities and prevent spread of infection from quarantine and isolation settings to the wider community.

Jurisdictions may also determine appropriate methods for routine testing, which may include alternative testing methods (e.g. saliva).

Please see [AHPPC statement on COVID-19: Routine Testing of Hotel Quarantine Workers](#).

Meat processing facilities

Meat (including poultry) processing facilities may present a higher risk of COVID-19 transmission to workers. These workplaces are vulnerable for a number of reasons including, production line work in close proximity to others; limited hygiene measures due to tally driven work; temperature and humidity; and employer sponsored communal housing and transport.

PHUs may assist work health and safety representatives to implement measures aimed at mitigating risk of COVID-19 exposure. Further information on COVID-19 in these facilities is available in Work Safe Victoria's recommendations for [Managing the risk of COVID-19 exposure: meat and poultry processing](#). PHUs may also refer to the US Centers for Disease Control's [Facility Assessment Tool for Meat and Poultry Processing Facilities](#) to conduct an assessment of infection prevention and control within the facility.

7. Special situations

Cruise ships

Risk assessment and identification of contacts

Cruise ships represent a high-risk setting for outbreaks of COVID-19. All persons travelling on cruise ships, regardless of whether cases of COVID-19 have occurred, should be quarantined for 14 days following disembarkation.

Hospital transfer of confirmed or suspect cases

If confirmed or suspect cases on board require transfer to a hospital, the Commonwealth Biosecurity Officer will notify the port authority to provide access for medical transport. The jurisdictional Human Biosecurity Officer will then coordinate transfer of the person to an appropriate medical facility for further management, via the most appropriate means that adheres to necessary precautions.

Quarantine for passengers and crew after arrival at a seaport

All returned travellers are required to quarantine. Returned international travellers, including cruise ship passengers and crew, must adhere to jurisdictional quarantine requirements. States and territories should ensure effective quarantine of returned international travellers, which may include hotel-based quarantine. Matters of quarantine should be addressed jurisdictionally. It is important that appropriate PPE precautions are employed during any travel following disembarkation.

Disembarking and embarking

After all confirmed and suspect cases have been managed appropriately and the Human Biosecurity Officer has determined that no other passengers or crew have symptoms consistent with COVID-19, remaining passengers and crew will be allowed to disembark. The vessel may be permitted to commence embarking once it is certain there is no risk of ongoing transmission.

Air crew

Risk assessment and identification of contacts

Decisions regarding the contact classification of cabin crews can be difficult to determine. On an aircraft with one or more confirmed cases of COVID-19, a case-by-case risk assessment should be conducted by the airline in conjunction with the PHU to identify which crew should be managed as close contacts.

Considerations for conducting a risk assessment should include:

- Proximity of crew to confirmed case
- Duration of exposure to confirmed case
- Size of the compartment in which the crew member and confirmed case interacted
- Precautions taken, including PPE worn, when in close proximity to the confirmed case

When the case is in a crew member, similar principles can be applied to identify passengers and crew who should be managed as close contacts.

Where it has been determined that a crewmember is a close contact, the airline is responsible for notifying the relevant state/territory public health authority to facilitate management of the close contact. For further information, refer to [Appendix B: Risk assessment and identification of close contacts in aircrew](#).

Schools

The best way to prevent transmission of COVID-19 in schools is through the promotion of correct hand hygiene habits and cough/sneeze etiquette. Children or staff with respiratory symptoms should not attend school while symptomatic. If a child or staff member becomes ill with respiratory symptoms, they should be isolated from other students and sent home as soon as possible.

Contact tracing or management of school outbreaks may require temporary full or partial school closures; however, closures are not generally recommended as a reactive measure on public health grounds.

Workplaces

Where a case has physically attended work while infectious, PHUs should conduct a risk assessment of potential workplace transmission in conjunction with workplaces. This may include requesting workplaces to provide a list of all workers who have had contact with an infected worker. Resources for workplaces can be accessed at [Safe Work Australia's COVID-19 information for workplaces](#) or jurisdictional COVID-19 work health and safety guidance.

