2

Strategies to prevent or minimise transmission of ARIs

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2.1 Introduction

Effective infection prevention and control (IPAC) is essential to safeguarding patients, visitors and health workers from acute respiratory infections (ARIs). This chapter outlines the core principles, responsibilities and practical measures that underpin a coordinated and consistent IPAC approach across NSW Health.

It provides clear guidance on applying standard and transmission based precautions, managing exposure risks and supporting safe clinical environments to ensure healthcare services remain resilient and responsive as epidemiological conditions evolve.

2.2 Safe working principles

This section outlines the principles of safe work practices and the hierarchy of controls as applied to IPAC in acute and non-acute healthcare settings.

Legal and regulatory framework

Work-related risk, including exposure to communicable diseases, is managed under the Work Health and Safety Act 2011, its associated Regulations, and the Model Code of Practice: How to manage work health and safety risks. The Act requires all Australian workplaces to assess and manage risks 'so far as is reasonably practicable'.

This obligation includes the identification, assessment and control of risks related to infectious agents in healthcare environments.

Hierarchy of controls

Controlling exposure to occupational hazards is the primary strategy for protecting health workers, patients and visitors. The hierarchy of controls is a structured approach that ranks risk mitigation strategies from most to least effective:

1. Elimination: Remove the hazard entirely (for example, remote consultations to avoid exposure).
2. Substitution: Replace the hazard with a safer alternative (less applicable in infectious disease control).
3. Engineering controls: Isolate people from the hazard (for example, ventilation systems, physical barriers).
4. Administrative controls: Change the way people work (for example, infection prevention and control protocols, training, rostering).
5. Personal Protective Equipment (PPE): Use protective gear (for example, masks, gowns, gloves).

Multiple control strategies are often implemented simultaneously or sequentially to maximise protection.

Application in healthcare settings

Infection prevention and control programs must integrate the hierarchy of controls with standard and transmission-based precautions. This includes:

- Risk assessments tailored to specific clinical environments.

- Controls that reflect the nature of the pathogen, the vulnerability of the population, and the physical layout of the facility.
- Ongoing review and adaptation of control measures to ensure effectiveness.

2.3 Principles of risk assessment in the context of ARI

A risk-based approach is essential for guiding IPAC decisions in healthcare settings, particularly in the selection of personal protective equipment (PPE) and the implementation of transmission-based precautions.

This approach considers multiple factors, including:

- Time and duration of exposure
- Proximity to the patient
- Nature of the procedure or task
- Patient vulnerability (for example, immunocompromised, transplant recipients, or those under protective precautions).

Key risk assessment parameters

Risk assessment should evaluate the likelihood and impact of infection transmission, considering:

- Transmissibility of the pathogen
- Severity of illness and potential impact
- Patient-specific factors
- Health worker (HW) risk factors
- Procedure-related risks
- Environmental conditions.

Applying a risk-based approach

The following steps support a structured assessment:

1. Identify the risk. Recognise tasks or behaviours that increase transmission risk, such as:
   - Aerosol-generating procedures (AGPs)
   - Patient symptoms such as aerosol generating behaviours (coughing, laboured breathing, behavioural factors such as agitation or shouting).
2. Determine likely transmission routes. Assess type of exposure:
   - Non-parenteral: Contamination of mucous membranes (eyes, mouth) or non-intact skin.
   - Parenteral: Introduction of body substances via piercing or puncturing
3. Quantify the impact
   - Intensity of exposure: How close the health worker is to the patient
   - Duration of exposure: How long is the health worker in contact with patient.
4. Assess need for mitigation
   - Determine whether the risk requires mitigation or can be reduced/eliminated.
5. Implement mitigation strategies. Examples include:
   - Use of single rooms or negative pressure environments
   - Application of standard and transmission-based precautions

- Appropriate PPE selection based on risk level.

For detailed guidance on risk assessment, refer to the CEC Infection prevention and control practice handbook.

2.4 Early recognition of patients with suspected ARI

Early recognition, identification, isolation, reporting of ARIs and application of source control (including respiratory hygiene) are central to effective containment and management of any communicable diseases and essential to maintaining the health and well-being of health workers, patients/clients and the community.

For more information refer to NSW Health Influenza control guideline and NSW Health Respiratory syncytial virus (RSV) control guideline.

The national case definition for COVID-19 is provided by Communicable Diseases Network Australia (CDNA) Coronavirus (COVID-19) – CDNA National Guidelines for Public Health Units. Case definitions may change over time based on a variety of factors, including current epidemiology and testing capacity. Check the NSW Health website for advice on latest case definitions and testing criteria.

Clinical testing of patients with compatible symptoms or epidemiological risk factors remain important for patient care.

Surveillance testing

Surveillance testing can be an important tool to support IPAC in healthcare settings but is usually only considered in an outbreak situation or when there is widespread community transmission.

ARI testing thresholds should reflect the level of community transmission. When transmission is elevated, clinicians should maintain a low threshold for testing patients presenting to the Emergency Department or admitted to hospital with compatible symptoms.

During periods of widespread community transmission or throughout the winter respiratory virus season, broader testing of hospital patients may be required. Additional guidance is available in Appendix 2A: Testing for Acute Respiratory Infection.

Individuals who meet the criteria for close contact with a confirmed case may still benefit from SARS CoV 2 testing, depending on the risk of severe illness from COVID-19. Refer to NSW Health COVID-19 testing for more information.

For guidance on IPAC considerations when collecting respiratory specimens, refer to the Coronavirus (COVID-19) - CDNA National Guidelines for Public Health Units.

2.5 Application of infection prevention and control principles

When applying infection prevention and control principles, three main levels of control must be considered.

The ***first level*** consists of administrative controls, which are measures taken to ensure the entire system is working effectively. These controls include:

- Implementing procedures for triage of patients
- Detecting infections early
- Separating infectious patients from others
  - Consideration for the establishment of cohort areas/zones within the functional clinical areas to separate infectious patients from others

  - Consideration for the concept of 'ring fencing' (for example, identifying a designated boundary or a zone for co-locating these patient groups) for potential high-risk patients such as high-risk surgery and immune suppressed patients
- Transporting patients safely
- Educating patients, carers and HWs
- Designating responsibilities clearly and correctly
- Communicating with all relevant partners.

The following zone classification system can be used during an ARI, including COVID-19, or any other communicable disease outbreak or pandemic, designated patient care areas may be established and divided into different zones.

