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Department for Health and Wellbeing  
CDCB COVID Operations Team

# COVID-19 Personal Protective Equipment (PPE) Decision Matrix

## Protocol

Version 2.4



Government  
of South Australia

SA Health

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## 1. Protocol Statement

The aim of this Protocol is to set out the background and appropriate use of the Personal Protective Equipment (PPE) Decision Matrix.

## 2. Background

COVID-19 is a disease caused by a novel coronavirus, SARS-CoV-2 which was first reported in December 2019 in Wuhan City in China. COVID-19 has spread widely around the world, including to Australia and on 30th January 2020, the World Health Organisation (WHO) declared the novel coronavirus outbreak a public health emergency of international concern, WHO's highest level of alarm.

PPE protects the wearer from infection. Proper use (when worn and selected appropriately) helps keep health workers safe and stops the spread of COVID-19. For information (including those products with Australian Register of Therapeutic Goods (ARTG) entries) regarding the selection and supply of PPE in Australian Healthcare settings, refer to the Therapeutic Goods Administration website.

## 3. Applicability

The PPE advice in this document applies to the management of any suspected or confirmed case of COVID-19 that presents to a hospital or a person who is cared for in a supervised quarantine environment. Note: there is no longer a case definition within the Communicable Diseases Network Australia's (CDNA) guidelines for "probable" COVID-19 and therefore no longer referred to within this Protocol.

The guidance in this document provides PPE advice and applies to:

- > Hospitalised patients, including day procedure areas;
- > All patients in the Emergency Department (ED), outpatient clinics and COVID-19 testing clinics; and
- > Supervised quarantine settings where applicable care setting exists, i.e. Medi-Hotels.

**Note:** Other service providers including Residential Aged Care Facilities (RACF) and SA Ambulance Service (SAAS) should refer to the [SA Health COVID-19 health information web page](#).

The document provides PPE advice and general infection control recommendations relating to COVID-19 including:

- > testing patients for COVID-19;
- > personal protective equipment (PPE) for staff when providing care; and
- > room accommodation for the patient.

### **Geographic areas with significant community transmission of COVID-19**

The advice in this protocol is based on the understanding that currently, South Australia (SA) is not considered to have significant community transmission of coronavirus disease 2019 (COVID-19), and as the situation evolves this document will be updated as required.

In geographic areas with significant community transmission of COVID-19 (as defined by SA Health) and in specified clinical settings, health care workers and others required to wear PPE in the previously identified settings, may need to take extra precautions above those usually indicated for standard and transmission-based precautions.

## 4. Definitions

- > **Donning means:** to put on, in this document this relates to the putting on of PPE.
- > **Doffing means:** to take off, in this document this relates to the taking off of PPE.
- > **Fit check means:** a procedure that must be performed every time a particulate filter respirator (PFR) e.g. P2/N95 respirator or equivalent, is used to ensure it is properly applied. This includes checking that the respirator is sealed over the bridge of the nose and mouth and that there are no gaps between the respirator and face by exhaling and inhaling once a respirator is applied to check the seal. If leaks are detected, then the respirator must be readjusted. Staff must be trained in how to perform a fit check every time a PFR is donned. Staff who wear PFRs must undergo fit testing to determine the PFR which best fits their face and achieves an adequate seal.
- > **Fit test means:** a validated method that determines the brand and size of respirator most suited to the individual's face to achieve an adequate seal. There are two types of facial fit test – qualitative and quantitative:
  - A qualitative fit test is fast and simple but can be influenced by the wearer. It relies on the wearer's senses to determine if there is a gap in the seal of the respirator to the wearer's face. A test agent such as saccharin or Bitrex™ (a bitter tasting substance) is used at a sensitivity level that demonstrates the user will be able to appropriately sense the presence of the test agent within the respirator by taste, smell or the urge to cough.
  - A quantitative fit test requires the use of specialised particle counting equipment (such as a PortaCount™ Plus machine) to provide quantitative, or numerical, measurements of the amount of face seal leakage present when a given respirator is donned by a particular user.
- > **Guest means:** a patient/person who is in quarantine or isolation within a supervised quarantine facility.
- > **PFR means:** particulate filter respirator such as a P2 or N95 respirator or equivalent. A PFR is a medical device designed to protect the wearer from infectious aerosols generated directly from the patient or created during aerosol-generating procedures e.g. bronchoscopy. The respirators generally used in healthcare settings can filter out approximately 94% of particles.
- > **PAPR Powered air-purifying respirator (PAPR):** PAPR are powered air purifying respirators, usually comprised of a battery-operated positive pressure respiratory unit with a filter and face mask or hood. A PAPR uses a power source to drive ambient air through a high-efficiency particulate air (HEPA) filter prior to inhalation by the wearer. PAPRs should be used carefully, including ensuring staff are trained in their correct use and that equipment is selected, maintained and used as per Standard AS/NZS 1715 - Selection, Use and Maintenance of Respiratory Protective Equipment.
- > **Single use face mask (levels 1, 2 or 3 barrier) means:** a loose-fitting, single-use, fluid resistant disposable facemask that creates a physical barrier between the mouth/nose of the wearer and potential contaminants in the immediate environment, as well as reducing the spread of respiratory droplets from the wearer.
- > **Supervised Quarantine Facility:** in this document this relates to Medi-Hotels and where applicable other quarantine facilities that provide care and isolation of those requiring quarantine such as overseas travellers, international students, seasonal workers and others as per current directions or advice.