Contingency capacity strategies for aged and healthcare workforce

Widespread COVID-19 transmission in health or aged care facilities may result in significant workforce shortages due to a large number of exposed (or potentially exposed) staff. Staff may not be able to attend work because they are confirmed cases, close contacts, or furloughed (directed not to attend work) as they have (or potentially have) had unprotected exposure to COVID-19.

In circumstances **where all alternative surge workforce strategies are exhausted** and return to work of furloughed staff is essential to maintaining facility operations and ensuring the safety and wellbeing of individuals (e.g. in health or aged care facilities), PHUs may be requested to assist in decision making processes to help enable exposed staff who are not confirmed cases to return to work. The decision on the requirement for staff who have been identified as having some risk of infection to return to work based on workforce requirements and resultant risk management remains with the facility decision makers.

As a last resort, PHUs could recommend a number of risk mitigation strategies (40). These recommendations should be made on a case by case basis, in addition to routine preventive protocols (e.g. symptom screening, IPC and PPE training) and, in no particular order, could include:

- i. Risk assessment and stratification of workers by degree of exposure, including prioritisation of return to work in staff whose exposure is assessed to be less substantial (e.g. less cumulative duration of exposure to confirmed cases, use of PPE during contact with confirmed cases).
- ii. Regular re-testing of PCR negative returned workers where feasible (e.g. 48 or 72 hourly) until 14 days after the last unprotected exposure; or until a positive result is returned (becomes a confirmed case and is required to isolate).
- iii. Mandatory wearing of a surgical mask while at work until 14 days after the last unprotected exposure. Workers should change their mask throughout the day and only wear it for the maximum period recommended.

- iv. Clear plans for how the worker will be managed within the facility (e.g. zoning staff to a specific wing or ward; caring for specific patients or residents, preferably people from lower risk groups; work in lower risk roles if available; and limiting staff members who can work together).
- v. Clear requirements that, for 14 days from the last unprotected exposure, the worker must only work in one facility and, if a close contact, quarantine at home when not at work.

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Appendices

[Appendix A](#): PHU checklist

[Appendix B](#): Risk assessment and identification of close contacts in aircrew

[Appendix C](#): Information for donor and transplant professionals

[Appendix D](#): Full revision history of the COVID-19 SoNG

Appendix A: PHU checklist

Using the appropriate jurisdictional investigation form or program, contact the patient or their doctor to:

- Confirm the onset date and symptoms of the illness.
- Confirm results of relevant pathology tests, or recommend that tests be done, including repeat tests where relevant.
- Where applicable and feasible, seek the doctor's permission to contact the case or relevant care-giver.
- Review case management including:
 - infection control measures being used in caring for the case, and
 - home isolation procedures are being followed.
- Ensure appropriate infection control measures are followed in caring for the case.

Interview the case or care-giver to complete exposure and contact history and other details

- Complete the exposure history and other sections of the relevant jurisdictional investigation form.
- Identify close contacts according to the contact definition.
- Identify the likely source of infection.
- Determine if the case has attended settings that are at higher risk for infection.

Follow-up case's contacts to:

- Assess risk of COVID-19 transmission and identify any close contacts.
- Determine current symptoms, if any, and manage as a suspect case if present.
- Explain symptoms, advise on active daily monitoring of symptoms by the PHU (close contacts) where feasible and need to immediately report any new symptoms.
- Explain to all close contacts the need for quarantine.
- Provide state based factsheets as appropriate.
- Arrange PCR and serological testing if available and contact is symptomatic, and follow local policy for testing in an outbreak setting. Seek protocol on this from the reference laboratory or central communicable disease agency where necessary.
- For cases in schools, aged care facilities, correctional and detention facilities, and Aboriginal and Torres Strait Islander communities, relevant guidelines should be followed. Refer to [Special risk settings](#) and [Special situations](#) for links to guidelines.

Notify central jurisdictional communicable disease control agency, if they do not already know

Central communicable disease control agency to notify Commonwealth Department of Health Office of Health Protection

Consider need for media release and designate a media spokesperson.