This zone classification system supports patient placement and the management of patients and staff according to their diagnosis, exposure risk, or clearance status. Each zone reflects a different level of risk and informs the appropriate clinical management and transmission-based precautions.

Table 3 Example of patient zoning

Zone	Description
Red	For patients with a confirmed diagnosis
Amber	For patients with a suspected cases or high-risk contacts
Green	For patients who are cleared of relevant cases or are a contact
Blue	For staff only

Environmental and engineering controls

The ***second level*** is environmental and engineering controls, including cleaning of the environment and the ventilation of spaces.

Environmental and engineering controls are an integral part of IPAC that includes standards for adequate ventilation according to specific areas in healthcare facilities, adapted structural design, spatial separation, as well as adequate environmental cleaning.

Heating, ventilation and air-conditioning (HVAC) design in Australian healthcare facilities is regulated through the following guidelines:

- Australasian Health Facility Guidelines (AusHFG)
- NSW Health Building guidelines
- AS 1668.2:2024 - The use of ventilation and air conditioning in buildings Mechanical ventilation in buildings
- HB 260-2003 Hospital acquired infections – Engineering down the risk
- Engineering Services (GL2023_009).

There are three methods that may be used to ventilate spaces within healthcare facilities, natural (fresh air), mechanical, and hybrid, or mixed mode ventilation.

Each ventilation system has advantages and disadvantages and any modifications to healthcare ventilation need to be made carefully, taking into consideration the cost, design, maintenance and potential impact on airflow in other parts of the healthcare facility.

For more information refer to Infection prevention and control practice handbook, *Chapter 6, section 6.12 Recirculating air filtration device use*.

Ventilation requirements for airborne precautions

Room placement of patients should ideally be in a negative pressure room with anteroom. Where not available, a standard isolation room or a single room where there is negative airflow with air conditioning or external exhaust air handling system (refer to facility engineering service) is an acceptable alternative.

Rooms with positive pressure airflow must be avoided. Other design types require additional risk assessment (Australasian Health Facility Guidelines, Part D: Infection Prevention and Control).

Where single rooms are not available, confirmed ARI patients may be cohorted based on additional risk assessment and management using local facility procedures as guidance.

Ensure ventilation systems operate properly and provide acceptable indoor air quality for the occupancy level for each space.

- A room with ≥12 air changes per hour (ACH) [equivalent to ≥80 L/s for a 4×2×3 m3 room] and controlled direction of air flow is recommended for airborne precautions
- In addition to the requirement of ≥12 ACH, in a mechanically ventilated airborne precaution room, negative pressure (class N) is required to control the direction of air flow.

The ***third level*** of control to further decrease the risk of transmission is personal protection using appropriate personal protective equipment (PPE) such as masks, respirators and eye protection.

When implementing infection prevention and control principles in healthcare settings, all levels of controls (administrative controls, environmental and engineering controls and personal protection) must be given correct attention for the system to work effectively and for the different levels to support each other.

2.5.1 Advice for patients with an ARI

Patients with any ARI symptoms are encouraged and supported to wear surgical face mask (excluding paediatric patients <12yrs) providing it is tolerated and not detrimental to their medical or care needs. This is to minimise the dispersal of respiratory secretions and reduce both direct transmission risk and environmental contamination.

- A surgical mask should be worn by patients where clinically appropriate and where it does not interfere with their care or treatment.
- A surgical mask can be worn until it is damp, moist, damaged or uncomfortable for the wearer.
- Once the patient is isolated in a single room, they do not need to routinely wear a mask.
- Patients are to be encouraged to perform hand hygiene before leaving their room.

2.5.2 Respiratory hygiene and cough etiquette

The following measures to contain respiratory secretions are recommended for everyone. Health workers are to provide education to patients/clients on:

- Covering the mouth and nose with a tissue when coughing or sneezing.
- If a tissue is not available, cough or sneeze into the elbow.
- Use the nearest bin to dispose of the tissue after use.
- Perform hand hygiene. For example, hand washing with soap and water for 20 seconds or use alcohol-based hand rub (ABHR) after coughing or sneezing or if contaminated objects, materials or equipment are touched.

The following should be available in waiting areas for patients and visitors:

- Relevant signage and education resources/posters.
- Disposable surgical masks.
- Tissues and no-touch receptacles for used tissue disposal.
- Conveniently located dispensers of ABHR, where sinks are available, ensure that supplies for hand washing (such as soap, disposable towels) are always available.

Posters are available at NSW Health COVID-19 poster and print resources.

2.5.3 Application of standard precautions

Standard precautions are the essential IPAC measures that apply to all patient or client care, regardless of whether an infection is known or suspected. They are required wherever healthcare is delivered or where exposure to blood or body substances may occur. This includes hospitals, subacute facilities, community care, home care and mortuaries.

Health workers must follow hand hygiene practices as outlined in the National Hand Hygiene Initiative and clinical procedures require a bare below the elbow approach to comply with asepsis and the Infection prevention and control in Healthcare Settings (PD 2023_025).

Before selecting IPAC strategies, health workers are to conduct a risk assessment. This includes evaluating:

- The nature of the patient interaction
- The likelihood of transmitting infectious agents
- The risk of exposure to blood, body substances, secretions or excretions
- The anticipated duration of PPE use
- Appropriate patient placement or cohorting.

Risk assessments should also consider patients who may require additional protective measures, such as those who are immunocompromised, have immunodeficiencies or have undergone transplantation.

These evidence-based practices aim to protect both patients and health workers while preventing the spread of infection across all care environments.

For more information refer to the Infection prevention and control practice handbook.

2.5.4 Implementation of transmission-based precautions

Transmission-based precautions are required when standard precautions alone cannot prevent the spread of a microorganism, based on its known or suspected mode of transmission. Respiratory protection devices form an important part of IPAC; however, as PPE sits at the lowest level of the hierarchy of controls, these devices should be viewed as the last line of defence. For more information on standard and transmission based precautions refer to Infection prevention and control practice handbook.

2.5.5 Extended or sessional use of PPE

Extended (or sessional) use of PPE refers to wearing the same above the neck PPE such as masks, respirators and eye protection for repeated close contact care with multiple patients without removing it between encounters, based on a risk assessment. Hand hygiene must still be performed between each patient interaction. Extended or sessional use is only recommended during a

pandemic when caring for patients with suspected or confirmed COVID-19 or cohorts of patients with influenza.

In the setting of a pandemic there may be supply challenges with demand and availability of consumables, temporary sessional PPE use may be considered. It is not appropriate for other infectious conditions.