**Note:** Recommendations and guidelines are subject to change and clinicians are advised to also refer to:

- > [Coronavirus Disease 2019 \(COVID-19\) Communicable Diseases Network Australia \(CDNA\) National Guidelines for Public Health Units \(SoNG\)](#)
- > [Australian Government Department of Health information: Personal protective equipment \(PPE\) for the health workforce during COVID-19](#)
- > [COVID-19 health information and SA Health Public Health Alerts](#)
- > Local Health Network (LHN) policies and procedures, including documented risk assessments and COVID-19 management plans.
- > Supervised quarantine facility Organisation Wide Instructions (OWI) and guidelines.
- > Current [South Australian Emergency Declaration and Directions](#)
- > [SA Health Respiratory Protection Against Airborne Infectious Diseases Clinical Guideline](#)

## 5. Protocol Detail

### 5.1. Introduction

It is important to recognise the signs and symptoms of COVID-19 on presentation. These include fever ( $\geq 37.5^{\circ}\text{C}$ ) or history of fever (e.g. night sweats, chills) OR acute respiratory infection (e.g. cough, shortness of breath, sore throat) OR loss of smell or taste. For full information for other signs/symptoms refer to the CDNA COVID-19 Series of National Guidelines [SoNG](#).

Additionally, asymptomatic COVID-19 has been observed and can occur at any age. High rates of asymptomatic infection have been reported during outbreaks in closed settings (e.g. cruise ships, aged care facilities), or in the context of high community prevalence.

Presymptomatic transmission is well documented. The duration of infectivity before the onset of symptoms is uncertain but limited evidence suggests it can be up to 48 hours.

COVID-19 vaccines are effective against COVID-19; however, effectiveness varies between vaccines, populations and variety of strains. During vaccine implementation it is still currently recommended that preventative measures including PPE and physical distancing are used.

Possible modes of transmission for SARS-CoV-2 can occur through direct, indirect, or close contact with droplets and aerosols. Currently, there is [strong clinical and epidemiological evidence](#) that the predominant mode of spread of COVID-19 is via respiratory droplets (produced during speaking, coughing, sneezing etc). It is noted by the Centres for Disease Control and Prevention within a [scientific brief: SARS-CoV-2 Transmission](#) that transmission by exposure to infectious respiratory fluids occurs in three principle ways:

1. Inhalation of air carrying very small fine droplets and aerosol particles that contain infectious virus. Risk of transmission is greatest within 1.5 metres of an infectious source where the concentration of these fine droplets and particles is greatest.
2. Deposition of virus carried in exhaled droplets and particles onto exposed mucous membranes (i.e., “splashes and sprays”, such as being coughed on). Risk of transmission is likewise greatest close to an infectious source where the concentration of these exhaled droplets and particles is greatest.
3. Touching mucous membranes (e.g. mouth, nose, eyes) with hands soiled by exhaled respiratory fluids containing virus or from touching inanimate surfaces contaminated with virus.

The physical location should also be considered, including whether the environment has low levels of ventilation or unexpected air movements which may facilitate wider distribution of droplets and/or aerosols in the air (e.g. opening of doors between spaces of differential air pressure or temperature).

The infection control advice and associated personal protective equipment (PPE) recommendations in this SA Health Protocol are based on current available guidelines, evidence and clinician advice. This document should also be read in conjunction with the [SA Health Workforce Services Personal Protective Equipment \(PPE\) Selection Policy Guideline](#).

## 5.2. PPE recommendations in geographic areas with significant community transmission of COVID-19

- > In all clinical settings (including supervised quarantine settings), at a minimum use standard precautions, including eye protection and a surgical mask (level 2 or higher). Refer to [Table 2](#) for specific advice based on risk of exposure. Also refer to local health facility advice and OWIs.
- > For routine care of individuals with suspected or confirmed COVID-19, including those who are in quarantine/isolation, at a minimum use contact and airborne precautions PPE requirements i.e. use of PFRs (or equivalent), refer to [Tables 1 & 2](#). It is noted that a negative pressure room may not always be available and clinicians and LHNs should also undertake a local risk assessment to guide patient placement and implementation of other [hierarchy of controls](#).
- > The [NSW Clinical Excellence Commission \(CEC\)](#) recommends extended or sessional use of PPE only when caring for a patient with suspected or confirmed COVID-19. Masks can be worn for a maximum of 4 hours, continuously or uninterrupted for multiple patients without removing the mask unless damaged, soiled or contaminated. The masks and respirators must be discarded if it becomes wet, contaminated, is hard to breathe through or is compromised in any way. HCWs must take care not to touch their facemask or PFR once in position, however if the mask is touched or adjusted hand hygiene must be performed. Refer to the [SA Health COVID-19 Strategies for optimising supply of personal protective equipment \(PPE\) Fact Sheet](#).