Appendix B: Risk assessment and identification of close contacts in aircrew

These recommendations are intended to assist airlines undertaking risk assessments in consultation with PHUs to identify which air crew are close contacts of a confirmed COVID-19 case. The recommendations relate to the specific circumstance where an ill passenger or crew member has travelled on a flight and potentially exposed other passengers and crew. It is important to note that an infected person may be infectious up to 48 hours prior to onset of symptoms and while symptomatic. Any risk assessment needs to consider that a person may appear well, but still be infectious. This risk assessment is directed at identifying air crew close contacts. Contact management among passengers is the responsibility of public health units.

General principles

- Case-by-case risk assessments should be conducted by the airline in consultation with PHUs to identify close contacts among aircrew where one or more confirmed cases of COVID-19 were present on a flight.
- Risk assessments for air crew should be consistent with criteria for being a close contact:
 - o Face-to-face contact in any setting with a confirmed case, for greater than 15 minutes cumulative over the course of a week, in the period extending from 48 hours before onset of symptoms in the confirmed case;
 - o Sharing of a closed space (i.e. the same air craft section) with a confirmed case for a prolonged period (more than 2 hours) in the period extending from 48 hours before onset of symptoms in the confirmed case; or
 - o Direct contact with the body fluids (e.g. used tissues) of a confirmed case in the absence of wearing recommended PPE or if there was a failure of PPE.
- Risk assessments should be conducted in consultation with the relevant public health unit, particularly where the exposures are unclear or complex.

Considerations for conducting risk assessments

For aircraft crew exposed to a confirmed case, a case-by-case risk assessment should be conducted by the airline to identify which crew member(s) should be managed as close contacts.

Considerations for conducting a risk assessment should include:

1. Proximity of crew to confirmed case
Crew who have had face-to-face contact with an infected passenger for greater than 15 minutes cumulative during the course of the flight should be considered close contacts.
2. Duration of exposure to confirmed case
Crew who provided prolonged periods of in-flight service in the section of the aircraft where the infected passenger was seated should be considered close contacts.
3. Size of the compartment in which the crew and confirmed case interacted
Subject to considerations about aircraft design and airflow patterns, crew who provided in-flight service for greater than 15 minutes cumulative in confined sections (e.g. first or business class) where the infected passenger was seated should be considered close contacts.
4. Precautions taken, including PPE worn, when in close proximity to the confirmed case
Crew who were involved in looking after an infected passenger (e.g. providing first aid) who was ill without wearing appropriate PPE should be considered close contacts.

Cockpit crew who did not walk through cabins or come close to the infected passenger(s) or crew member(s) are not considered to be close contacts.

Where the confirmed COVID-19 case is an aircraft crew member, all crew should be considered close contacts unless there is evidence that they have not had close contact with the case. In this circumstance, public health units will concentrate contact tracing efforts on passengers seated in the area where the crew member worked during the flight along with other members of the crew. The same general principles and considerations detailed above can be adapted to identify close contacts in these circumstances.

If an airline becomes aware that a crew member or passenger is a close contact of a confirmed case, they should notify the local public health unit to facilitate management of the close contact/s.

Appendix C: Organ donation and transplantation

Testing of deceased and living donors and transplant recipients

Viral safety of donated tissue and organs remains a concern as there is significant uncertainty about viraemia during the COVID-19 incubation period; during an asymptomatic course of infection; or after symptom resolution (41-44).

There is currently no licensed test for the screening of blood, plasma or cell and tissue donations. Laboratory screening of blood, plasma, cells and tissues is currently not recommended. This is because transmission of COVID-19 through donated tissues and organs has not been reported; and levels of detected RNA in plasma coinciding with clinical symptoms are very low (41).

To mitigate the risk of transmission through donated organs and to ensure transplantation is conducted as safely as possible, all deceased and living donors should be tested for SARS-CoV-2 with negative results obtained prior to transplantation proceeding; The practice of routine testing of potential recipients of deceased donor organs should be determined by the local transplant unit in consultation with infectious disease clinicians. Transplant teams should have the discretion to proceed prior to test results being available in time constrained circumstances.

Donation should not proceed from deceased individuals in whom there is a clinical suspicion of COVID-19.