Extended or sessional use is only recommended during a pandemic when caring for patients with suspected or confirmed COVID 19 or cohorts of patients with influenza. It is not appropriate for other infectious conditions (for example, multidrug resistant organisms) and evidence continues to show increased risk of healthcare associated infections when gowns and gloves are not changed between patients. Key considerations include:

- Extended use of masks/respirators and eye protection is suitable when caring for cohorted patients in dedicated clinical areas.
- Decisions must be guided by a risk assessment, clinical context, local facility needs and consultation with the IPAC team.
- A ***session*** refers to the period a health worker remains in a specific clinical area; it ends when leaving the area, when PPE becomes contaminated or when the worker needs food or drink.
- Surgical masks and P2/N95 respirators may be worn for extended periods (typically up to several hours) where clinically appropriate, subject to manufacturer IFU and earlier replacement if damaged, soiled, moist, contaminated or if fit or comfort is compromised.
- Gowns and gloves must be changed between patients and must be removed before exiting the room. Hand hygiene must be performed immediately after removing PPE. Limited exceptions apply only for minimal contact tasks (for example, meal tray collection). Gloves must always be changed between patients.

2.5.6 Brining your own PPE

Health workers must ***not*** bring personal PPE whether reusable or disposable into any health facility unless it has been formally approved by the local facility, LHD/SHN and/or NSW Health. Approval requires careful consideration of safety, standards and operational impacts.

Key requirements include:

- Verification of availability through HealthShare NSW.
- Ensuring the PPE meets AS/NZS standards and is ARTG listed, with documentation supplied by the manufacturer.
- Formal approval from the relevant clinical department, hospital leadership and LHD/SHN executive (PPE Strategic Committee), following HealthShare NSW procurement processes.
- A fully documented assessment covering:
  - Review and acceptance by IPAC, WHS, biomedical engineering, unit management and sterilising services, including compatibility and reprocessing risk assessments.
  - Manufacturer's instructions for reprocessing, filter management, maintenance and availability of replacement components (for example, straps, valves, filters, cartridges).
  - Insurance coverage for privately owned PPE requiring reprocessing.
  - Documented training and competency for safe use, including clarity on who provides and oversees training.
  - Review of donning and doffing procedures to ensure safety with non-standard equipment.
  - Assessment of financial, storage and resource implications, including capacity for reprocessing.

For more details on the management of reusable respiratory protection devices see CEC Respiratory Protection Program Manual.

2.5.7 Skin sensitivity related to mask use

Prolonged use of masks, respirators and eye protection can lead to a variety of skin issues. The following guidance focuses on reducing skin irritation associated with disposable surgical masks and respirators. For advice on prophylactic dressings under tight fitting respirators, see CEC Respiratory Protection Program Manual.

Facial skin care to reduce irritation

The following strategies can help minimise skin irritation and pressure injuries associated with prolonged mask use:

- Cleanse and moisturise with mild, non-fragranced products.
- Avoid glycolic acids or retinoids which may compromise the skin's barrier.

Fitting and skin sensitivity

- Perform hand hygiene before putting on and after removing a mask.
- Choose the best-fitting mask or respirator (where fit-tested) and take time to apply it correctly to ensure comfort and seal without excessive pressure.

Wearing a mask when skin is sensitive

Use your usual morning and evening moisturising routine. Before putting on a mask, apply a silicone-based barrier product with clean hands and allow to dry. Regular skin breaks may help in reducing skin reactions.

During the shift minimise mask wearing time where safe and give the skin regular breaks and ensure good hydration.

If friction occurs:

- Apply moisturiser 30 minutes before mask use.
- Use silicone barrier films or light silicone based products.
- Avoid greasy barrier creams if acne prone.

Allergic reactions

True allergies to mask components are rare; irritation is more common. Monitor areas where reactions may occur:

- Glue strip along the nose
- Metal nose bridge
- Cheek contact points.

Managing skin irritation

For irritant contact dermatitis:

- Switch to a softer mask brand if available.
- Use a soft dressing or thin silicone pad under a surgical mask (not under tight fitting respirators).
- Increase moisturiser use, especially at night.
- Low strength over the counter topical steroids may help persistent dermatitis.
- Seek dermatology advice if symptoms worsen and report concerns to a supervisor.

Managing pressure injuries

- Apply cool compresses (gauze soaked in cold water/saline) for 20 minutes every 2–3 hours.
- Moisturise intact skin before and after mask use.
- Use silicone dressings under surgical masks or behind ears to reduce pressure and friction.
- Hydrocolloids may help but must not be used under tight fitting respirators.
- Avoid hot water, ethanol, or irritants on the skin.
- Switch to a visor if goggles cause pressure.
- If skin breaks down, use medical grade silicone based products and seek clinical review.
- Do not wear a mask over broken skin; redeployment may be required until healed.

Prophylactic dressings under tight fitting respirators

- May be used to prevent skin injury only if a fit test is passed with the dressing in place.
- A fit check must be performed every time the respirator is applied.

Refer to the Respiratory Protection Program and relevant evaluation studies for detailed guidance.

Reporting Incidents

All PPE related issues, defects, or adverse effects must be formally reported according to the Incident Management (PD2020_047) to ensure worker safety and compliance with incident management requirements:

- Report 'No person incidents' (for example, defective mask straps).
- Report 'Worker incidents' for skin reactions or other harm.
- Services not using ims+ should follow local reporting processes.