For further guidance on the use of PPE by healthcare workers in areas with significant community transmission refer to [Australian Government advice](#).

For further information regarding PPE during NO, LOW or SUSTAINED community transmission, refer to [Tables 1-4](#) in this document and also the SA Health Flow Chart: [ED flow for patients presenting with respiratory illness signs and symptoms during time of No, Low or Sustained community transmission of COVID-19](#).

### 5.2.1. Cardiopulmonary Resuscitation (CPR) of adults in healthcare settings

CPR should not be delayed. Cardiac compressions should commence immediately. Staff should ensure personal safety and wear appropriate PPE. Refer to [National Advice for CPR of adults with COVID-19 in Healthcare Settings and the Community](#).

## 5.3. Patients exhibiting challenging and aerosol generating behaviours (AGB)

There are currently minimum national recommendations for patients exhibiting challenging and or aerosol generating behaviours (AGB), such as shouting, in specified clinical settings and situations based on risk assessment. The [national COVID-19 guidelines](#) recommend that PFRs (i.e. P2/N95 respirators (or equivalent)), should be worn instead of a surgical mask if risk assessment suggests a likely high risk of transmission. This includes the *potential for behaviours that increase the risk of SARS-CoV-2 transmission (e.g. patients/clients/residents with cognitive impairment, are unable to cooperate, or exhibit challenging behaviours, coughing or increased work of breathing)*.

In addition to the above minimum national guidance, SA Health recommends staff wear PFRs for care of suspected or confirmed COVID-19 cases. Refer to [Tables 1-4](#).



## 5.4. General messages regarding PPE

### 5.4.1. Use of PPE

Staff are to use PPE if they:

- > care for someone with suspected or confirmed COVID-19;
- > assess or collect specimens from people who have suspected COVID-19; and/or
- > have contact with people who have fever or other symptoms suggestive of COVID-19.

### 5.4.2. Surgical masks

Provide surgical masks (level 1 is sufficient) to patients/guests to wear (for source control) if they:

- > are under quarantine, isolation or investigation for COVID-19 (including Medi-Hotel arrivals);
- > are suspected or confirmed COVID-19;
- > are from an area intrastate, interstate or overseas considered to have community transmission; and/or
- > have signs and symptoms suggestive of COVID-19.

Staff must assess patients (and guests) at least daily for changes in clinical features during their episode of care, as this may influence clinical management and indications for testing, infection control precautions, isolation, room accommodation and PPE. A risk assessment for indications for PPE should also include consideration of areas with significant community transmission, refer to [Table 3](#).

### 5.4.3. General infection prevention and control principles

Patients should be placed in a level 1 for source control (a level 2 or 3 surgical mask may be used if level 1 not available). Refer to [Tables 1-4](#).

When caring for COVID-19 patients who require AGPs or who are exhibiting aerosol generating behaviours (AGB) (e.g. yelling), airborne precautions must be implemented. For further information regarding AGPs and AGBs, and current PPE advice refer to [Tables 1-4](#).

The careful use of PPE regardless of the risk of COVID-19 should comply with current [Australian Infection Prevention and Control Guidelines](#) and the current Department of Health [COVID-19 advice](#). PPE requirements should also be in accordance with clinical circumstances and risk assessment.

As per routine practices any person presenting for care should be assessed for risk of transmission of infectious agents spread by blood or body fluids by contact, droplet or airborne routes, and the appropriate level of infection control precautions and PPE implemented accordingly.

All staff, students, volunteers, contractors, and others in the healthcare environment must adhere to standard precautions (including the [Five Moments for Hand Hygiene](#)) at all times and transmission-based precautions as indicated.

The patient [environment](#) must be cleaned and disinfected appropriately and any patient care equipment must be [reprocessed](#) according to recommended practices.

Refer to Local Health Network (LHN) and supervised quarantine facility policies and procedures relating to standard and transmission-based precautions including PPE training and fit testing and fit checking requirements.

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#### 5.4.4. Room allocation

- > Suspected or confirmed COVID-19 patients should be placed in a negative pressure room (if available), otherwise a single room with the door closed. If an ensuite bathroom is not available, a dedicated toilet/commode should be used.
- > Supervised quarantine facility placement should be as per local policy and procedures.

#### 5.4.5. Information regarding testing patients for COVID-19

*COVID-19 testing criteria:*

For up to date information on who should be tested for COVID-19 refer to the latest version of the CDNA [SoNG](#), SA Health [Public Health Alerts](#) and SA Health Testing for COVID-19.

