RACGP
Royal Australian College of General Practitioners

Infection prevention and control guidelines

Last updated: 10 11 2026

Table of contents
About these guidelines
Transmission of infection in health care
1. Principles
    1. Overview – Principles
    2. Risk assessment and planning
    3. Education and training
    4. Clinical handover
    5. Antimicrobial stewardship to reduce opportunities for antimicrobial resistance
    6. Managing risk in special circumstances
    7. Resources and references
2. Hand hygiene
    1. Overview – Hand hygiene
    2. Role of hand hygiene in infection prevention and control
    3. When hands must be cleansed
    4. Facilities for hand hygiene
    5. Hand-hygiene products
    6. Hand hygiene technique
    7. Hand care
    8. Jewellery, nail polish and artificial nails
    9. Hand hygiene with glove use
    10. Hand hygiene when specific pathogenic microorganisms are present or suspected
    11. Other factors affecting practice hygiene
    12. Hand hygiene for patients
    13. Resources and references
3. Personal protective equipment
    1. Overview – Personal protective equipment
    2. General principles of personal protective equipment use
    3. When to use personal protective equipment
    4. Applying, removing, and disposing of personal protective equipment
    5. Extended use of personal protective equipment
    6. Case study
    7. Resources and references
4. Aseptic technique
    1. Overview – Aseptic technique
    2. Principles and terminology
    3. Standard aseptic technique
    4. Surgical aseptic technique
    5. Skin disinfection (asepsis)
    6. Resources and references
5. Levels of precaution
    1. Overview – Levels of precaution
    2. Standard precautions
    3. Transmission-based precautions
    4. Contact tracing
    5. Case study
    6. Resources
6. Staff screening immunisation and infection management
    1. Overview – Staff screening
    2. Principles for managing staff immune status
    3. Screening

    4. Staff immunisation policy and procedures
    5. Vaccinations for health professionals
    6. Health professionals with a blood borne virus
    7. Staff disease surveillance
    8. Resources and references
7. Sharps
    1. Overview – Sharps
    2. Responsibilities for sharps management
    3. Safe sharps handling practices
    4. Safety-engineered medical devices
    5. Reducing risk of infection after a sharps injury
    6. Resources
8. Exposure to blood and other body substances
    1. Overview – Exposure to blood and other body substances
    2. Blood-borne viral infection risk
    3. Strategies for preventing exposure to blood and body substances
    4. Responsibilities for managing exposure to blood and body substances
    5. Summary of steps for managing an exposure incident involving a staff member or patient
    6. Documentation of the exposure
    7. Resources and references
9. Cleaning, laundry and waste management
    1. Overview – Cleaning, laundry and waste management
    2. Policy and responsibilities
    3. Work health and safety issues
    4. Scheduled cleaning
    5. Cleaning agents and methods
    6. Cleaning reprocessing area
    7. Cleaning after contamination by blood or other body substances (spills)
    8. Cleaning tools
    9. Monitoring of cleaning
    10. Laundry
    11. Waste management
    12. Toilets
    13. Case study
    14. Resources and references
10. Reprocessing of reusable medical devices and other devices in general practice
    1. Overview – Reprocessing reusable medical devices
    2. Classification for reprocessing devices
    3. Quality systems
        1. Overview – Critical processes for reprocessing
        2. Documentation
        3. Roles and responsibilities
        4. Resource requirements
        5. Life cycle of reprocessing equipment, reusable medical devices and accessories
        6. Measurement, analysis and improvement
    4. Risk based approach
        1. Overview - Risk-based approach
        2. The risk management process
        3. Example of a quality-controlled reprocessing workflow for reusable medical devices
    5. Agents for reprocessing
    6. Disposable materials used in the sterilisation process

7. Managing the area for reprocessing for reusable medical devices
8. Process definition
    1. Overview – Cleaning process
    2. Transportation
    3. Initial treatment at point of use
    4. Cleaning processes before sterilisation
    5. Packaging process
    6. Steriliser types
    7. Sterilisation process
9. Validation
    1. Overview – Purpose of validation
    2. Stages of validation
    3. When validation is required
    4. Offsite validation and remote settings
    5. Components of Steriliser Validation
10. Release of reusable medical devices following reprocessing
11. Routine monitoring and control
12. Keeping reprocessing equipment working effectively
13. Outsourced and offsite instrument handling
14. Resources
15. Reprocessing glossary

11. Disease surveillance and outbreak response
    1. Overview – Disease surveillance and outbreak response
    2. Response procedure
    3. Staff education
    4. Monitoring for threats
    5. Notifying relevant authorities
    6. Contact tracing
    7. Practice response to threats
    8. Patient-specific precautions
    9. Receptionists' infection prevention and control kit
    10. Critical infection prevention and control incidents
    11. Resources

12. Planning a practice: design, fit-out, equipment and consumables
    1. Overview – Planning a practice: design, fit-out, equipment and consumables
    2. Equipment
    3. Choosing consumables and reusable equipment
    4. Resources and references

Glossary
Links
Relevant standards
Acknowledgements
Disclaimer

Table of contents

Infection prevention and control guidelines for general practices and other office-based and community-based practices

Introduction

About these guidelines
Transmission of infection in health care

1. Principles

Overview Risk assessment and planning Education and training Clinical handover Antimicrobial stewardship to reduce opportunities for antimicrobial resistance Managing risk in special circumstances Resources and references

2. Hand hygiene

Overview Role of hand hygiene in infection prevention and control When hands must be cleansed Facilities for hand hygiene Hand-hygiene products Hand hygiene technique Hand care Jewellery, nail polish and artificial nails Hand hygiene with glove use Hand hygiene when specific pathogenic microorganisms are present or suspected Other factors affecting practice hygiene Hand hygiene for patients Resources and references

3. Personal protective equipment

Overview General principles of personal protective equipment use When to use personal protective equipment Applying, removing, and disposing of personal protective equipment Extended use of personal protective equipment Case study Resources and references

4. Aseptic technique

Overview Principles and terminology Standard aseptic technique Surgical aseptic technique Skin disinfection (asepsis) Resources and references

5. Levels of precaution

Overview Standard precautions Transmission-based precautions Contact tracing Case study Resources

6. Staff screening immunisation and infection management

Overview Principles for managing staff immune status Screening Staff immunisation policy and procedures Vaccinations for health professionals Health professionals with a blood borne virus Staff disease surveillance Resources and references

7. Sharps

Overview Responsibilities for sharps management Safe sharps handling practices Safety-engineered medical devices Reducing risk of infection after a sharps injury Resources

8. Exposure to blood and other body substances

Overview Blood-borne viral infection risk Strategies for preventing exposure to blood and body substances Responsibilities for managing exposure to blood and body substances Summary of steps for managing an exposure incident involving a staff member or patient Documentation of the exposure Resources and references

9. Cleaning, laundry and waste management

Overview Policy and responsibilities Work health and safety issues Scheduled cleaning Cleaning agents and methods Cleaning reprocessing area Cleaning after contamination by blood or other body substances (spills) Cleaning tools Monitoring of cleaning Laundry Waste management Toilets Case study Resources and references

10. Reprocessing of reusable medical devices and other devices in general practice

Reprocessing Overview Classification for reprocessing devices Quality Systems Risk-Based Approach Agents for reprocessing Dispopsable materials used in the sterilisation process Managing the area for reprocessing for reusable medical devices Process definition Validation Release of reusable medical devices following reprocessing Routine monitoring and control Keeping reprocessing equipment working effectively Outsourced and offsite instrument handling Resources Reprocessing glossary

11. Disease surveillance and outbreak response

Overview Response procedure Staff education Monitoring for threats Notifying relevant authorities Contact tracing Practice response to threats Patient-specific precautions Receptionists' infection prevention and control kit Critical infection prevention and control incidents Resources

12. Planning a practice: design, fit-out, equipment and consumables

Overview Equipment Choosing consumables and reusable equipment Resources and references

Glossary
Links

Relevant standards
Acknowledgements
Disclaimer

About these guidelines

Potentially infectious microorganisms are ubiquitous in healthcare settings. Infection prevention and control measures aim to minimise the number of pathogenic microorganisms in the practice environment and prevent their transmission.

