

**Department for Health and Wellbeing
CDCB COVID Operations**

COVID-19 Personal Protective Equipment (PPE) Decision Matrix

Protocol

Version 3.0



**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 COVID-19 Personal Protective Equipment (PPE) Decision Matrix.

Key Message:

When caring for patients with suspected or confirmed COVID-19, wear a PFR and protective eyewear.
Standard precautions continue to be required for all patients, regardless of infectious status.

2. Background

COVID-19 is a disease caused by a novel coronavirus, SARS-CoV-2. PPE helps to protect 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 regarding the selection and supply of PPE in Australian healthcare settings, refer to the [Therapeutic Goods and Administration](#) website and SA Health policies.

3. Applicability

The PPE advice in this document applies to the healthcare management of any suspected, probable or confirmed case of COVID-19 who presents to any healthcare facility or service which may include hospitals, outpatient clinics or testing clinics. Also refer to local policies and procedures including work health and safety requirements. Note - recommendations and guidelines are subject to change. Clinicians are advised to also refer to:

- Australian Government [Infection Prevention and Control Expert Group \(ICEG\)](#) webpage
- National Health and Medical Research Council Australian [Guidelines for the Prevention and Control of Infection In Healthcare](#)
- SA Health [Personal Protective Equipment \(PPE\) Selection Policy Guideline](#)
- SA Health [Respiratory Protection Against Airborne Infectious Diseases Clinical Guideline](#)

4. Protocol Detail

4.1. General Infection Prevention and Control Principles

PPE is one element of healthcare worker (HCW) protection in the hierarchy of controls model for managing workplace risk. 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 (or e.g. opening of doors between spaces of differential air pressure or temperature).

Suspected, probable or confirmed COVID-19 patients should be placed in a negative pressure room (if available), otherwise single room with the door closed. If an ensuite is not available, a dedicated toilet/commode should be used. In facilities where there is limited access to negative pressure or single rooms cohorting may be considered following a risk assessment. Refer to the SA Health [Bed Management Toolkit: For infectious diseases and multi-resistant organisms](#).

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

Refer to local policies and procedures relating to standard and transmission-based precautions including PPE training and fit testing and fit checking requirements.

4.2. Routes of Transmission of COVID-19 and PPE Selection

Airborne transmission has been recognised as the dominant route of transmission of COVID-19. However, droplet and aerosolised infectious particles can also contaminate surfaces close to the source

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patient and can potentially be transferred to others by contamination of staff hands, skin or clothing¹. While emerging evidence indicates it is possible for people to be infected through contact with contaminated surfaces or objects (fomites), the risk is generally considered to be low³.

At a minimum, staff must adhere to airborne and standard precautions. The addition of contact precautions (i.e. use of gown and/or gloves) may be required based on an assessment of the risk of exposure of staff skin and clothing to blood, body substances, secretions or excretions².

Standard precautions are part of a risk based approach and to be used at all times for all patients to minimise the risk of transmission of infectious agents. Standard precautions by definition require a risk assessment for each patient and must be applied when caring for any patient regardless of their infectious status. Staff should comply with the SA Health [Hand Hygiene Policy Directive](#) noting that gloves do not negate the need for hand hygiene.

PPE and Room Management for Patients with Suspected, Probable or Confirmed COVID-19

Definitions:

- Probable or confirmed - refer to the current [Coronavirus CDNA Guidelines for Public Health Units Series of National Guidelines](#).
- Suspected - patients presenting with symptoms consistent with COVID-19 during times of sustained community transmission or those who are deemed close contacts.

Notes:

- At a minimum, PPE and room management as per airborne and standard precautions are required.
- Cough etiquette (N/A for patient if intubated) and hand hygiene applicable to both staff and patient.

Table 1:
PPE and Room Management for Patients with Suspected, Probable or Confirmed COVID-19

Wearer of PPE	Recommended PPE
Patient (if able to tolerate)	Surgical mask (Level 1) [#] when the patient moves outside of the room <u>and/or</u> when other people are present in the room (e.g. staff and visitors)
Staff	Airborne <u>and</u> standard precautions at a minimum. This includes the use of respiratory [^] <u>and</u> eye protection* The addition of contact precautions (e.g. gown and gloves) may be required based on assessment of the risk of exposure of staffs' skin and clothing to blood, body substances, secretions or excretions ² or if the patient has a multi-resistant organism or when performing AGPs or the patient is exhibiting AGBs
Room Management	Actions and Recommended PPE
Negative pressure room if available <u>or</u> single room with door closed	Cleaning can occur immediately after the patient is transferred or discharged providing staff entering the room wear recommended PPE as above The room can be reused after cleaning has occurred and all surfaces and equipment are touch dry

[#]Level 1 surgical masks are suitable for patients to wear for source control, however if these are not available then substitute with a level 2 or 3 surgical mask.

¹ National Health and Medical Research Council, *Australian Guidelines for the Prevention and Control of Infection in Healthcare*, 2019, p. 96

² National Health and Medical Research Council, p 108

³ Centers for Disease Control and Prevention, *Science Brief: SARS-CoV-2 and Surface (Fomite) Transmission for Indoor Community Environments*, 2021.