**Note:** In certain high-risk outbreak settings, asymptomatic people may be considered for testing. Refer to [SA Health latest advice](#).

#### 5.4.6. Recommended PPE for COVID-19 testing clinics, inpatient settings and EDs

- > For the staff member taking the specimen, use gloves, gown, fit tested and fit checked PFR (P2/N95 respirator or equivalent), eye protection (goggles or safety glasses or a face shield).
- > When extended use of PPE is being considered, refer to the [Strategies for optimising supply of personal protective equipment \(PPE\) fact sheet](#) and local policies / procedures.
- > PPE in supervised quarantine facilities when taking specimens should be as per airborne precautions; including a fit tested and fit checked PFR (refer to local OWIs).

**Note:** Patients presenting to COVID-19 testing clinics who have severe respiratory symptoms or who are clinically unwell, should be referred to an ED for clinical assessment and testing.

#### 5.4.7. PPE general recommendations

PPE can include the following items: gloves, gowns/aprons/coveralls, surgical masks, PFR (P2/N95 respirator or equivalent), powered air-purifying respirators (PAPR), protective eye wear (safety glasses/goggles), full face shields, head covers and shoe covers.

**Note:** PAPR, head and shoe covers are not currently recommended for routine care of COVID-19 patients but can be worn following a local risk assessment by clinicians. Correct donning and doffing and procedures involving the use of any additional PPE must be undertaken.

Eye protection must be worn to protect the mucous membranes of the eyes, this can consist of goggles, safety glasses or face shield.

**Note** protective eye wear (goggles or safety glasses) AND a face shield is recommended when performing AGPs.

##### 5.4.7.1. Nebulisers and other potentially aerosol generating devices

For specific advice on continuous positive airway pressure devices (CPAP) also refer to LHN and supervised quarantine facility local policy and guidelines. NOTE: CPAP and nebulisers are not recommended for use in the Medi-Hotels.

PPE as per airborne precautions is required when performing a respiratory [aerosol generating procedures](#) (AGP) on a suspected or confirmed COVID-19 patient.

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The use of nebulisers in hospitals for COVID-19 patients should be avoided and alternative means of delivering medication (such as pressurised metered-dose inhaler or a spacer) should be used. If the use of a nebuliser cannot be avoided in a patient with suspected or confirmed acute respiratory viral illness (including COVID-19) then:

- > Isolate the patient.
- > Use a negative-pressure room, if available. If not available and there is no alternative, use a single room with the door closed.
- > HCWs administering nebulisers should wear airborne precaution PPE, including impervious gown and gloves, PFR (P2/N95 respirator or equivalent) and protective eyewear.
- > Continue airborne precautions for at least 30 minutes after the nebuliser treatment.

Additional PPE such as head coverings can be considered where a high level of contamination is a risk or when full barrier precautions are recommended e.g. aseptic technique or in operating theatres.

#### **5.4.8. PAPR use is as per clinical risk assessment and LHN policy.**

##### *Donning and Doffing of PPE*

Donning and doffing of PPE must be undertaken in a methodical manner as per the recommended sequence in the [National](#) and [SA Health](#) and local policies or instructions, including appropriate hand hygiene. There should be adequate space for donning and doffing as well as PPE waste disposal areas as per local procedures. Refer to the [SA Health Infection Control and personal protective equipment \(PPE\) advice](#) webpage.

##### **5.4.8.1. Donning of PPE**

PPE must be donned before staff enter the patient room, clinical space or supervised quarantine ZONE.

##### **5.4.8.2. Doffing of PPE**

PPE must be removed safely and in the correct sequence in accordance with the Australian Guidelines for the Prevention and Control of Infection in Healthcare and DoH COVID-19 guidelines, including the removal of eye protection and mask outside the patient's room and then performing hand hygiene.

Further information about donning and doffing of PPE is available on the [SA Health web pages](#).

#### **5.4.9. Information on items of PPE**

##### **5.4.9.1. Use of surgical masks**

Surgical masks are available in various levels ranging from 1-3. For further information regarding the different levels of surgical masks, see the [National Infection Prevention and Control Guidelines](#).

- > For source control, patients and guests with suspected or confirmed COVID-19 should wear a surgical mask (level 1 or above) as long as this is not medically contraindicated (refer to medical advice). Supervised quarantine

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guests must put on a SA Health issued surgical mask before they open their room door to the corridor e.g. for taking of swabs, to collect food or put out rubbish.

- > Persons who have entered South Australia from areas with high community transmission (including those who are required to quarantine or self-isolate) should wear a disposable surgical mask for source control when entering or attending a healthcare facility.

#### 5.4.9.2. Use of PFRs (e.g. P2/N95 respirators or equivalent)

- > For staff providing routine care to non-ICU, non-critically ill patients and who are not performing AGPs – refer to [Tables 1-3](#).

P2/N95 respirators are referred to in National COVID guidelines as [particulate filter respirators](#) (PFR), and this term will be used in the document.