Aim

These guidelines provide general practices and other office-based healthcare practices with updated guidance on planning and implementing high standards of infection prevention and control in their workplaces.

Intended readers

These guidelines are intended mainly for owners, managers and staff of general practices and allied care practices.

How these guidelines were developed

These guidelines were developed and reviewed by experts in the fields of infectious diseases, microbiology and infection prevention and control as well as doctors, practice nurses and practice managers.

The guidance draws on the following key sources:

- The Royal Australian College of General Practitioners. Standards for general practices. 5th edition. East Melbourne, Vic: RACGP, 2020[1] (the Standards)
- National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019)[2]
- National Hand Hygiene Initiative manual (2019)[3]
- Communicable Diseases Network Australia. Australian national guidelines for the management of healthcare workers living with blood borne viruses and healthcare workers who perform exposure-prone procedures at risk of exposure to blood borne viruses (2019)[4]
- current standards applicable to Australian practice and draft new standards, where relevant.

This publication replaces RACGP *Infection prevention and control standards for general practices and other office-based and community-based practices*,[5] last updated in 2016.

📋 Note on terminology:

In these guidelines, 'staff' includes all people who work or provide care within the practice, including employees and contractors (eg doctors, nurses, receptionists, practice managers, allied health professionals, administrative staff, cleaners including contract cleaners). 'Clinical staff' refers to health professionals (including doctors, nurses, Aboriginal health workers, and allied health care professionals).

'The Standards' refers to RACGP *Standards for general practices*.

Use of 'could', 'should' and 'must'

It is important to acknowledge that this resource is intended as a guideline to assist health professionals in general practices and other office-based and community-based practices in their implementation of infection prevention and control procedures. This means that practices are not accredited against Infection prevention and control guidelines, but may refer to them in meeting some criteria set out in the Standards.

Throughout these guidelines, the words 'could', 'should' and 'must' are used as follows:

- 'Could' is used to indicate that something is optional.
- 'Should' is used to indicate that something is strongly recommended by the RACGP and key sources from which the guidelines have drawn from (as listed above).
- 'Must' is used to indicate that something is mandatory.

References

1. The Royal Australian College of General Practitioners. Standards for general practices. 5th edn. East Melbourne: RACGP; 2020.
2. Australian Commission on Safety and Quality in Health Care, National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare 2019 (Version 11.12) [Website]: MAGICapp; 2022 [cited 2022 September].
3. Australian Commission on Safety and Quality in Health Care. National Hand Hygiene Initiative manual. Sydney, NSW: ACSQHC; 2019.
4. Communicable Diseases Network Australia. Australian national guidelines for the management of healthcare workers living with blood borne viruses and healthcare workers who perform exposure prone procedures at risk of exposure to blood borne viruses (revised 2019): Australian Government Department of Health; 2018 [cited 2022 March].
5. The Royal Australian College of General Practitioners. Infection prevention and control standards for general practices and other office-based and community-based practices. 5th ed. East Melbourne, Victoria: RACGP; 2014.

Transmission of infection in health care

Microorganisms that cause disease (bacteria, viruses, fungi including yeasts, protozoa, and prions) are transmitted and acquired in various ways. Some microorganisms need specific conditions to survive and multiply. For example, a certain temperature range, access to oxygen or protection from oxygen, and nutrients. When these conditions are met, they can multiply rapidly until killed/inactivated by the

body's immune system, by antimicrobial treatment such as antibiotics or, if in the environment (for example, a floor or other surface), by chemical treatment such as disinfectant.

In healthcare settings, pathogenic microorganisms are acquired mainly through contact, droplet or airborne transmission (Table A. Modes of transmission).

Contact is a common mode of transmission in health care, usually via touch or contact with blood or body substances.

Droplet and airborne transmission are not distinctly separate modes; transmission through the air is now understood to apply to a continuum of particle sizes, from large droplets to smaller particles that dry and remain airborne for hours. Transmission via aerosols (suspensions of liquid or solid in air) spans droplet and airborne modes.

Table A. Modes of transmission

Mode	Description and typical scenarios	Examples
Contact	Microorganisms are transmitted by contact with contaminated body tissues or objects: • direct transmission – transfer from one person to another (eg from patient to health worker via contact between blood, secretions or excretions and unprotected cut on the skin) • indirect transmission (also called vehicle transmission) – transfer via a contaminated intermediate object (fomite) or person (eg via needles, equipment, contaminated surface or object, or hands after inadequate hand hygiene)	**Bacteria** • *Clostridioides difficile* (previously called Clostridium) Methicillin-resistant *Staphylococcus aureus* • Salmonella species • Vancomycin-resistant Enterococci • *Vibrio cholerae* (cholera) via contaminated water • Staphylococcus and Streptococcus species causing impetigo **Viruses** • Hepatitis B virus via contaminated multidose vial or needles • Monkeypox virus (direct or via fomites) • Norovirus • Rotavirus • SARS-CoV-2 (COVID-19) • Varicella-zoster virus **Parasites** • *Sarcoptes scabiei* (scabies)

Mode	Description and typical scenarios	Examples
Droplet	Large droplets (>5 micron) produced by an infected patient coughing/sneezing or through procedures (eg throat examination, suction, nebuliser use) can contact the mucous membranes (eyes, mouth and nose) of people within a 1-metre radius.	**Bacteria** • *Bordetella pertussis* (whooping cough) • *Neisseria meningitidis* (meningococcal infection) **Viruses** • Adenoviruses • Avian influenza viruses • Influenza • Monkeypox virus • Mumps virus • Norovirus • Rubella virus • Respiratory syncytial virus • SARS-CoV-1 • SARS-CoV-2 (COVID-19)
Airborne	Aerosols containing particles <5 micron produced by an infected patient coughing, sneezing, talking or breathing, or through procedures (eg suction, nebuliser use) can remain suspended in the air for long periods and can be dispersed in air currents. Pathogens can be transmitted when susceptible people inhale contaminated air.	**Bacteria** • *Mycobacterium tuberculosis* **Viruses** • Rubeola virus (measles) • SARS-CoV-1 • SARS-CoV-2 (COVID-19) • Varicella-zoster virus
Vector	Microorganisms are introduced by another organism, such as an arthropod (eg mosquito, flea or tick) or rodent	**Unicellular parasite** • Plasmodium (malaria) **Bacteria** • *Borreliosis* (relapsing fever) **Viruses** • Japanese encephalitis virus • Ross River virus

SARS-CoV-1: severe acute respiratory syndrome coronavirus 1; SARS-CoV-2: severe acute respiratory syndrome coronavirus 2, the causal organism of coronavirus disease 2019 (COVID-19).

Some common microorganisms can be transmitted in multiple ways. For example, measles

transmission is via airborne and droplet modes as well as direct contact with infected nasal or throat secretions and by indirect contact. Influenza and COVID-19 are spread by contact, droplet and airborne transmission.

Whether transmission of microorganisms causes clinical infection depends on the pathogenicity of the microorganism (ie its ability to cause disease) and the susceptibility of the person exposed. Other factors that affect risk of infection include the number of microorganisms transmitted (the dose) and contact with a cell type in which the microorganism can replicate (target cells).

Some people may become colonised by a potentially pathogenic microorganism but remain asymptomatic, and may become carriers who can transmit these microorganisms to others.