^Respiratory protection is defined as a particulate filter respirator (PFR) e.g. P2/N95 respirator or equivalent. There are two types of PFRs, standard and surgical (fluid resistant), refer to the SA Health [Respiratory Protection Against Airborne Infectious Diseases Clinical Guideline](#). Staff using a PFR must be fit tested and also perform a fit check every time a PFR is donned as per [Australian Standard AS/NZS 1715-2009](#).

*Eye protection is defined as goggles **or** safety glasses **or** a face shield. If there is a risk of a high velocity fluid strike and a surgical PFR is not being worn, then a face shield should be worn. Also refer to local policy and procedures.

Note: Powered air purifying respirators (PAPR) may be considered as an alternative to a PFR in selected circumstances based on a risk assessment and with appropriate education on safe use including reprocessing.

Head and shoe covers are not currently recommended as a part of minimum PPE for routine care of COVID-19 patients but can be worn following a local risk assessment by clinicians. Correct education in donning and doffing procedures involving the use of any additional PPE must be undertaken.

4.3. Aerosol Generating Procedures (AGPs) and Aerosol Generating Behaviours (AGBs)

The following are examples of AGPs and AGBs, this list is not exhaustive. 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). Also refer to LHN policy and procedures and [ICEG guidelines on the use of face masks and respirators in the context of COVID-19](#).

PPE recommendations for AGPs and AGBs are as per [Table 1](#) i.e., **standard** and **airborne precautions**. The addition of **contact precautions** is recommended when performing AGPs and managing AGBs.

Table 2: Examples of AGPs and AGBs and Risk Mitigation Strategies Additional to PPE and Room Management

Aerosol Generating Procedures/Behaviours	Risk mitigation strategies in addition to recommended PPE and room management actions
> PCR or RAT collection	Nil additional
> Tracheostomy/laryngectomy > Tracheostomy procedures (insertion/open suctioning/removal)	Nil additional
> Intubation, extubation, mechanical ventilation (especially if a closed circuit is not maintained) and related procedures (e.g. manual ventilation/open suctioning of respiratory tract) > Non-invasive ventilation (NIV) (e.g. Bi-level positive pressure ventilation and continuous positive airway pressure) > High frequency oscillatory ventilation > High flow nasal oxygen	Appropriate use of NIV should be directed by a senior clinician If CPAP or NIV are instituted in patients with suspected or confirmed COVID-19 a non-vented mask with close fitting seal should be applied and a viral filter applied to the expiratory limb of circuit
> Cardiopulmonary resuscitation	Nil additional
> Surgical and complex dental procedures that involve the mouth, front of the neck, sinuses, oropharynx or lung	Minimise high speed drilling where possible
> Bronchoscopy > Bronchoalveolar lavage (BAL) - also known as bronchoalveolar washing	Note: Safe Work SA requirements for any Bronchoscopy require surgical PFR (P2/N95 respirator or equivalent) to be worn

Aerosol Generating Procedures/Behaviours	Risk mitigation strategies in addition to recommended PPE and room management actions
<ul style="list-style-type: none"> > Upper gastrointestinal endoscopy where there is suctioning of the upper respiratory tract > Nasoendoscopy 	Endoscopic procedures that require additional insufflation of CO ₂ or room air by additional sources should be avoided where possible. This includes many endoscopic mucosal resection and endoluminal procedures
<ul style="list-style-type: none"> > Induction of sputum for <i>Pneumocystis jirovecii</i> pneumonia (PJP), Tuberculosis (TB) and other pathogens as per clinician decision 	Do not undertake induced sputum on confirmed COVID-19 positive cases Discuss need for induced sputum with infectious diseases/respiratory medical officer prior to ordering test
<ul style="list-style-type: none"> > Administration of medication via nebulisation 	Avoid, unless no alternative (for example nebulised adrenaline for croup)
<ul style="list-style-type: none"> > Aerosol generating behaviours may include singing, shouting, coughing, heavy breathing e.g. labouring 	Patient to wear a surgical mask, if tolerated

5. Responsibilities

It is the responsibility of CDCB COVID Operations to update this Protocol.

6. Related Resources

- Australian Government [Infection Prevention and Control Expert Group \(ICEG\)](#) webpage
- Australian Standards [AS/NZS 1715-2009](#) Selection, use and maintenance of respiratory preventative equipment
- Communicable Diseases Network Australia [Coronavirus National Guidelines for Public Health Units](#)
- National Health and Medical Research Council [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#)
- [Safe Work SA](#) webpage
- SA Health [COVID-19: Information for health professionals](#) webpage
- SA Health [Environmental hygiene in healthcare](#) webpage
- SA Health [Personal Protective Equipment \(PPE\) Selection Policy Guideline](#)
- SA Health [Prevention and responding to work related exposure to infectious diseases](#) policy guidelines
- SA Health [Respiratory Protection Against Airborne Infectious Diseases Clinical Guideline](#)
- SA Health [Staff protection from infections](#) webpage
- SA Health [Bed Management Toolkit: For infectious diseases and multi-resistant organisms](#)
- SA Health [Hand Hygiene Policy Directive](#)

For more information

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