A PFR is an item personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases, or vapours. For further information about P2/N95 respirators (or equivalent), refer to [AS/NZS 1715-2009](#) Selection, use and maintenance of respiratory protective equipment.

Health care workers who wear a PFR must:

- > be [fit tested](#) to identify the PFR that provides an adequate seal and fit.
- > be trained in safe PFR use, including the correct donning and doffing procedures.
- > perform a fit check each time a PFR is donned.

Unless PFRs are used correctly, their effectiveness may be compromised.

PFRs with valves should not be used, as there is a risk of exhaled air, from wearers who are infected, containing viral particles.

Staff should wear a [fit tested and fit checked](#) PFR as per airborne precautions including when:

- > caring for any person with suspected or confirmed COVID-19.
- > in an orange or red zone (Supervised quarantine facilities, airport or an enclosed space with unclear ventilation levels).
- > performing AGPs (see information regarding procedures classified as AGPs see CDNA [SoNG](#)).
- > caring for COVID patients who are ventilated or critically ill patients.
- > caring for patients exhibiting AGB's (For full information regarding AGBs see the CDNA [SoNG](#)).
- > Also refer to [Tables 1-4 in this document](#)

*The difference between a standard and surgical P2/N95 PFR as per the 3M technical advisory is summarised as follows:*

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#### **Standard PFR (P2/N95 or equivalent):**

- > Function: Reduces inhalation of fine airborne droplets by wearer. (P2 = 94% filter efficiency, N95 = 95% filter efficiency, provided a good facial fit is obtained).
- > Application: Use for respiratory protection when wearer might be exposed to particulate hazards, including when performing AGPs.

#### **Surgical PFR (P2/N95 respirator or equivalent):**

- > Function is as per standard PFR (P2/N95 respirator or equivalent), plus provides fluid resistance to prevent strike-through of high velocity fluid exposure.
- > Application: Use during surgery and other tasks during which both of these are true.
- > Healthcare facilities should prioritise use of surgical PFRs for those healthcare workers requiring respiratory protection while performing surgery or other tasks that may expose them to high velocity streams of bodily fluid or conducting work in a sterile field.

The [CDC provides](#) the following advice in relation to surgical PFRs:

*Where a surgical respirator is required but not available, HCWs can use a non-valved standard respirator with a full-face shield to help block high velocity streams of blood and body fluids.*

A face shield is recommended where there is a risk of high velocity fluid strike irrespective of the type of PFR (Standard or Surgical) being used.

**Note:** PFRs are not currently recommended for use by patients or guests.

#### **5.4.9.3. Gowns**

Isolation gowns currently available offer varying resistance to penetration by blood and body fluids depending on the type of material and level of fluid resistance. Currently gowns in Australia are classed as levels 1-4 with level 4 representing the highest level of fluid penetration protection.

For general care of patients with suspected or confirmed COVID-19, the recommended minimum level of protection in the hospital setting is a level 3 gown.

For further information regarding surgical masks and gowns and their application refer to TGA Advice <https://www.tga.gov.au/advice-surgical-masks-and-gowns-during-covid-19>.

For information about other items of PPE see [National Infection Prevention and Control Guidelines](#).

### **5.5. Tables 1-4 provide summarised PPE recommendations for COVID-19:**

- > [Table 1: Patients \*\*WITH\*\* suspected or confirmed COVID-19](#)
- > [Table 2: Patients \*\*WITH\*\* epidemiological risk factors for COVID-19](#)
- > [Table 3: Patients \*\*WITHOUT\*\* epidemiological risk factors for COVID-19](#)
- > [Table 4: PPE recommended for aerosol generating procedures \(AGPs\)](#)

## 5.6. TABLE 1: Patients WITH suspected or confirmed COVID-19

Refer to the [SoNG](#) for definitions of suspected or confirmed COVID-19.