Resident microorganisms on skin, mucous membranes or in the gastrointestinal tract, which are normally harmless, can occasionally cause infection in the host individual (endogenous infection). This can occur due to:

- transfer from one part of the body to another (eg *Escherichia coli* from the gastrointestinal tract can cause urinary tract infection.)
- interruption of normal defences (eg a skin wound can become infected by resident skin flora such as *Staphylococcus aureus*.)

Infection prevention and control in office-based healthcare practices aims to prevent contact, droplet and airborne transmission of infections.

Resources

Australian Commission on Safety and Quality in Health Care resources supporting Australian Guidelines for the Prevention and Control of Infection in Healthcare

Basics of infection prevention and control. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

1. Principles

Overview – Principles

All staff members are involved in the practice's infection prevention and control program (see Criterion GP4.1 – Infection prevention and control, including sterilisation in the Standards).

Infection prevention and control in health care is based on:

- risk assessment and planning
- establishing policies for maintaining infection prevention and control procedures, including systematically applying the appropriate level of precautions for any situation
- education and training for all staff to implement infection prevention and control effectively and consistently.

The practice's infection prevention and control processes must be supported by up-to-date evidence and understanding of the rationale for recommended processes. Staff can keep up to date by using education and training resources and through information provided by infectious disease authorities (see Links).

Essential infection prevention and control processes include:

- hand hygiene
- respiratory hygiene and cough/sneeze etiquette
- use of personal protective equipment
- staff screening, immunisation, and infection management
- aseptic technique
- sharps management
- specific precautions against relevant modes of transmission
- cleaning, laundry and waste management
- reprocessing reusable medical devices
- managing exposure to blood and other body substances
- disease surveillance and outbreak response.

Risk assessment and planning

Infection prevention and control is part of the practice's risk management, so the general principles of risk management apply. Managing risk:

- is part of every organisation's governance and leadership
- affects all activities, and involves factors inside and outside the organisation, including human behaviour
- must be incorporated into all levels of the organisation, including infrastructure and building maintenance, administration, equipment, and work processes according to the 'hierarchy of controls' framework.

The hierarchy of controls model for assessing and managing risk ranks risk management strategies from the most effective and reliable to the least (Figure 1.1. Hierarchy of controls – infection prevention and control in general practice). Risk management plans must use the most effective controls, where possible.

The practice's risk management plan must include assessment and management of infection risk, including within the practice and off-site as relevant , such as during home visits (see Criterion C3.2 – Accountability and responsibility in the Standards). The practice could perform regular infection

prevention and control risk assessments to identify infection risks, estimate their probability and identify potential consequences.

A risk matrix can be used to calculate risk level of various situations and events (Table 1.1. Sample risk matrix). Identified risks are managed through education, training and redesign of work practices.

Infection prevention and control policies must be developed, clearly documented, and available to all staff members.

The environmental impact of infection prevention and control processes can be considered during planning. Practices can consider choosing options that reduce this impact.



Figure 1.1.

Hierarchy of controls – infection prevention and control in general practice

PPE: personal protective equipment The hierarchy of control ranks strategies from most effective (removal of the hazard) to least effective (use of personal protective equipment). The listed actions at each level are selected examples only. Source: Adapted from NIOSH (2015)[2]

Table 1.1. Sample risk matrix

Likelihood	Consequences				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	High
Unlikely	Low	Low	Medium	Medium	High

Rare	**Low**	**Low**	**Low**	**Medium**	**Medium**

Low risk	**Manage by routine procedures.**
Medium risk	**Manage by specific monitoring or audit procedures.**
High risk	**High and extreme risks are serious and must be immediately addressed. The significance and impact of such risks, should they occur, along with their likelihood of occurring, must be addressed in the context of the practice's existing strategies and controls.**
Extreme risk	

Source: Adapted from NHMRC (2019)[3]

More information: step-by-step risk planning guide

Systematically assessing the risk of cross-infection

Practices need to repeatedly reassess and manage risk as circumstances change. The broad steps are as follows:

1. Communicate and consult.
2. Establish the context.
3. Identify risks.
4. Analyse risks and evaluate risks.
5. Manage risks and identify potential safeguards.
6. Monitor and review.
7. Record key information.

Step 1. Communicate and consult

Ongoing communication with all practice staff is important to keep people informed and to identify emerging risks.

Owners, managers and infection prevention and control coordinators need to develop a culture that encourages and supports staff members to identify risks and report them.

Step 2. Establish the context

The nature and size of the risks of (cross-) infection depend on the context in which the practice operates.

Relevant factors may include:

- access or lack of access to an infectious diseases unit
- infrastructure in the local community that affects patients' ability to maintain good hygiene
- current local or national disease outbreaks
- the types of procedures performed in the practice

- whether the practice uses disposable equipment (such as instruments) or reusable medical devices that require reprocessing on site or off site
- staff members' level of training and experience in infection prevention and control
- financial constraints affecting the quality of equipment, availability of labour or conduct of infection prevention and control protocols.

Step 3. Identify risks

The practice needs to make a comprehensive list of the sources of risk, and the events that might prevent, delay or increase the achievement of effective management of the risk of (cross-) infection. This could be incorporated into the practice's work health and safety hazard identification and risk-control processes.

This involves infection risk in three areas:

- What can happen? – consider the range of activities undertaken in the practice and any associated risks
- When and where? – look around the practice building and consider risks in each area (waiting area, treatment room, consulting rooms, reprocessing area, waste area). Consider vulnerable patients such as unimmunised neonates and immunocompromised people.
- How and why? – consider any previous incidents or near-misses. Common sources of cross-infection in general practices and other office-based practices include poor ventilation or poor respiratory hygiene/cough etiquette by patients or staff. Less common events include failure of the sterilisation process.

Step 4. Analyse and evaluate risks

Generally, there are two dimensions to consider:

- magnitude of impact of an infection prevention and control incident
- the probability of the event occurring and the probability of various potential consequences of the event.

A risk matrix (Table 1.1. Sample risk matrix) can be used to map identified risks and consequences.

The practice must determine which risks have mitigation strategies in place and are determined by risk assessment to be 'controlled'.

The practice then needs to determine which infection prevention and control strategies will make the most impact on the identified high-priority risks.

Step 5. Treat risks and identify potential safeguards

Most practices have existing policies, procedures and equipment that can assist in providing safeguards against error. Despite this, a reassessment of the situation (for example, after a 'near miss') can identify vulnerabilities in these systems and processes.

Start with the potential solutions/safeguards that are easy to do and expected to have a high impact (for example, repositioning sharps containers at point of use, placing alcohol-based handrub in all patient care areas to improve hand-hygiene compliance and reduce the risk of cross-infection).

Then work through strategies that are more complex or more difficult to implement.

Step 6. Monitor and review

The infection prevention and control coordinator must keep up to date with local infection outbreaks (see Disease surveillance and outbreak response).

The team member conducting infection prevention and control risk assessment and management should also stay informed of staff members' and patients' actual day-to-day behaviour.

Set up systems to monitor and review behaviour among staff members, such as regular infection prevention and control audits, recording and reviewing the results of the sterilisation cycle, or including infection prevention and control as a discussion point in a clinical meeting after changes to policy. For example, strategies for monitoring staff members' adherence to hand-hygiene protocols might include direct observation, and monitoring the volume of hand-hygiene products used over a period of time.

Breaches in infection prevention and control procedures must be reported to the person in the practice who has the responsibility to investigate them (and report to public health authorities, if required). All breaches must be followed up and appropriate measures taken to minimise the risk of recurrence (see Criterion QI3.1 – Managing clinical risks in the Standards). Failure to act may also be considered a breach.

Step 7. Record key information

When setting up a system for recording information relevant to infection prevention and control risk assessment and management in the practice, the practice needs to determine which is useful and how it will be used.

Documentation of performance indicators might serve as a baseline for assessing the effectiveness of infection prevention and control systems.