Mask and respirator wearing exemptions in healthcare facilities

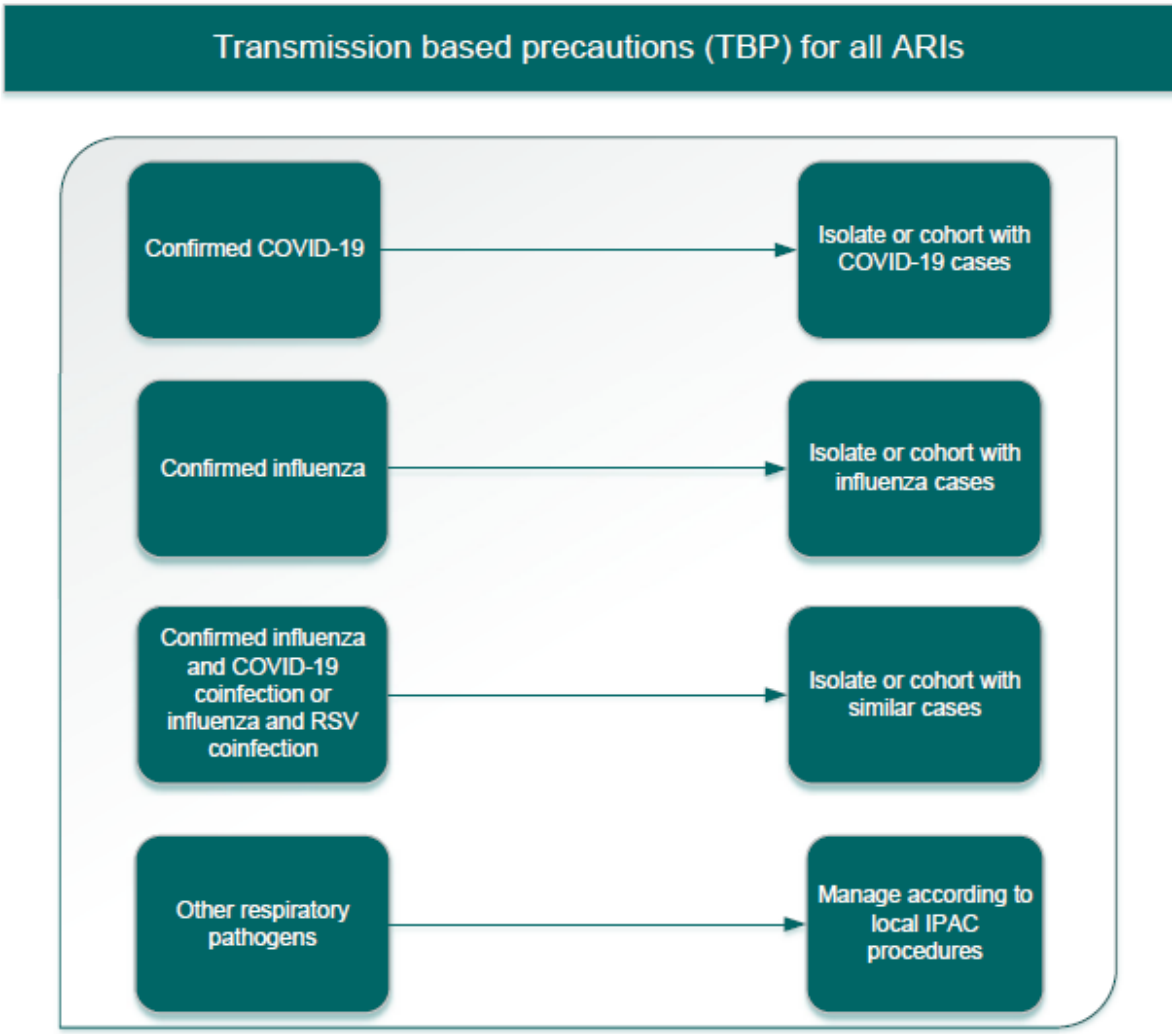
The following principles apply when considering mask wearing exemptions for health workers during periods of heightened transmission risk:

- During ***red alert*** risk levels, when mask use is mandatory, health workers who cannot wear any form of face covering at all must not attend work.
- Health workers who are unable to tolerate respirator use but can safely wear a surgical mask should undergo a documented risk assessment to determine whether modified duties, alternative work locations or other control measures are appropriate. Exemption from respirator use does not automatically constitute exemption from surgical mask use, unless the worker is unable to tolerate any face covering.
- Workers who can tolerate masks only for short periods should undergo a risk assessment to determine whether modified duties are appropriate.

2.6 Patient placement – risk assessment guide

To support the safe and timely placement of patients with known or suspected transmissible infections, decisions should align with guidance from the CEC Infection Prevention and Control Practice Handbook *(Chapter 6, Section 6.5: Supporting bed allocation and patient flow*). In some cases, a combined transmission-based approach may be required for specific communicable diseases. Figure 1 outlines the application of transmission-based precautions for patients with ARIs, providing a clear pathway for managing confirmed infections such as COVID-19, influenza, and coinfections, including when to isolate or cohort patients with similar cases. For other respiratory pathogens, follow local infection prevention and control procedures.

Figure 1 IPAC management of patients with ARIs



Note: consider immunocompromised status when isolating or cohorting* patients with ARI symptoms

* This refers to the grouping of patients with the same pathogen in the same area. The goal of cohorting patients (and the health worker that attends to them) is to minimise interaction between infectious patients and non-infected patients as much as possible.

* For paediatric patients, cohorting assessments must also consider the parent or carer, as sharing a room may expose them to infection risks from another patient or their parent/carer.

2.7 Visiting patients/clients in healthcare facilities

Maintaining access for visitors is essential even during a pandemic or outbreak. NSW healthcare facilities should continue to support patients to receive visits from partners, family, friends, participants in care (PIC), carers and/or volunteers. Refer to Caring Together - Welcoming Visitors (PD2026_025) and *Appendix 2B: Visitors and participants in care visiting guidance during ARI and COVID-19 season*.

2.8 Environmental cleaning

Environmental cleaning and disinfection are crucial to preventing transmission of infection in the healthcare environment. Respiratory viruses can persist on surfaces but can be effectively inactivated by appropriate disinfectants. It is important to clean before disinfecting as dirt and grime can affect how well a disinfectant works.

Refer to the Infection prevention and control practice handbook, Environmental cleaning and Cleaning of the Healthcare Environment (PD2023_018) for more information.

2.9 Outbreak management

An outbreak is defined as two or more confirmed cases of infection (patient, resident, health worker or visitor) occurring within a healthcare or residential care facility at levels higher than normally expected. When an outbreak is identified, the following actions must be taken:

- Risk assess patients using *Table 7 patient/visitor exposure to COVID -19 case risk matrix* and staff using *Table 5 occupational exposure to COVID -19 health worker risk matrix*.
- Work with local Public Health Unit (PHU) according to local processes
- In conjunction with local IPAC, collect data on cases and determine the index case, potentially exposed patients and health workers. Prepare an initial outbreak brief for relevant stakeholders.
- Limit non-essential patient visitors over the declared outbreak period (note: compassionate visitor exceptions require consideration). Closely risk-manage patient visitors (PPE and hand hygiene compliance required, screen for recent respiratory symptoms, provide information to visitors about potential risk acquisition).
- Notify other care facilities and hospitals where patients or residents have had a high-risk exposure and have subsequently been transferred or require immediate transfer for care.
- Outbreaks with significant ongoing transmission may require stricter limitation of visitors and/or ward closure to admissions if advised by the outbreak management team.
- Consider COVID-19 and/or influenza positive patient eligibility for antiviral treatment and document if they decline or are considered ineligible.
- Follow local documentation and reporting.
- A decision to declare the outbreak over should be made by internal processes, in consultation with the IPAC. This should be at least 7 days since the last date of identified transmission.