Actions		COVID-19 Routine clinical care	COVID-19 ICU or Critically unwell
Patient PPE (if able to tolerate)		Surgical face mask (Level 1) <sup>#</sup> , when patient moving out of the room or staff moving into the room, hand hygiene, cough etiquette	Surgical face mask (Level 1) <sup>#</sup> , when patient moving out of the room or staff move into the room, hand hygiene, cough etiquette (N/A if intubated)
Aerosol generating procedure is <b>NOT</b> required	Health care worker (or other worker) PPE	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses or a face shield, long sleeved gown, gloves	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses or a face shield, long sleeved gown, gloves
	Room accommodation for patient	Negative pressure room if available, otherwise ^single room – door closed	Negative pressure room if available, otherwise ^single room – door closed
	Restriction on entry to patient's room after the patient leaves	The room should remain vacant for at least 30 minutes, followed by appropriate environmental cleaning. Entry within 30 minutes only by persons wearing a PFR (e.g. P2/N95 respirator or equivalent), long sleeved gown, gloves, face shield or goggles	The room should remain vacant for at least 30 minutes, followed by appropriate environmental cleaning. Entry within 30 minutes only by persons wearing a PFR (e.g. P2/N95 respirator or equivalent), long sleeved gown, gloves, face shield or goggles
Aerosol generating procedure <b>IS</b> Required <b>or</b> the patient is exhibiting aerosol generating behaviours <b>or</b> there is a risk of a high velocity fluid strike to the PFR (e.g. P2/N95 respirator (or equivalent))	Health care worker PPE	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves
	Room accommodation for patient	Negative pressure room if available, otherwise ^single room – door closed	Negative pressure room if available, otherwise ^single room – door closed
	Restriction on entry to patient's room after the patient leaves	Following an AGP, the room should remain vacant for at least 30 minutes, followed by appropriate environmental cleaning. Entry within 30 minutes only by persons wearing a PFR (e.g. P2/N95 respirator or equivalent), long sleeved gown, gloves, face shield or goggles	Following an AGP, the room should remain vacant for at least 30 minutes, followed by appropriate environmental cleaning. Entry within 30 minutes only by persons wearing a PFR (e.g. P2/N95 respirator or equivalent), long sleeved gown, gloves, face shield or goggles

**NOTE:** Also refer to LHN policy and procedures.

Staff who use PFRs must be fit tested and also perform a fit check every time a PFR is donned.

<sup>#</sup>Level 1 surgical masks are suitable for wear by **patients for “source control”**, however if these are not available then substitute with a level 2 or 3 surgical mask

<sup>^</sup>Also refer to [SA Health Bed Management Toolkit for infectious diseases and multi-resistant organisms](#) and [COVID-19 Flow Chart: Emergency Department flow for patients presenting with respiratory illness signs and symptoms](#).

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## 5.7. TABLE 2: Patients WITH epidemiological COVID-19 risk factors

Epidemiological risk factors and possible exposures currently include:

- > Refer to [SoNG](#) information for “persons at increased risk of exposure” including travellers from areas of higher prevalence of COVID-19 (international or domestic), persons caring for, or who come into contact with people positive for COVID-19. This can include workers in health care and aged care, border staff, workers supporting quarantine/isolation services, air and maritime crew. Depending on epidemiological context, other worker groups may also be considered e.g. public transport or retail or other public facing staff.
- > Aged or residential care workers with COVID-19 exposure risk e.g. staff working at sites caring for COVID-19 patients where there has been a suspected or known risk of unprotected exposure Refer to DoH [Working arrangements for the health and aged care workforce during COVID-19](#).
- > Travellers from areas in South Australia, interstate or overseas with increased risk of community transmission. See SA Health [latest updates on COVID-19](#).

Actions		Patients WITH epidemiological risk factors (includes geographical areas with significant community transmission)
Patient PPE (if able to tolerate)		Surgical mask (level 1) <sup>#</sup> , hand hygiene, cough etiquette
Aerosol generating procedure is <b>NOT</b> required	Health care worker (or other worker) PPE	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses or a face shield, long sleeved gown, gloves
	Room accommodation for patient	Negative pressure room if available, otherwise ^single room – door closed
	Restriction on entry to patient’s room after patient leaves	The room should remain vacant for at least 30 minutes, followed by appropriate environmental cleaning. Entry within 30 minutes only by persons wearing a PFR (e.g. P2/N95 respirator or equivalent), long sleeved gown, gloves, face shield or goggles
Aerosol generating procedure <b>IS</b> required <b>and/or</b> the patient is exhibiting aerosol generating behaviours <b>and/or</b> there is a risk of a high velocity fluid strike to the P2/N95 respirator (or equivalent)	Health care worker PPE	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves
	Room accommodation for patient	Negative pressure room if available, otherwise ^single room with the door closed
	Restriction on entry to patient’s room after the patient leaves	Following an AGP, the room should remain vacant for at least 30 minutes, followed by appropriate environmental cleaning Entry within 30 minutes only by persons wearing a PFR (e.g. P2/N95 respirator or equivalent), long sleeved gown, gloves, face shield or goggles

<sup>#</sup>Level 1 surgical masks are suitable for wear by **patients for “source control”**, however if these are not available then substitute with a level 2 or 3 surgical mask.

**NOTE:** Also refer to LHN policy and procedures. Inpatients may require ongoing epidemiological risk assessments during admission e.g. as new exposure sites are identified etc.

Staff who use PFRs must be fit tested and also perform a fit check every time a PFR is donned.

<sup>^</sup>Also refer to [SA Health Bed Management Toolkit for infectious diseases and multi-resistant organisms](#) and [COVID-19 Flow Chart: Emergency Department flow for patients presenting with respiratory illness signs and symptoms](#).

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### 5.8. TABLE 3: Patients WITHOUT epidemiological risk factors for COVID-19

NOTE: During times of community transmission, all patients may be considered suspected COVID-19. Risk assess for areas with community transmission and if identified, refer to [Table 2](#).