An incident log of breaches and near-misses might be useful for feedback and training, to improve systems. However, any recorded data may be used in legal proceedings.

RACGP's Clinical risk management in general practice provides guidance on risk management, including on medicolegal risk.

Role of the infection prevention and control coordinator

The practice needs to appoint an infection prevention and control coordinator, whose role includes:

- assessing the risks of infection transmission throughout the practice
- drafting and finalising infection prevention and control policies and protocols
- regularly reviewing the infection prevention and control protocols and implementing changes in response to identified risks
- organising training and education for the entire staff about infection prevention and control protocols and assessing staff competence
- informing members of the practice team and emergency services personnel (eg firefighters, paramedics, or police officers) about how to safely use, handle, and store chemicals (or making this information easily available)
- maintaining a current register of hazardous chemicals used, handled or stored at the practice. This register needs to include the current safety data sheet for each of these chemicals and be readily available to anyone who uses or may be affected by the chemicals
- monitoring compliance with practice infection prevention and control protocols

- educating patients on infection prevention and control activities
- monitoring patients' infection prevention and control activities
- ensuring that any contractors (including cleaners, electricians, IT support) who may access premises during or after hours comply with the practice infection prevention and control protocols
- staying up to date with emerging risks (multi-resistant organisms, epidemics) by monitoring state and national infection surveillance reports.

The infection prevention and control coordinator needs to be adequately trained and competent to undertake this role and its associated responsibilities.

Legal responsibilities

Employers and managers have a responsibility under work health and safety laws to protect staff from injury at work. This includes injury to health from infections acquired in the workplace. Employers must include infection prevention and control in the practice's work health and safety policy and procedures under work health and safety legislation. Each practice must have written practice policies and procedures covering all aspects of infection prevention and control. Healthcare workers who perform procedures with a risk of exposure to blood-borne viruses may be required to undergo interval testing, and those with a known blood-borne viral infection may have monitoring and reporting requirements under public health legislation in their jurisdiction.[4] In implementing infection prevention and control measures, employers of healthcare workers must comply with relevant public health, antidiscrimination, privacy, industrial relations and equal employment opportunity legislation in their jurisdiction.

Education and training

All staff must be educated about their role in preventing the spread of infection. Education includes teaching the principles of infection prevention and control, training to perform infection prevention and control protocols correctly, and assessing competency. Such education begins at employee orientation/induction and continues as new information becomes available (eg notification of a disease outbreak).

All staff must:

- understand relevant infection risks and modes of transmission of common pathogens
- know when personal protective equipment is required and what type
- know who is responsible for ensuring that essential procedures (eg environmental cleaning) are performed and be aware of the cleaning schedule
- know what to do if there is an accident or incident that risks exposure to infection.

Key components of education on infection prevention and control

All staff must be trained in the following competencies, and demonstrate competency within a reasonable time after starting their duties at the practice:

- hand hygiene
- respiratory hygiene and cough/sneeze etiquette
- when and how to perform the appropriate level of precautions (standard precautions and transmission-based precautions)
- selection and use of personal protective equipment

- aseptic technique
- managing blood and body substance spills
- managing blood or body substance exposure (appropriate to their role)
- principles of environmental cleaning and reprocessing reusable medical devices (appropriate to their role)
- where to find information on other aspects of infection prevention and control in the practice.

Training must be provided during staff induction, within three months of commencement. Until the staff member has demonstrated competency, tasks must be done under supervision, where appropriate.

Documentation

The infection prevention and control coordinator should assess and record staff members' infection prevention and control education and competency (Table 1.2. Sample staff competency record for infection prevention and control). Ongoing auditing of competences and education may also be useful to identify training needs.

Practice employers could maintain a register of staff training and task competences in infection prevention and control, appropriate to the level required by the staff member's position.

Table 1.2. Sample staff competency record for infection prevention and control Download a sample staff competency record for infection prevention and control document

Training, knowledge and competency	Staff member		Competent Y/N	Date checked	Staff checker*	Date for re-check (if applicable)
	Name	Job role				
General						
Hand hygiene						
Respiratory hygiene and cough etiquette						
Use of appropriate personal protective equipment (including fit-checking mask)						
Fit-testing masks						
Aseptic technique						

Safe use and disposal of sharps						
Waste management						
Linen handling and laundry processes						
Transmission-based precautions						
Management of blood/other body substance spills						
Management of exposure to blood/other body substances						
Appropriate use of detergent and/or disinfectants products						
Routine environmental cleaning						
Reprocessing reusable medical devices and equipment						
Transportation						
Pre-treatment (manual and ultrasonic)						
Cleaning (manual, automatic washer-disinfector), drying, assembly/ inspection						

Packaging						
Loading steriliser						
Monitoring sterilisation cycle						
Unloading steriliser						
Storage						
Recording cycle						

*Practice to nominate an appropriate member of staff who can sign off on staff members' competency (for example, infection prevention and control coordinator)

Education and training resources

Sources of staff education and training in infection prevention and control include:

- The Royal Australian College of General Practitioners
- The Australian Primary Health Care Nurses Association
- The National Hand Hygiene Initiative
- Communicable Diseases Network Australia (CDNA)
- The Australian Commission on Safety and Quality in Health Care eLearning modules
- Australian Government Department of Health and Aged Care, including current COVID-19 infection control training
- local Primary Healthcare Networks
- Accreditation Agencies approved under the National General Practice Accreditation Scheme (check with your agency to see if they have education and training available)
- Australasian College for Infection Prevention and Control (education and credentialling)
- professional infection control experts offering customised training
- postgraduate education (eg graduate certificates, diplomas and higher degrees in infection prevention and control).

Clinical handover

Practices must develop and implement a structured system for clinical handover (within or beyond the practice), including documented policies and protocols relevant to infection prevention and control.

If a patient needs to be transferred from the practice to the emergency department (eg by ambulance), clinical staff must alert the hospital about any infection risk, such as colonisation by multi-resistant organisms.

Antimicrobial stewardship to reduce opportunities for antimicrobial resistance

Antimicrobial stewardship to reduce opportunity for antimicrobial resistance

Resistance to antimicrobials is commonly found in Australian healthcare facilities and the community. Unnecessary or inappropriate use of antimicrobials is an important cause of antimicrobial resistance.

Appropriate antimicrobial use involves prescribing according to evidence-based guidelines, selecting drug choice, indication, dose and duration to optimise clinical outcomes and minimise adverse consequences (including antimicrobial resistance, toxicity and unnecessary costs). High rates of inappropriate prescribing have been identified in Australian general practices.[1]

Infection prevention and control measures such as hand hygiene assist in reducing emergence of antimicrobial resistance, along with targeted measures such as following prescribing guidelines. Practices could consider participating in education and audit-and-feedback programs on appropriate antibiotic prescribing.

Antimicrobial stewardship involves collaboration between general practices, pharmacists and other clinicians.[2]

NPS MedicineWise collates expert recommendations on antibiotic choices for a range of conditions.

Managing risk in special circumstances

Sometimes a staff member may have a higher risk of exposure to infection, serious outcomes if exposed, or of transmitting an infectious disease.

Immunocompromised health professionals and staff

People with immune deficiencies (eg due to skin conditions, cystic fibrosis, blood-borne viruses, neutropenia, cancer treatment, HIV) are at increased risk of acquiring infections.

Management and health professionals need to decide on the type of employment that will minimise these staff members' exposure risk.

Staff with skin conditions

Staff with damaged skin or weeping skin conditions (eg allergic eczema, psoriasis or exfoliating dermatitis) may be at risk of acquiring and transmitting infections.

When healthcare workers begin employment they should be screened for skin conditions (for example, by asking about any relevant skin conditions) and informed about the risk to patients and to themselves. Damaged skin must be appropriately covered before performing procedures with patients. Special gloves, hand hygiene products or moisturiser may be needed.