Each outbreak will differ according to the circumstances of the facility/department. The investigation and management will be applied based on identifying and understanding the features of the outbreak.

For more information on outbreak response procedures refer to CEC Infection prevention and control practice handbook. For residential care homes refer to Advice for aged care services on managing acute respiratory infections (ARIs).

2.10 Occupational exposure to COVID-19

Health worker post exposure management

Assessment and management of occupational exposure to COVID-19 (Figure 2 PPE breach risk assessment key principles) should be multidisciplinary and involve Staff Health, Infection Prevention and Control (IPAC), Infectious Diseases (where available), and local Public Health as appropriate.

Following exposure, health workers should:

- Receive clear advice on monitoring for symptoms consistent with COVID-19.
- Maintain strict adherence to all recommended infection prevention measures, including hand hygiene, appropriate mask use, environmental cleaning, and respiratory etiquette.
- Be provided with appropriate follow-up, support, and a documented plan for safe return to work.

Management of health workers exposed to COVID-19 in either healthcare or community settings should be guided by:

- Table 4 Health worker – return to work after COVID-19
- Table 5 Occupational exposure to COVID-19 – Health worker risk matrix
- Table 6 exposure to COVID-19 – actions required for assigned risk level.

Contact tracing of exposed health workers remains an essential component of risk management within healthcare environments. This process may differ from broader community guidance, reflecting the higher-risk nature of healthcare settings and vulnerable patient populations.

If exposure involves patients, visitors, participants in care (PICs), or carers, refer to *Table 7 Patient/visitor exposure to COVID-19 case risk matrix.*

This supports risk assessment and identification of appropriate actions to minimise onward transmission within healthcare facilities. If patients are a contact from either a health worker or visitor and are immunocompromised, consider testing for respiratory viruses 5-7 days after exposure, even if asymptomatic.

Vaccination and risk reduction

Vaccination remains a key control measure, reducing both the risk of infection and the likelihood of severe disease and hospitalisation. All NSW health workers must comply with current NSW Health vaccination requirements and Australian Technical Advisory Group on Immunisation (ATAGI) recommendations.

Health workers who are non-compliant with influenza vaccination requirements (including those with approved exemptions) must:

- Wear, at a minimum, a surgical mask in all areas of the health facility (clinical and non-clinical).
- Take meal and beverage breaks separately from other staff where feasible (for example, outdoors), particularly during mask removal.

Additional risk mitigation strategies may include:

- Temporary reassignment to lower-risk duties, supported by a documented risk assessment.
- Implementation of enhanced infection prevention and control measures, particularly during periods of increased transmission or local outbreaks.

Table 4 Health worker - return to work after COVID-19

Note: if health worker is significantly immunocompromised, they need to seek advice from either their GP or relevant specialist regarding safe return to work.

Confirmed positive RAT or PCR test	
Day 0*	Do not attend work (stay home), notify manager and record results as per local process.
Day 1-3 (applies to asymptomatic HWs only)	Sites performing staff surveillance testing, if a HW tests positive to COVID-19 they should stay at home. If a PCR is performed and is negative, they may return to work. If the PCR is positive or is not done, stay at home for ***three days*** and return to work when: • If asymptomatic prior to positive test and continues to be asymptomatic • A repeat COVID-19 RAT is negative (not required where PCR is negative). If the HW develops symptoms, they should not attend work or be advised to leave work, refer to advice below.
Day 5 (symptomatic HW)	Conduct RAT, notify manager and record result as per local process.
	RAT negative: Can return to work the next day (day 6) if ***asymptomatic with risk mitigation*** in place until day 10.
	RAT not done: Can return to work on day 7 only if ***asymptomatic*** for at least the 24 hours prior ***with risk mitigation*** in place until day 10.
	RAT positive: Can return to work 5 days from symptom onset, or until acute symptoms have resolved, whichever is longer with risk mitigation in place until day 10. If the HW is working with significantly immunocompromised patients, a risk assessment must be performed after day 7 and before return to work.

*Day 0: is the date of onset of symptoms or the date of the COVID-19 positive test, whichever is earliest.

Table 5 Occupational exposure to COVID-19 - health worker risk matrix

PPE worn		Contact type		
Health worker	Case[+]	Low risk scenarios – transient contact	Moderate risk scenarios	High risk scenarios
No effective PPE	No effective PPE	Low	Moderate[#]	High[#]
Surgical or P2/N95 mask and ***no*** eye protection	No mask	Low	Low to moderate[#]	Moderate to high[#]
	Surgical mask	Low	Low	Low to moderate[#]
Surgical or P2/N95 mask and eye protection (no breaches)	No mask	Low	Low	Low
	Surgical mask	Low	Low	Low

Key:

Low risk: Transient, not face-to-face, limited contact that does not meet the definition of face-to-face contact

Moderate risk: Any face-to-face contact within 1.5m up to 4 hours with a COVID-19 case

High risk: Prolonged face-to-face contact within 1.5m for more than 4 hours cumulative with a COVID-19 case OR aerosol generating behaviours

Case[+]: Any confirmed case of COVID-19 (co-worker, patient or other)

[#]Perform a risk assessment on the level of exposure, duration, frequency and level of PPE breach (see Figure 2 PPE Breach risk assessment key principles)

*Patients who are receiving close circuit ventilation can be considered to have equivalent protection to a surgical mask.

NB: Where a P2/N95 respirator is indicated, the user must comply with the Respiratory protection program.