For further information, including specific guidance on testing for donors and recipients and when to proceed with donation and transplantation, refer to the [Organ and Tissue Authority, DonateLife and the Transplantation Society of Australia and New Zealand - Coronavirus \(SARS-CoV-2\) causing COVID-19: Information for donation and transplant professionals](https://tsanz.com.au/information/covid-19.htm) available at <https://tsanz.com.au/information/covid-19.htm>

Prioritising samples for testing

Processing of respiratory samples from donors (including all unrelated haemopoietic stem cell donors) and recipients should be prioritised in order to enable expedited retrieval and transplantation processes. Increasing availability of rapid testing may expedite testing timeframes to support time criticalities for deceased donor testing (see [PHLN guidance on laboratory testing for SARS-CoV-2](#)).

Interstate travel for tissue and organ retrieval and transplantation teams

To protect the health and safety of all involved in organ retrieval and transplantation during the COVID-19 pandemic, where possible, local teams should conduct surgical retrieval of organs within the donor hospital. Where this is not possible, organ and tissue retrieval and transplantation teams should not be restricted from interstate travel for the purpose of tissue and organ procurement or delivery.

Quarantine

Asymptomatic donors and recipients without any other epidemiological risk factors are not classified as suspect cases and do not need to be quarantined or isolated following testing, unless a positive test result is received.

Appendix D: Full revision history of the COVID-19 SoNG

Revision history			
Version	Date	Revised by	Changes
4.1	12 January 2020	Communicable Diseases Network Australia	Inclusion of new subsection: Prioritisation of whole genome sequencing for all cases Revised: Case management with inclusion of subsection detailing management of cases infected with a SARS-CoV-2 variant
4.0	23 December 2020	Communicable Diseases Network Australia	Modifications to meet a setting of low prevalence of disease in Australia. Inclusion of new sections: Close contact definitions, Appendix D. Revised: The disease, Routine prevention activities, Case definition, Laboratory testing, Case management, Contact management, Outbreak investigation and management in high-risk settings, Appendix C
3.11	10 December 2020	Communicable Diseases Network Australia	Revised: Summary, The disease, Case definition, Case management, Special risk settings, Appendix A
3.10	28 October 2020	Communicable Diseases Network Australia	Revised: The disease, Laboratory testing, Release from isolation, Contact management, Appendices
3.9	09 October 2020	Communicable Diseases Network Australia	Revised: The disease, Release from isolation, Outbreak investigation and management in high-risk settings, Special risk settings, Special situations.
3.8	23 August 2020	Communicable Diseases Network Australia	Revised: Modes of transmission, Release from isolation, Close contact definition – notes.
3.7	12 August 2020	Communicable Diseases Network Australia	Revised: Enhanced testing. Inclusion of new Special situations sub-section: Workplaces. Inclusion of new Special risk settings sub-section: Meat processing facilities.
3.6	30 July 2020	Communicable Diseases Network Australia	Revised: Case definition – Enhanced testing, Contact management.
3.5	24 July 2020	Communicable Diseases Network Australia	Inclusion of new section: Routine prevention activities. Inclusion of new Laboratory testing sub-section: Procedure for assessing indeterminate and suspected false positive SARS-CoV-2 PCR results.

3.4	01 July 2020	Communicable Diseases Network Australia	Revised: Case definition – suspect case, The disease, Communications, Laboratory testing, Case management, Appendix A, Appendix B, Appendix D. Minor wording changes in other sections.
3.3	22 June 2020	Communicable Diseases Network Australia	Revised: Case definition – enhanced testing, Case management – definition of COVID-19 death
3.2	12 June 2020	Communicable Diseases Network Australia	Revised: Case definition – suspect case clinical criteria.
3.1	04 June 2020	Communicable Diseases Network Australia	Revised: Laboratory testing, Case management – Release from isolation, Contact management.
3.0	28 May 2020	Communicable Diseases Network Australia	Revised: Case definition, Case management, Appendix B. Inclusion of new section: 11. Outbreak investigation and management in high-risk settings.
2.11	22 May 2020	Communicable Diseases Network Australia	Revised: Case definition, Case management, Contact management.
2.10	13 May 2020	Communicable Diseases Network Australia	Inclusion of new sections: Appendix C, Appendix D, Appendix E. Revised sections: The disease, Communications, Case definition – inclusion of serology, Laboratory testing, Case management, Contact management, Special risk settings, Special situations, Appendix A.
2.9	05 May 2020	Communicable Diseases Network Australia	Revised: Case definition – clinical criteria.
2.8	01 May 2020	Communicable Diseases Network Australia	Inclusion of new sections: Summary, The disease, Surveillance, Communications, and Data management. Revised: Case definition, Laboratory testing Case management, Contact management, Special risk settings, Special situations, Appendix A, and Appendix B.
2.7	24 April 2020	Communicable Diseases Network Australia	Revised: Case definition, Case management.