Staff with cystic fibrosis

Cystic fibrosis may increase the risk of cross-infection between staff and patients. The degree of risk to patients depends on disease severity, frequency of coughing and respiratory pathogens present.

National guidelines[3] recommend that healthcare workers with cystic fibrosis do not work with patients or other healthcare workers who also have cystic fibrosis.

Health professionals with self-limiting infections

All staff members with signs and symptoms of an infectious disease (eg gastroenteritis, varicella, acute respiratory illness) should be excluded from the workplace until they are no longer infectious. Specified isolation periods may apply for notifiable diseases (eg COVID-19, influenza).

If a health professional or administrative staff member has been exposed to an infectious disease they must be referred for medical advice, appropriate testing and consideration of post-exposure prophylaxis, if available.

Staff with blood-borne viruses

Healthcare workers infected with a blood-borne virus (eg hepatitis B, hepatitis C or HIV) who perform procedures in which there is an increased risk of transmission to patients (exposure-prone procedures) must be under the care of a medical practitioner with relevant expertise and comply with national guidelines[4] and relevant legislation in their jurisdiction. Depending on viral load, the health worker may need to restrict duties (refer to guidelines by The Medical Board of Australia and The Australian Health Practitioner Regulation Agency).[5]

The practice must provide appropriate infection control measures for the staff member to work safely. It should support the staff member through training and counselling, and could offer retraining/ redeployment, if required.

Pregnant staff

Pregnant health professionals or administrative staff members may be at risk of contracting an infectious disease associated with special risk during pregnancy (eg influenza, rubella, varicella, cytomegalovirus or parvovirus) while at work. They should be advised to confirm their natural immunity/immunisation status for relevant infections and to take appropriate precautions as necessary.

Resources and references

Resources

Basics of infection prevention and control. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Antimicrobial stewardship programs. In: NHMRC. Australian guidelines for the prevention and control of

infection in healthcare (2019)

NPS MedicineWise. Reducing antibiotic resistance

Choosing Wisely Australia recommendations on antibiotic use

RACGP. Clinical risk management in general practice

Australian Health Practitioner Regulation Agency (Ahpra) Good medical practice: a code of conduct for doctors in Australia

Australian Health Practitioner Regulation Agency (Ahpra) Code of conduct for nurses

Paramedicine Board. Ahpra Guidelines: Registered health practitioners and students in relation to blood-borne viruses

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

AS ISO 31000:2018: Risk management – Guidelines

AS/NZS IEC 31010:2020: Risk management – Risk assessment techniques

References

1. Australian Commission in Safety and Quality in Health Care (ACSQHC). AURA 2021: fourth Australian report on antimicrobial use and resistance in human health. Sydney: ACSQHC; 2021.
2. Saha SK, Kong DCM, Thursky K, et al. Development of an antimicrobial stewardship implementation model involving collaboration between general practitioners and pharmacists: GPPAS study in Australian primary care. Prim Health Care Res Dev 2021; 22: e2.
3. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019). Version 11.12 Updated March 2022. Canberra: National Health and Medical Research Council; 2019 [Accesed 29 September 2022].
4. Communicable Diseases Network Australia. Australian national guidelines for the management of healthcare workers living with blood borne viruses and healthcare workers who perform exposure prone procedures at risk of exposure to blood borne viruses (revised 2019): Australian Government Department of Health; 2018 [Accessed 31 March 2022].
5. The Medical Board of Australia, The Australian Health Practitioner Regulation Agency. Guidelines: Registered health practitioners and students in relation to blood-borne viruses: Medical Board of Australia and AHPRA; 2020. [Accessed 29 September 2022].

2. Hand hygiene

Overview – Hand hygiene

The spread of infection is reduced by effective hand hygiene. Gloves are not a substitute for hand cleaning.

The use of alcohol-based handrub is now recommended for routine hand hygiene for dry, visibly clean hands, except after using the toilet, before handling or eating food/drink, or when norovirus or *Clostridioides difficile* is present or suspected – antimicrobial soap is recommended in these instances.

Note: When *Clostridioides difficile* is present or suspected, alcohol-based handrub can be used in place of soap if gloves are put on after using handrub.

Hand-hygiene facilities must be readily accessible to patients and staff and installed in or near all patient management areas including treatment areas and consulting areas.

Hand-hygiene products must be correctly selected to achieve adequate cleaning and disinfection.

If hands are washed with soap and water, they must be thoroughly dried using paper towels (for routine hand hygiene and before standard aseptic procedures) or sterile paper towels (before surgical aseptic procedures).

All staff must be educated on effective hand hygiene and hand care.

Practices could also encourage patients to practise good hand hygiene, for example by displaying posters in waiting areas.

The National Hand Hygiene Initiative provides information and resources, including education.

Role of hand hygiene in infection prevention and control

Many respiratory and gastrointestinal infections (eg influenza and gastroenteritis) can be transmitted by hands. Consistent use of effective measures to reduce transmission of microorganisms from hands is an essential element of all infection prevention and control policies.

Microorganisms can be transmitted by healthcare workers' hands during patient care. Improved hand hygiene can reduce healthcare-associated infections, including those with multi-resistant microorganisms.

Objects and surfaces that patients touch (eg pens, chairs, and door handles) are potential sources of infection. Toys and reading materials (eg magazines and books) may act as fomites (ie part of the chain of transmission of infection), so they should not be provided in practices (including waiting areas and consulting rooms).

Encouraging patients to follow effective hand hygiene practices can decrease microorganism transfer and the risk of healthcare-associated infection.

Methods of hand hygiene suitable for healthcare practices include use of alcohol-based handrubs, washing with neutral liquid soap, and washing with antimicrobial liquid soap, depending on the situation (Table 2.1. Methods of hand hygiene). The use of alcohol-based handrub is now recommended for routine hand hygiene of visibly clean hands, except after using the toilet, before handling or eating food/drink, or when norovirus is present or suspected. Gloves are not a substitute for hand hygiene.

Practices could assess appropriate moments for patient hand hygiene and provide suitable facilities,

such as alcohol-based handrubs at the reception desk and in the waiting room.

Table 2.1. Methods of hand hygiene

Level of hygiene	Technique	Duration of contact with cleansing product	Drying	When

Level of hygiene	Technique	Duration of contact with cleansing product	Drying	When
Routine hand cleaning for hands	**Alcohol-based rub method:** 1. Check hands are dry and not visibly soiled. If visibly soiled, use soap and water method. 2. Apply alcohol-based handrub, using the volume recommended in product information. 3. Rub vigorously over all surfaces of hand, as when washing hands, ensuring solution contacts all surfaces of the hand. Pay particular attention to fingertips, thumbs, and areas between fingers. 4. Keep rubbing until hands are completely dry.	20–30 seconds until dry ❗	Rub hands until dry, without wiping	Arriving/leaving work Entering/leaving clinical areas Before using computer keyboard or device screens in clinical areas Before and after patient contact when hands are not visibly soiled Before putting on gloves and after removing gloves After touching objects (eg equipment, items around the patient, keyboard, device screens) and the patient environment.