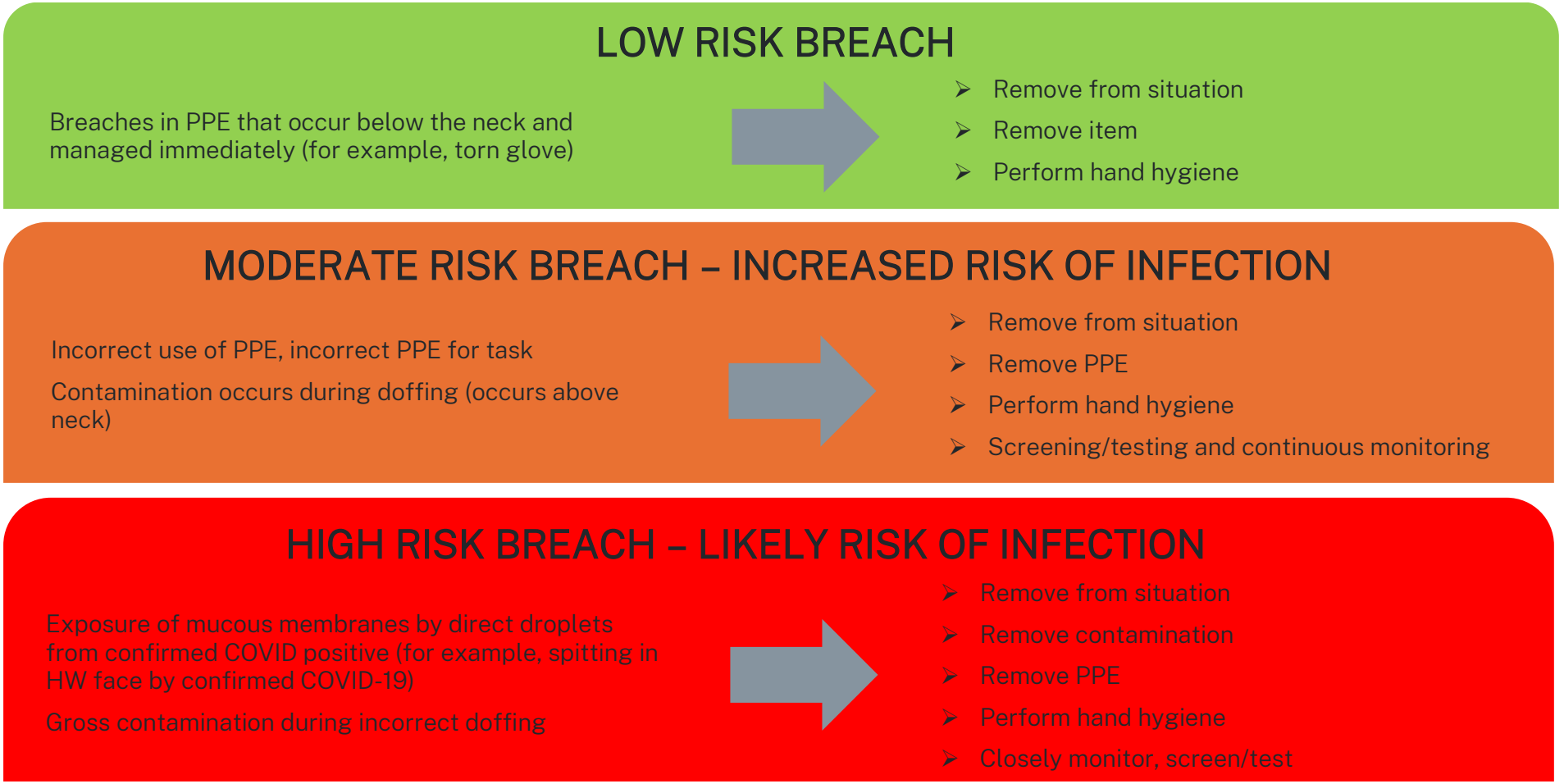
The use of eye protection for contact tracing is applied for droplet precautions when within 1.5m of a positive case (where a mask is not being worn by the case). The absence of eyewear outside of this setting will not increase risk.

Table 6 Exposure to ARI - Actions required for health workers

COVID-19	Influenza	RSV
Note: Perform a RAT or PCR if ***symptomatic***, stay at home until ***asymptomatic*** and a negative result is received		
Exclusion is not needed if no symptoms Wear a surgical mask when at work for 7 days from last exposure Risk mitigation including risk assessment and management of shared spaces such as tearooms	Exclusion is not needed if there are no symptoms Wear a surgical mask when at work for 7 days from last exposure	Exclusion is not needed if no symptoms
No post-exposure prophylaxis	Consult infectious diseases regarding indications for post-exposure prophylaxis with anti-viral therapy	No post-exposure prophylaxis

Figure 2 PPE breach risk assessment key principles

Perform risk assessment to determine the level of exposure as applied to ARI suspected or confirmed



Adapted and modified from work developed by AUSMAT Quarantine management and operations compendium for the Howard Springs Quarantine Facility for the Repatriation of Australians at the Centre for National Critical Care and Trauma Response Centre, Darwin 2021.

Table 7 Patient/visitor exposure to COVID-19 case risk matrix

PPE worn		Contact type		
Case#	Contact	Low risk scenarios – transient contact	Moderate risk scenarios	High risk scenarios
No mask	No mask	Low	Moderate	High
Surgical mask	No mask	Low	Low	Moderate to high
No mask	Surgical mask*	Low	Low	Moderate
Surgical mask	Surgical mask*	Low	Low	Low
P2/N95 respirator (HW)	Mask or no mask	Low	Low	Low

Key:

Low risk: Transient, not face-to-face, limited contact that does not meet the definition of face-to-face contact

Moderate risk: Any face-to-face contact within 1.5m up to 4 hours with a COVID-19 case

High risk: Prolonged face-to-face contact within 1.5m for more than 4 hours cumulative with a COVID-19 case OR aerosol generating behaviours

Case#: Any confirmed case of COVID-19

*Patients in shared rooms/bays may require escalation of risks given high transmission rates in this environment

NB: P2/N95 respirators are not recommended for use by the patient of COVID-19.

This risk assessment includes parents or carers accompanying the child.

Table 8 Patient/visitor exposure to COVID-19 case (Neonatal units) risk matrix

PPE worn		Contact type		
Case#	Contact	Low risk scenarios – transient contact	Moderate risk scenarios	High risk scenarios
No PPE	Open cot	Low	Moderate	High
Surgical mask	Open cot	Low	Low	Moderate
No PPE	Closed crib	Low	Low	Low
Surgical mask	Closed crib	Low	Low	Low
P2/N95 respirator	Open cot/closed crib	Low	Low	Low

Key:

Low risk: Transient, not face-to-face, limited contact that does not meet the definition of face-to-face contact

Moderate risk: Any face-to-face contact within 1.5m up to 4 hours with a COVID-19 case

High risk: Prolonged face-to-face contact within 1.5m for more than 4 hours cumulative with a COVID-19 case OR aerosol generating behaviours

Case#: Any confirmed positive case of COVID-19

*Patients who are receiving close circuit ventilation can be considered to have equivalent protection to a surgical mask

NB: Absence or eye protection does not equate to onward transmission.

This risk assessment includes parents or carers accompanying the child.