Actions		Patient <u>WITHOUT</u> epidemiological risk factors <u>WITH</u> respiratory signs and symptoms	Patient <u>WITHOUT</u> epidemiological risk factors <u>WITHOUT</u> respiratory signs and symptoms
Patient PPE (if able to tolerate)		Surgical mask (level 1) <sup>#</sup> , hand hygiene, cough etiquette	Not required unless patient is required to self-isolate or self-quarantine and/or is in an area with significant community transmission
Aerosol generating procedure is <b>NOT</b> required	Health care worker (or other worker) PPE	Surgical mask (level 2 or 3) long sleeved gown, gloves, face shield or goggles. OR Based on clinician and LHN risk assessment, PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses or a face shield, long sleeved gown, gloves.	Minimum standard precautions and transmission-based precautions as indicated as per usual clinical risk assessment.
	Room accommodation for patient	<sup>^</sup> Single room - door closed. Refer to table 2 if clinician has identified COVID risk factors.	Minimum standard precautions. Transmission-based precautions as per usual clinical risk assessment
	Restriction on entry to patient's room after the patient leaves	No Allocate time for environmental cleaning Refer to table 2 if clinician has identified COVID risk factors.	No Allocate time for environmental cleaning
Aerosol generating Procedure <b>IS</b> required <b>and/or</b> there is a risk of a high velocity fluid strike to the P2/N95 respirator (or equivalent)	Health care worker PPE	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves	Minimum standard precautions and as applicable transmission-based precautions apply.  Also refer to Table 4 for specific procedures that routinely require airborne precautions.
	Room accommodation for patient	<sup>^</sup> Single room - door closed. Refer to table 2 if clinician has identified COVID risk factors.	As clinically indicated.
	Restriction on entry to patient's room after the patient leaves	Following an AGP, the room should remain vacant for at least 30 minutes, followed by appropriate environmental cleaning.  Entry within 30 minutes only by persons wearing a PFR (e.g. P2/N95 respirator or equivalent), long sleeved gown, gloves, face shield or goggles	A minimum of standard and transmission-based precautions apply as applicable.

<sup>#</sup>Level 1 surgical masks are suitable for wear by **patients for "source control"**, however if these are not available then substitute with a level 2 or 3 surgical mask

**NOTE:** Once transmissible infection has been excluded refer to LHN policy and procedures. Inpatients may require ongoing epidemiological risk assessments during admission e.g. as new exposure sites are identified etc.

Staff who use PFRs must be fit tested and also perform a fit check every time a PFR is donned.

<sup>^</sup>Also refer to [SA Health Bed Management Toolkit for infectious diseases and multi-resistant organisms](#) and [COVID-19 Flow Chart: Emergency Department flow for patients presenting with respiratory illness signs and symptoms](#).

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## 5.9. TABLE 4: PPE recommended for aerosol generating procedures (AGPs)

NOTE: The following are examples of AGPs, this list is not exhaustive. Also refer to LHN policy and procedures and the current CDNA SoNG

Staff who use PFRs must be fit tested and also perform a fit check every time a PFR is donned. <b>Procedure</b>	<b>Risk mitigation strategies</b>	<b>Asymptomatic AND NO epidemiological risk factors for COVID-19</b>	<b>Asymptomatic AND risk factors for COVID-19 OR COVID-19 community transmission</b>	<b>Suspected or confirmed COVID-19</b>
<ul style="list-style-type: none"> <li>&gt; Tracheostomy / laryngectomy</li> <li>&gt; Tracheostomy procedures (insertion/open suctioning/removal)</li> </ul>		Surgical mask (level 3), long sleeve gown, gloves, face shield or goggles.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.
<ul style="list-style-type: none"> <li>&gt; Intubation, extubation and related procedures (e.g. manual ventilation/ open suctioning of respiratory tract.</li> <li>&gt; Non-invasive ventilation (NIV) (e.g. Bi-level positive pressure ventilation and continuous positive airway pressure)</li> <li>&gt; High frequency oscillatory ventilation</li> <li>&gt; High flow nasal oxygen</li> </ul>	<p>Appropriate use of (NIV) should be directed by a senior clinician.</p> <p>If CPAP or NIV are instituted in patients with suspected or confirmed COVID a non-vented mask with close fitting seal should be applied and a viral filter applied to the expiratory limb of circuit.</p>	Surgical mask (level 3), long sleeve gown, gloves, face shield or goggles.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.
<ul style="list-style-type: none"> <li>&gt; Cardiopulmonary resuscitation</li> </ul>		Standard precautions with risk-based assessment.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.
<ul style="list-style-type: none"> <li>&gt; Surgical and complex dental procedures that involve the mouth, front of the neck, sinuses, oropharynx or lung</li> </ul>	Minimise high speed drilling where possible.	Surgical mask (level 3), long sleeve gown, gloves, face shield or goggles.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.
<ul style="list-style-type: none"> <li>&gt; Bronchoscopy</li> <li>&gt; Bronchoalveolar lavage (BAL) - also known as bronchoalveolar washing</li> </ul>	<b>Note:</b> Safe Work SA requirements for any Bronchoscopy require surgical P2/N95 respirator (or equivalent) to be worn.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.
<ul style="list-style-type: none"> <li>&gt; Upper gastrointestinal endoscopy where there is suctioning of the upper respiratory tract</li> <li>&gt; Nasoendoscopy</li> </ul>	Endoscopic procedures that require additional insufflation of CO <sub>2</sub> or room air by additional sources should be avoided where possible. This includes many endoscopic mucosal resection and endoluminal procedures	Surgical mask (level 3), long sleeve gown, gloves, face shield or goggles.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.
<ul style="list-style-type: none"> <li>&gt; Induction of sputum for <i>Pneumocystis jirovecii</i> pneumonia (PJP), Tuberculosis (TB) and other pathogens as per clinician decision.</li> </ul>	Do not undertake induced sputum on confirmed COVID-19 positive cases. Discuss need for induced sputum with ID/ Respiratory MO prior to ordering test.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.
<ul style="list-style-type: none"> <li>&gt; Administration of medication via nebulisation</li> </ul>	Avoid, unless no alternative (for example nebulised adrenaline for croup).	Minimum surgical mask (level 3), long sleeve gown, gloves, face shield or goggles Refer to LHN policy.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.	PFR (e.g. P2/N95 respirator or equivalent) with goggles/safety glasses and a face shield, long sleeved gown, gloves.