Level of hygiene	Technique	Duration of contact with cleansing product	Drying	When
	Soap and water method: 1. Wet hands under tepid water. 2. Apply plain liquid soap, using the volume recommended in product information. 3. Rub hands together, ensuring solution contacts all surfaces of the hand. Pay particular attention to fingertips, thumbs, and areas between fingers. 4. Rinse thoroughly. 5. Use paper towel to turn off tap (if not hands-free tap). 6. Pat hands dry with single-use towels.	20 seconds minimum	Paper towel	As for alcohol-based handrub In addition: Before handling food or drink After going to the toilet When hands are visibly soiled

Level of hygiene	Technique	Duration of contact with cleansing product	Drying	When
Standard aseptic (clinical) procedures	**Alcohol-based rub method:** 1. Check hands are dry and not visibly soiled. If visibly soiled, use soap and water method. 2. Apply alcohol-based handrub, using the volume recommended in product information. 3. Rub vigorously over all surfaces of hand, as when washing hands, ensuring solution contacts all surfaces of the hand. Pay particular attention to fingertips, thumbs, and areas between fingers. 4. Keep rubbing until hands are completely dry.	20–30 seconds until dry	Rub hands until dry, without wiping	Before any procedures that require a ‘no-touch’ technique

Level of hygiene	Technique	Duration of contact with cleansing product	Drying	When
	Liquid antimicrobial cleanser method: 1. Wet hands under tepid water. 2. Apply plain liquid soap, using the volume recommended in product information. 3. Rub hands together, ensuring solution contacts all surfaces of the hand. Pay particular attention to fingertips, thumbs, and areas between fingers. 4. Rinse thoroughly. 5. Use paper towel to turn off tap (if not hands-free tap). 6. Pat hands dry with single-use towels.	20 seconds minimum	Paper towel	

Level of hygiene	Technique	Duration of contact with cleansing product	Drying	When
Surgical aseptic procedures	**Surgical handrub method:** ❗ 1. Remove jewellery. Check hands are dry and not visibly soiled. If visibly soiled, use soap and water method. 2. Apply alcohol-based handrub, using the volume recommended in product information. 3. Rub vigorously over all surfaces of hand, as when washing hands, ensuring solution contacts all surfaces of the hand. Pay particular attention to fingertips, thumbs, and areas between fingers. 4. Keep rubbing until hands are completely dry.	Follow manufacturer's directions		Before surgical procedures

Level of hygiene	Technique	Duration of contact with cleansing product	Drying	When
	Liquid antimicrobial cleanser method: 1. Remove jewellery. 2. Wet hands and forearms. 3. Wash with antimicrobial cleanser (4% chlorhexidine or 0.75% detergent-based povidone or 1% aqueous povidone). 4. Clean under nails only if needed with a nail pick (do not scrub hands with nail brush as they can break the skin and be a source of infection). 5. Rinse carefully, keeping hands above elbows. 6. Ask another staff member to turn off taps or use sterile towel (if not hands-free tap).	20 seconds minimum ❗	Sterile disposable paper towels or Sterile linen towels	

When hands must be cleansed

Hands must be cleansed (following standardised procedures for hand hygiene) before and after every episode of patient contact and after activities that may cause contamination. These include:

- before and after eating
- before and after routine use of gloves
- after handling any used medical devices (eg instruments or equipment)
- after going to the toilet
- when visibly soiled or perceived to be soiled
- before and after every procedure
- before and after any contact with patients.

5 moments for hand hygiene

'5 moments for hand hygiene' (Table 2.2. The 5 moments of hand hygiene) is a simple strategy developed by the World Health Organization and adopted by the National Hand Hygiene Initiative to:

- protect patients from transmission of infectious agents from the hands of healthcare workers
- help to protect patients from infectious agents (including their own) entering their bodies during procedures
- protect healthcare workers and the healthcare surroundings from acquiring patients' infectious agents.

Table 2.2. The 5 moments of hand hygiene

1. Before touching a patient 2. Before a procedure 3. After a procedure or body substance exposure risk 4. After touching a patient 5. After touching a patient's surroundings.

Source: National Hand Hygiene Initiative[1]

Facilities for hand hygiene

Hand hygiene facilities (alcohol-based handrub dispensers or sinks) must be provided in all examination and treatment areas and in or close to toilets (ie either in the cubicle or immediately outside it, not in an adjacent room).

Alcohol-based handrub should be provided in disposable cartridges with disposable nozzles, designed for hands-free dispensing. Refillable dispensers must not be used. Alcohol-based handrub should not be placed near a sink, but at point of care and other work areas such as workstations in a reprocessing room.

When building new premises or upgrading existing premises, consider installing hands-free or elbow-operated taps for handwashing, where required. Paper towel dispensers must be installed at sinks.

When working offsite, use alcohol-based handrub.

Hand-hygiene products

The person with the designated responsibility for infection prevention and control needs to consider:

- the level of hand-hygiene and corresponding handwashing routines required in each area
- compatibility of agents used to clean, wash and condition hands
- hand care – hand-hygiene products containing moisturisers and emollients to protect the hands are usually required, as supermarket-bought products designed for intermittent domestic use may dry the skin.
- safety issues (eg alcohols are flammable and may also cause irritation if splashed into the eyes)
- whether all hand-hygiene products are chemically compatible. Practices can consider choosing hand-hygiene products and hand-care products from a range developed by the same manufacturer and formulated for chemical compatibility.

An alcohol-based handrub product is generally preferred to antimicrobial cleanser/soap for aseptic hand hygiene when hands are visibly clean.

The practice's policy and procedure manual could include specifications and locations of hand-hygiene facilities and protocols, for the benefit of new staff.

> ⚠ Cleaning hands with plain liquid hand soap or detergent wipes, followed by alcohol-based handrub (as recommended in the past), is now not generally recommended due to increasing risk of skin irritation/allergy, particularly if products are not chemically compatible.

Alcohol-based handrubs

Alcohol-based handrubs (liquid or gel) are designed to be used without water. They should be used in preference to soap and water for hand hygiene, except when hands are visibly soiled, after using the toilet, before handling food or eating, when the presence of norovirus (or any pathogen resistant to alcohol) is known or suspected.

Hands must be dry before using alcohol-based handrub.[1]

When used correctly, alcohol-based handrubs designed for routine hand hygiene or surgical hand hygiene are more effective than plain soap or antimicrobial soap and water against many pathogenic microorganisms on hands.

For routine hand-hygiene, use alcohol-based rubs with an alcohol concentration of between 60% and 80% volume per volume ethanol or equivalent and meet the current relevant standard for bactericidal effect of hygienic handrub.

For surgical hand hygiene, use an alcohol-based handrub intended for presurgical hand antisepsis and registered by Therapeutic Goods Administration for that purpose, to ensure it meets the current relevant standard for surgical hand disinfection.

Alcohol-based rubs should be placed at the point of care and also accessible in all areas of the practice,

including at reception, to encourage use by administrative staff and patients as well as health professionals. They are also suitable for offsite use (eg during home visits).

Practices must use only products that are approved by the Therapeutic Goods Administration for use as hand hygiene products for healthcare settings. Other alcohol-based handrubs or hand washes marketed as sanitisers for general consumer use are not appropriate for use in clinical settings.

Alcohol-based handrubs must always be used according to product directions.

Liquid hand-cleansers/soaps

Washing with liquid cleansers is recommended when hands are visibly soiled, after using the toilet, before handling food or eating, or when the presence of norovirus (or any pathogen resistant to alcohol) is known or suspected. These also facilitate mechanical removal of microorganism spores.

Liquid hand cleansers can contain plain soap with moisturiser and emollient (used for routine hand hygiene), or also contain antimicrobial agents such as chlorhexidine or povidone-iodine (used for hand hygiene before surgical aseptic procedures). Skin problems can develop with routine use of antimicrobial soaps. They are not required for routine hand hygiene.

People using chlorhexidine products can develop skin reactions and/or hypersensitivity. If a staff member has an allergy to chlorhexidine, an alternative antimicrobial product, such as povidone-iodine, could be considered. It is also possible that the use of chlorhexidine (as for other disinfectants) in health care might lead to antimicrobial resistance,[2] although the mechanism and level of risk is not well understood.[3]

Dispensers

A dispenser with an integrated disposable container and dispensing nozzle is recommended when liquid hand-cleaning agents are used. When empty, the whole unit (container and nozzle) must be safely discarded. Refillable pump containers must not be used in healthcare facilities due to the risk of contamination.