2.6	17 April 2020	Communicable Diseases Network Australia	Revised: Case management, Contact management – Close contact definition.
2.5	06 April 2020	Communicable Diseases Network Australia	Revised: Case definition.
2.4	26 March 2020	Communicable Diseases Network Australia	Inclusion of advice for probable cases throughout.
2.3	24 March 2020	Communicable Diseases Network Australia	Revised: Case definition.
2.2	21 March 2020	Communicable Diseases Network Australia	Revised: Case management – Release from isolation.
2.1	20 March 2020	Communicable Diseases Network Australia	Revised: Case definition, Contact management, Special situations.
2.0	13 March 2020	Communicable Diseases Network Australia	Revised: Case definition, Contact management, Laboratory testing, Appendix A.
1.18	10 March 2020	Communicable Diseases Network Australia	Revised: Case definition, Case management, Contact management. Inclusion of Aircrew and Schools advice in Special situations section.
1.17	05 March 2020	Communicable Diseases Network Australia	Inclusion of self-quarantine advice for returned travellers from South Korea, revised Case management, inclusion of table of contents.
1.16	04 March 2020	Communicable Diseases Network Australia	Inclusion of Aboriginal and Torres Strait Islander community advice in Special situations section.
1.15	03 March 2020	Communicable Diseases Network Australia	Revised: Case definition, Contact management.
1.14	02 March 2020	Communicable Diseases Network Australia	Revised: Case definition, Risk stratification of countries, Contact management.
1.13	28 February 2020	Communicable Diseases Network Australia	Revised: Laboratory testing, isolation and restriction and Appendix A: laboratory testing information.

1.12	27 February 2020	Communicable Diseases Network Australia	Inclusion of Cambodia in the list of countries in the Person under investigation section.
1.11	26 February 2020	Communicable Diseases Network Australia	Inclusion of Italy in the list of countries in the Person Under Investigation section.
1.10	23 February 2020	Communicable Diseases Network Australia	Inclusion of South Korea and Iran in the list of countries in the Person Under Investigation section.
1.9	21 February 2020	Communicable Diseases Network Australia	Revised: case definition, infectious period, contact management, special situation (cruise ship). Specific changes are highlighted.
1.8	17 February 2020	Communicable Diseases Network Australia	Inclusion of statement reflecting that passengers of the Diamond Princess cruise meet the criteria for close contact.
1.7	15 February 2020	Communicable Diseases Network Australia	Revised case definition.
1.6	14 February 2020	Communicable Diseases Network Australia	Addition of Appendix B: Interim recommendations for the use of personal protective equipment (PPE) during hospital care of people with Coronavirus Disease 2019 (COVID-19). Updated nomenclature.
1.5	7 February 2020	Communicable Diseases Network Australia	Inclusion of advice on release from isolation.
1.4	6 February 2020	Communicable Diseases Network Australia	Revised case definition and added rationale. Updated infection control advice throughout.
1.3	4 February 2020	Communicable Diseases Network Australia	Revised the case definition and use of the terms 'quarantine' and 'isolation'.
1.2	2 February 2020	Communicable Diseases Network Australia	Revised the case definition, close and casual contact definitions and added self-isolation guidance.
1.1	27 January 2020	Communicable Diseases Network Australia	Removed references to Wuhan and revised the case definition.
1.0	23 January 2020	Communicable Diseases Network Australia	Developed by the 2019-nCoV Working Group.