Table 9 Action based on risk classification

Actions based on risk classification (from table 7)			
	COVID-19	Influenza	RSV
Contact testing	All patients in the affected zone	Symptomatic patients in the same zone	Symptomatic patients in the same zone
Contact isolation	Patients who are in the same zone(s) should avoid moving between different zones	Patients who are in the same zone(s) should avoid moving between different zones	Nil
Post-exposure prophylaxis	Nil	Influenza antivirals to be considered in outbreak (via treating clinician). See 'Antiviral prophylaxis considerations during an influenza outbreak' for more information.	Nil
Visitors	Can visit if there are no symptoms A mask should be worn for 7 days from last exposure if visiting	Can visit if there are no symptoms A mask should be worn for 7 days from last exposure if visiting	Can visit if there are no symptoms A mask should be worn for 7 days from last exposure if visiting

*If transferred to another unit/facility, the receiving unit/facility need to ne notified as part of the transfer handover.

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Appendix 2A: Testing for Acute Respiratory Infection (ARI)

Diagnostic testing for acute respiratory infections should be guided by clinical assessment, with the most likely pathogens being tested first. These are usually influenza, respiratory syncytial virus (RSV) or COVID-19.

NSW Health Pathology offers a variety of respiratory Polymerase Chain Reaction (PCR) assays:

- respiratory 'triplex' testing (Influenza A/B, RSV and COVID-19)
- ***viral*** multiplex PCR tests (may include pathogens such as influenza, rhinovirus, adenovirus, enterovirus, RSV, parainfluenza and metapneumovirus)
- various ***viral and bacterial*** multiplex respiratory PCR tests (may include pertussis, ***atypical*** bacterial pathogens such as Chlamydia, Mycoplasma, Legionella and other less common pathogens).

Availability of these tests varies, and some have on-site respiratory triplex PCR testing only. If additional respiratory multiplex PCR testing is requested by the clinician, specimens may be sent to a second laboratory. If additional tests are requested, two swabs may need to be taken; one for local respiratory PCR testing and the second swab for additional PCR testing. Check with your pathology provider.

Respiratory virus testing FAQs

1. Who should be tested?

Patients who meet criteria for ARI, whether on presentation/admission or if already an inpatient, may require respiratory PCR testing for the following reasons:

- patients who may benefit antimicrobial therapy including antivirals whether admitted or discharged
- patients who require close clinical follow-up and management
- testing may be required for residential care facility residents or as guided by public health.

Note: On admission if patient has a positive RAT, a confirmatory PCR is not always required.

2. How is the test done?

Testing for respiratory pathogens requires the collection of a throat/nose swab. Ensure the correct swabs and collection technique are used; inadequate specimens can reduce the effectiveness of testing and incorrect specimen collection can place the health worker collecting the respiratory samples at unnecessary risk. If you are uncertain, please contact your local laboratory.

3. Do I need to wait for the collection and/or report of pathology samples to manage and move a patient?

No. Patients with ARIs should be managed with transmission-based precautions (either airborne or droplet) and standard precautions as soon as practicable. Do not wait for the collection or results of pathology samples to apply infection prevention and control practices. Appropriate IPAC strategies can be implemented in any healthcare setting, including the emergency department. Patients should be managed based on their symptoms (for example, ARI symptoms require droplet or airborne precautions) while awaiting test results.

4. What respiratory testing is available?

Two types of tests are available. PCR and rapid antigen tests (RAT).

Respiratory PCR tests are available through NSW Health Pathology and other private pathology providers. There are different respiratory PCR panels provided by different pathology providers. The choice regarding the types of respiratory PCR panels depends on the clinical presentation, history, epidemiological information, location of the patient and workflows of the different pathology providers.

RAT for the 4 notifiable respiratory viruses (influenza A/B, RSV and COVID-19) are commercially available. The use of RATs is a locally determined process and not performed by pathology providers. Check with your local healthcare facility for details.

Rapid antigen tests (RAT)

The use of RATs for the diagnosis of a variety of respiratory viral infections is continuing to evolve.

RATs are intended for use at the point-of-care or for self-testing and, like nucleic acid testing, require samples from the upper respiratory tract (a throat/nose swab). It is important to note that there is considerable variability in the performance between different RATs. RATs are less sensitive and less specific than nucleic acid testing for respiratory pathogens.

Most manufacturers of current RATs claim that maximal sensitivity is achieved when testing symptomatic individuals within the first 1-3 days of the onset of symptoms. Please refer to the TGA website and search by the name, ID or sponsor of the RAT kit you are reviewing.

The RAT result should be documented in the patient's electronic health record.

Using RATs

These should be used in accordance with the following:

1. RATs selected for use must be included in the Australian Register of Therapeutic Goods (ARTG) and be supplied in accordance with conditions prescribed by the Therapeutic Goods Administration (TGA).
2. RATs used at the point-of-care must be used in accordance with the National Pathology Accreditation Advisory Council Guidelines for Point of Care Testing. See National Pathology Point of Care Testing (Second Edition 2021).
3. Rapid antigen testing should be undertaken in accordance with any public health orders and/or regulations of the jurisdiction where they are used.
4. RATs must be used in accordance with the manufacturer's instructions for use (IFU). Use outside these instructions breach TGA regulations in relation to the supply and use of these tests and performance of the test result.
5. A positive RAT together with ARI symptoms can be used to manage patient placement and flow. A negative RAT in this context is an indication for PCR testing. Confirmatory PCR testing of a positive RAT is recommended if specific antiviral treatment is considered but should not delay patient placement or the application of infection prevention and control practices.

Selection of RATs (procurement)

When considering procurement of RATs, it is important to review the relevant product information for individual tests considering the following performance characteristics to guide purchasing.

1. Sensitivity and specificity. Recommend choosing RATs where there is evidence of independent reviews of sensitivity and specificity detailed in the 'Instructions for Use' (IFUs) and sensitivity and specificity is high (for example, ≥ 80 %). If no independent reviews are available, choose tests where information is available about the performance of the kit; and the number of participants tested or dilutions of pathogens by a recognised laboratory provider or organisation and choose tests with acceptable sensitivity and specificity as above.
2. Review which viral strains are detected by the individual RAT. These should ideally align with current circulating strains noting that H1N1 and H3N2 strains of influenza A are always important.
3. When reviewing product information, it is important to note the difference between analytical sensitivity and clinical sensitivity when assessing and comparing the performance characteristics of a RAT. Analytical sensitivity is predominantly measured by in vitro laboratory studies designed to assess the test's limits of detecting the virus. In contrast, clinical sensitivity (the 'real-world' performance of the test) depends on several factors, including sampling, days post-symptom onset, adequacy of test procedure and viral shedding kinetics.