Alcohol-based handrub dispensers should not be placed near heat sources and electric motors.

Soap bars

Bar or cake soaps can harbour microorganisms when left wet. They must not be used in general practices and other office-based practices.

Hand hygiene technique

Technique using alcohol-based handrub

Correct use of alcohol-based handrub involves dispensing the volume of handrub recommended in the product information, rubbing vigorously over all surfaces of hands, and continuing to rub until hands are completely dry (eg 20–30 seconds) (Table 2.1. Methods of hand hygiene).

Technique using liquid hand cleansers

Correct use of liquid handwash or liquid antimicrobial cleanser involves wetting hands under tepid water, dispensing the volume of handrub recommended in the product information, rubbing vigorously over all surfaces of hands (minimum of 20 seconds), rinsing thoroughly, and patting hands dry (Table 2.1. Methods of hand hygiene).

Drying hands

If liquid handwash and water is used for hand hygiene, hands must be thoroughly dried afterwards, using a patting (not rubbing) action. The use of paper towels is now considered to be best practice and it should be supplied wherever liquid handwash and water is used for hand hygiene. If cloth towels are used, they should be used only once and then laundered appropriately (see 9. Cleaning, laundry and waste management).

Incomplete drying can cause chapping/chafing and skin damage, which favours bacterial growth and can lead to colonisation with potentially pathogenic microorganisms – increasing the risk of transmission to patients during procedures.

Drying hands after routine handwashing: Single-use paper towels should be used for drying hands in treatment areas, consulting areas and equipment reprocessing areas.

Hot air dryers are unsuitable for clinical use. Jet dryers achieve quicker drying times, which reduces microorganism growth on hands, but they increase the spread of microorganisms through the air. Slower hot air dryers reduce the spread of microorganisms through the air, but the slower drying times result in more microorganism growth on hands. The use of hot air driers is acceptable only in toilets.

Drying hands for standard aseptic procedures: If a liquid cleanser (eg soap and water) is used for hand hygiene before standard aseptic procedures, hands must be dried, ideally using disposable paper towels.

Drying hands for surgical aseptic procedures

If a liquid cleanser (eg antimicrobial soap) is used for hand hygiene before surgical aseptic procedures, sterile disposable paper towels or single-use sterile cloths must be used for drying hands. Reusable sterile cloths must be laundered appropriately (see 9. Cleaning, laundry and waste management).

Hand care

Staff must practise routine hand care (including care of fingernails and skin) to prevent the risk of infection to themselves and others.

Fingernails

Nails should be kept clean and short (ideally, not past the tip of the finger pad), because areas under

nails can harbour high concentrations of bacteria, even after handwashing.

Nails and cuticles should be kept smooth because rough surfaces harbour foreign matter and make it harder to clean skin and nails.

The use of nailbrushes is not recommended because brushing can abrade skin. A nail pick can be used if necessary (such as before performing procedures that require surgical hand hygiene and nails are visibly dirty).

Skin integrity

Intact skin is an effective natural defence against the entry of pathogens and subsequent infection. Broken skin can be the site of bacterial growth and may facilitate the transmission of infection.

Skin can become dry and dermatitis can develop if handwashing water is too hot or too cold, if too much handwashing solution is used, or if hands are not thoroughly rinsed and dried. Gloves and latex allergy may also contribute to skin problems.

Drying hands after washing, the use of chemically compatible hand creams, and attending to breaks in the skin are essential aspects of hand care. Cuts and abrasions must be covered with water-resistant dressings before commencing or recommencing work. These need to be changed if they become soiled or loose.

If skin irritation occurs, hand hygiene technique should be reviewed. If a staff member develops a persistent skin irritation, or identifies a particular soap, antiseptic agent or alcohol-based product associated with skin irritation, they must consult the practice member with designated responsibility for infection control or work health and safety.

Clinical staff experiencing dermatitis or other skin disorders must seek medical advice before performing any activity that could pose a risk to themselves or to patients.

Use of hand cream

To combat the drying effects of regular hand cleaning, use suitable aqueous-based emollient hand creams with barrier protection that are compatible with the selected hand-hygiene products.

Emollient hand cream should be applied approximately 2–4 times each working day (including before starting work each day, at least once during the day, and at the end of the working day).

Creams and ointments must not be used:

- before donning gloves, as oil-based preparations may cause latex gloves to deteriorate and can contaminate medical devices such as instruments and equipment
- while reprocessing reusable medical devices, because they can leave a residue that could compromise sterility.

Jewellery, nail polish and artificial nails

Note: Guidance on jewellery, nail polish and artificial nails is principally intended for procedural general practice.

Health professionals should not wear rings at work because they interfere with hand-hygiene techniques and the skin under rings may be more heavily colonised by microorganisms than comparable skin without rings.

Freshly applied nail polish on natural nails does not increase the microbial load if fingernails are short. However, it should be removed before rough edges or chipping develop.

False fingernails may harbour microorganisms, especially Gram-negative bacilli and yeasts, even after handwashing.

Health professionals when providing direct patient care should adhere to a 'bare below the elbow' policy, including short sleeves, to ensure hands (and, if necessary, wrists and forearms) can be decontaminated effectively. This is particularly important for treatment room procedures.

Each practice could develop policies on jewellery, artificial nails and nail polish for other situations, based on risk assessment (see also: Clothing and other wearable items).

Hand hygiene with glove use

Gloves must be used in line with standard and transmission-based precautions (see 3. Personal protective equipment).

Hand-hygiene is required before putting on gloves and after removal of gloves.

Gloves do not provide complete protection against contamination by microorganisms because they can penetrate small defects in the glove material. Gloves also cause hands to sweat, which can increase contamination on the skin under the gloves.

Hand hygiene when specific pathogenic microorganisms are present or suspected

The use of plain or antimicrobial liquid soap and water is recommended to facilitate mechanical removal of bacterial spores (eg when *C. difficile* present or suspected), or when non-enveloped viruses (eg hepatitis A virus, norovirus, rotavirus, poliovirus) are present or suspected.

It is also recommended if any of the following has occurred:

- The person was not wearing gloves when the possible contamination occurred.
- Gloves were breached
- There is visible hand contamination despite glove use.

After washing, hands must be dried thoroughly with a single-use towel.

Alcohol-based handrubs are less effective against these organisms, which can survive for extended periods on surfaces. Therefore, soap and water should be used where faecal contamination is possible.

Other factors affecting practice hygiene

Clothing and other wearable items

Avoid wearing lanyards, long chains and neckties as evidence indicates they may facilitate transmission of infection.

Where there is a risk of clothing splash by blood and other body substances, it is recommended that staff wear uniforms or sensible clothing as well as the appropriate personal protective equipment. Healthcare workers who wear uniforms should wear a clean uniform for each shift. If work attire has been contaminated with blood or body substances, it should be changed immediately and laundered appropriately.

If a practice requires the use of uniforms, it should either make provisions to launder them or provide information to the employee regarding infection control and cleaning guidelines for the item based on the tasks being performed. Health-care facilities can address the need to provide this service and determine the frequency for laundering these items.

Animal entry policy

The practice should develop a policy about which animals (eg assistance animals, therapy animals) can be allowed into the practice and in which areas, and the infection prevention and control protocols that must be implemented (eg hand hygiene, cleaning after visits).

Hand hygiene for patients

Practices should participate in educating patients on the importance of hand hygiene to prevent healthcare-acquired infections. Strategies include providing alcohol handrub prominently and requesting patient use it on entry, and displaying key messages (eg in posters in waiting and reception areas).