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## 6. Related Resources

- > Australian Government Department of Health, Coronavirus Disease 2019 (COVID-19), Communicable Diseases network Australia (CDNA) National Guidelines for Public Health Units: <https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm>
- > Australian Government Department of Health, Coronavirus (COVID-19) Infection Control Expert Group Guidance on the use of personal protective equipment for health care workers in the context of COVID 19: <https://www.health.gov.au/resources/publications/guidance-on-the-use-of-personal-protective-equipment-ppe-for-health-care-workers-in-the-context-of-covid-19>
- > Australian Government Department of Health, Coronavirus (COVID-19) Web page: resources for health professionals, including aged care providers, pathology providers and health care managers: <https://www.health.gov.au/resources/collections/coronavirus-covid-19-resources-for-health-professionals-including-aged-care-providers-pathology-providers-and-health-care-managers>
- > Centres for Disease Control and Prevention (CDC) Scientific Brief: SARS-COV-2 Transmission Summary of recent changes (Updates as of May 7, 2021): <https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/sars-cov-2-transmission.html>
- > SA Health Coronavirus disease 2019 (COVID-19): Information for health professionals web page: <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+programs+and+practice+guidelines/infectious+disease+control/coronavirus+disease+2019+information+for+health+professionals/novel+coronavirus+%282019-ncov%29+infection+information+for+health+professionals>
- > SA Health Coronavirus disease 2019 (COVID-19): Infection control and personal protective equipment (PPE) advice web page: <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+programs+and+practice+guidelines/infectious+disease+control/coronavirus+disease+2019+information+for+health+professionals/infection+control+and+personal+protective+equipment+%28ppe%29+advice>
- > Government of South Australia Emergency Declaration and Directions web page: <https://www.covid-19.sa.gov.au/emergency-declarations>
- > NSW Government Clinical Excellence Commission (CEC), Infection Prevention and Control Application of PPE during COVID-19, Version 2.3, August 2020: [https://www.cec.health.nsw.gov.au/\\_data/assets/pdf\\_file/0006/590307/Application-of-PPE-in-COVID-19.pdf](https://www.cec.health.nsw.gov.au/_data/assets/pdf_file/0006/590307/Application-of-PPE-in-COVID-19.pdf)
- > National COVID-19 Clinical Evidence Taskforce, Basic Life Support for Adults in the Community during the COVID-19 Pandemic, Version 1.1, December 2020: [https://covid19evidence.net.au/wp-content/uploads/FLOWCHART-10-CPR-IN-THE-COMMUNITY.pdf?\\_=201021-151716](https://covid19evidence.net.au/wp-content/uploads/FLOWCHART-10-CPR-IN-THE-COMMUNITY.pdf?_=201021-151716)
- > National COVID-19 Clinical Evidence Taskforce, Cardiopulmonary resuscitation of Adults with COVID-19 in Healthcare Settings, Version 1.0, December 2020: [https://covid19evidence.net.au/wp-content/uploads/FLOWCHART-6-CPR-IN-HOSPITAL.pdf?\\_=201021-151723](https://covid19evidence.net.au/wp-content/uploads/FLOWCHART-6-CPR-IN-HOSPITAL.pdf?_=201021-151723)

## 7. Responsibilities

It is the responsibility of COVID Ops Infection Control Service team to update this Protocol.

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