What about surveillance testing?

Surveillance testing currently has a very limited role and is not routinely recommended. This may be considered in an outbreak situation where testing may detect infected individuals before they are symptomatic and inform local IPAC strategies. Any plans considering respiratory surveillance testing must include NSW Ministry of Health and the Public Health Unit, NSW Health Pathology, Public Health Pathology, the local microbiologist and infectious diseases specialists and IPAC. For more information refer to Coronavirus (COVID-19) – CDNA National Guidelines for Public Health Units.

Post-infection testing

People who have confirmed COVID-19, influenza or RSV do not usually need repeat testing once symptoms have resolved. However, for deisolation of patients with COVID-19, retesting may be required (see Table 2, page 16). People, including children who are significantly immunocompromised may continue to shed virus for several weeks. If new respiratory symptoms develop, the patient requires reassessment including the need for retesting. required.

Table 10 COVID-19 surveillance testing - for use when significant community transmission

	Alert level		
	Yellow Low transmission	Amber Moderate to high transmission	Red High transmission, outbreaks
High risk • ED presentations • Emergency surgery • Antenatal impatient care • Admissions	No routine testing	Test all symptomatic and targeted testing based on risk assessment	Recommend testing all patients: Consider retesting admissions 3-5 days after admission
Moderate risk • Elective admissions • Adult parents/carers staying with hospitalised children • Participants in care including support person • Elective surgery	No routine testing	Test symptomatic patients and participants in care or parents staying with children	Test all effective admissions, if using PCR* 24-48 hours prior to admission RAT testing of participants in care, parents staying with children
Low risk • Outpatient appointments – including home visits (community care) • Drop-in clinics	No routine testing	Test all symptomatic and targeted testing based on risk assessment	Telehealth where possible Recommend RAT prior if face-to-face for appointments longer than 15 mins and/or if mask needs to be removed for consultation**
Other • Dialysis • Chemotherapy and/or radiotherapy appointments	No routine testing	Test 2-3 x week at site depending on visit schedule and local transmission	All: RAT on presentation
Transfer back to RACF or group home	Testing as per above for admissions. See here for more information. Absence of a test should not delay transfer of this patient group		

*PCR testing the day prior to admission is preferential if results are reliably available within 48 hours and providing local facilities can provide the testing

**Targeted testing: identification of most vulnerable at highest risk acquisition or transmission that warrants admissions additional control strategies

NB: Where a positive test result is received, proceeding with the patient's treatment should be accommodated using risk mitigation controls and ensuring delivery of safe, quality care maintaining health worker safety.

Appendix 2B: Visitors and participants in care visiting guidance during ARI

NSW healthcare facilities should support safe visitation during periods of higher transmission of ARIs by balancing infection prevention with patients' social and care needs. Rather than restricting access, visitation should be guided by infection prevention and control (IPAC) principles, including clear communication, visitor education, appropriate PPE use, hand hygiene and physical distancing. Additional measures such as screening or testing may be used in higher-risk settings, alongside encouragement of vaccination.

Access to visitors (family, carers, PIC, volunteers) should be maintained wherever possible, with policies centred on compassionate care and patient wellbeing. For visitors or patients with ARI or other communicable diseases, case-by-case risk–benefit assessments should be undertaken in consultation with IPAC or infectious diseases teams. Patients should wear masks during visits where appropriate.

Visitation decision-making

Discussions with patients and families should support informed decisions, considering:

Risks: potential transmission of infection, mitigated through PPE, hygiene, distancing and reduced visit duration.

Benefits: improved patient safety, emotional wellbeing, advocacy, communication, reduced distress (especially for vulnerable or cognitively impaired patients) and support during end-of-life care.

Alternatives: use of virtual communication, additional staffing support where appropriate and alternative ways to provide care and connection (for example, letters or personal items).

Special consideration should be given to vulnerable patients (clinical, social or end-of-life needs), with decisions aligned to local health district processes.

Refer to *Table 11 Supporting visitation.*

For the latest advice refer to NSW Health guide to healthcare visitation and Caring Together – Welcoming Visitors (PD2026_025).

Table 11 Supporting visitation

Type of patient	Special considerations
Patient immunocompromised	A clinical assessment should be completed to determine the suitability of visitation. If patient is deemed particularly vulnerable and therefore unsuitable, alternative methods, such as virtual visitation, should be explored.
Visitation on compassionate ground For example: • Patient seriously ill or dying • Patient in palliative care who are critically ill	Visitation should not be restricted, regardless of communicable disease status of both patient and visitors. Written exemption not required.
Patients in care of maternity services	Participants in care who are positive or a close contact for a communicable disease should be supported to attend in appropriate circumstances.
Patients in care of neonatal and paediatric services	Participants in care who are a close contact and are asymptomatic should have visitation supported in appropriate circumstances
Patients in care of mental health services	Visitation should not be restricted. Sensible approach, compassion, risk assessment and escalated decision making required.
Patients with cognitive impairment, delirium or dementia	Visitation should not be restricted. Visits can assist in assessment and management of the patient in their day-to-day comfort and safety, as well as being a significant help/support for health workers

Appendix 2C: Aerosol-generating procedures

Aerosol-generating procedures (AGPs) produce smaller respiratory particles due to air or gas flowing rapidly over moist or wet surfaces. There are many procedures that may be 'aerosol-generating', and these are considered to increase the risk of transmission of respiratory viruses.

Other procedures that may cause aerosolisation of fluid or tissues that are not from the respiratory tract or lungs are not considered high risk AGPs for transmission of respiratory pathogens.

Some considerations include:

- AGPs on suspected or confirmed ARIs should be performed with a minimum number of HWs present and where possible, the most qualified person should carry out the procedure
- Nebulisers are not recommended 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, then:
  - Isolate the patient
  - Use a negative-pressure room if available, otherwise use a single room with the door closed
  - Health workers administering nebulisers should wear airborne precaution PPE, including P2/N95 respirator and eye protection
  - If staying in the room, depending on the air changes per hour, continue these precautions for at least 30 minutes after the nebuliser treatment. See link: CDC Air Changes.

Cardiopulmonary resuscitation

While providing CPR for patients suspected or confirmed to have COVID-19 or ARI wear a P2/N95 respirator and eye protection. For more information refer to CPR during the pandemic - National Clinical Taskforce.