Key messages for patients about hand hygiene include the following:[3]

- Hand hygiene is the most important way to reduce our risk of infection – this applies to everyone, including healthcare workers and patients.
- Alcohol-based handrub does not work properly on dirty hands – wash visibly soiled hands in liquid soap and water.
- When you wash your hands (with liquid soap and water or with an alcohol-based handrub), the cleansing product must reach all parts of the surface of your hands.
- You must dry your hands properly after washing soap and water – pat them dry with a clean paper towel.
- If you use an alcohol-based handrub, keep rubbing your hands until they are dry – there is no need for a towel.
- Your health professionals should have short, smooth, clean fingernails.
- It is OK to ask your health professional about whether their hands are clean.

The '5 moments for hand hygiene' reminds patients and staff when to clean their hands to reduce the risk of infection:

- before touching a patient
- before a procedure

- after a procedure or body fluid exposure risk
- after touching a patient
- after touching a patient's surroundings.

Resources and references

Video demonstration of hand-hygiene technique using alcohol-based handrub: Johns Hopkins Medicine. Department of Hospital Epidemiology and Infection Control. Hand Rubbing Steps Using the WHO Technique

Video demonstration of handwashing technique using soap and water: Johns Hopkins Medicine. Department of Hospital Epidemiology and Infection Control. Hand-washing Steps Using the WHO Technique

Hand hygiene. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

National Hand Hygiene Initiative user manual (2019)

The National Hand Hygiene Initiative

Australian Commission on Safety and Quality in Healthcare Alcohol-based handrubs and eLearning modules, which include:

- *Hand Hygiene for non-clinical healthcare workers*
- *Hand Hygiene for clinical healthcare workers.*

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

AS 1071 – Placement and presentation of hand hygiene materials in relation to the basin in healthcare settings

Other relevant standards

European Standard EN 1500 – hygienic handrub

European Standard CEN-EN 12791 – surgical hand disinfection

References

1. Australian Commission on Safety and Quality in Health Care. National Hand Hygiene Initiative manual. Sydney, NSW: ACSQHC; 2019. [Accessed 3 October 2022].
2. Kampf G. Acquired resistance to chlorhexidine - is it time to establish an 'antiseptic stewardship' initiative? J Hosp Infect 2016; 94: 213-227.
3. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019). Version 11.12 Updated March 2022. Canberra: National Health and Medical Research Council; 2019 [Accessed 29 September 2022].

3. Personal protective equipment

Overview – Personal protective equipment

Personal protective equipment includes gloves, fluid-impermeable aprons, gowns, masks, purpose-designed protective glasses, goggles and face shields.

The appropriate personal protective equipment in any clinical situation depends on the risk assessment and the type of clinical procedure or activity.

When used as part of standard precautions (see 5. Levels of precaution), personal protective equipment protects against anticipated exposure to blood or body substances. When used as part of transmission-based precautions, personal protective equipment serves as a physical barrier against the specific modes of transmission identified in risk assessment.

Gloves must be worn by staff at risk of exposure to blood or body substance, or at risk of a disease transmissible by contact. Gloves are mandatory for procedures that involve direct contact with sterile tissue or body cavities, mucous membranes or non-intact skin.

Face and eye protection must be used when there is a risk of splashing or spraying of blood or body substances, such as during surgical procedures, or when there is a risk of droplet or aerosol generation, such as during aerosol-generating procedures, and when cleaning reusable medical devices.

Wear aprons or gowns when there is a risk of soiling clothing from splashes of blood or body substances. Also consider wearing them when there is a risk of contact transmission of pathogenic microorganism, based on a risk assessment.

Sterile gowns are worn for some surgical procedures, when required based on risk assessment (see 4. Aseptic technique).

Masks musts be worn by staff and patients whenever there is a risk of droplet or airborne transmission, ❗ and during surgical procedures to protect the surgical site.

Personal protective equipment must be applied and removed in the correct order to prevent transmission of infection (Applying and removing personal protective equipment).

Personal protective equipment is designed for single use (for example, to be worn during a consultation with one patient or during a single procedure), then disposed of (gloves, masks, face shields) or appropriately laundered (gowns). However, some items of personal protective equipment are sometimes worn for a longer period (extended use) in special circumstances, such as during a pandemic.

General principles of personal protective equipment use

Personal protective equipment refers to a variety of barriers (eg gloves, fluid-resistant aprons, gowns, masks, purpose-designed protective glasses, goggles, full face shields) used to protect mucous membranes, airways, skin and clothing from contact with blood and body substances (including airborne infectious agents from the respiratory tract) or with contaminated objects/surfaces (Table 3.1. Recommended use and characteristics of personal protective equipment).

The appropriate use of personal protective equipment depends on the situation and the assessed risk to staff or patients. Factors to consider include the probability of exposure, the type of body substance involved, and the probable type and route of transmission of microorganisms. For example, examination gloves are used as a standard precaution for low-risk procedures where there is a

likelihood of exposure to a patient's blood or body substance, whilec P2/N95 masks may be needed during a respiratory disease outbreak.

When used as part of standard precautions (see 5. Levels of precaution), personal protective equipment protects against anticipated exposure to blood or other body substances. When used as part of transmission-based precautions, ❗ personal protective equipment serves as a physical barrier against the specific modes of transmission identified in risk assessment. ❗

Table 3.1. Recommended use and characteristics of personal protective equipment

Item	Use	Characteristics
Sterile surgical gloves	To prevent contact between health worker's skin and patient's body, or body substances, during aseptic procedures or surgical procedures Single-use for one procedure	Flexible and tightly fitting to avoid compromising wearer's dexterity Composed of latex, synthetic latex or synthetic elastomer Disposable
Nonsterile examination gloves	To prevent contact between health worker's skin and patient's body, or body substances, during procedures that require a 'no-touch' technique Single-use for one procedure	Composed of latex or synthetic materials (eg vinyl, nitrile, or neoprene) Disposable
General-purpose utility gloves	To prevent contact between staff member's skin and blood/other body substances or contaminated equipment or surfaces Multiple use, for activities that do not involve patient care, such as cleaning surfaces	Longer cuff Composed of nitrile, latex or combined material Chemically resistant Puncture-resistant Reusable (after washing) or disposable

Item	Use	Characteristics
Heavy-duty protective gloves	To prevent contact between staff member's skin and blood/other body substances, contaminated objects or chemicals For instrument cleaning or other activities with a high risk of contact with blood, other body substances, contaminated objects, sharps or chemicals Multiple use, for activities that do not involve patient care Uncomfortable and potentially hazardous due to poor dexterity and touch sensitivity	Heavy-duty Puncture-free Chemical-resistant Washable
Surgical mask	To provide a physical barrier between the mouth and nose of the wearer and the surrounding air. Worn by : • health workers during surgery, or when in close proximity to patients, or whenever droplet precautions required to prevent droplet transmission • patients with respiratory infection or cough • community during a respiratory pandemic. Single-use, for one procedure or episode of patient care	Fluid-resistant Ties or ear loops Disposable
N95/P2 mask	To protect wearer and others from exposure to airborne particles including pathogenic airborne particulates such as viruses and bacteria Single-use, for one procedure or episode of patient care (see also Extended use of personal protective equipment)	Close seal around nose and mouth (fit-tested; fit check required at time of use) Levels of particulate filtration depends on grade (eg N95 respirators are effective in removing a minimum of 95% of solid and liquid aerosols that do not contain oil) Two head loops (not ear loops) Disposable

Item	Use	Characteristics
Eye protection	When performing procedures where there is a risk of splashing or spraying of blood or body substances (eg surgical procedures, venipuncture, cleaning of reusable medical equipment) For single or multiple use, depending on type	Includes goggles, safety glasses, and full-face shields Clear, anti-fogging material Efficacy depends on seal around eyes (goggles provide more effective seal than safety glasses)
Face shield	For additional protection from splash contact during procedures or cleaning For additional protection from droplets (eg coughing, sneezing) while wearing a mask Single-use	Clear, anti-fogging material Extends around to ears and below chin
Plastic apron	When there is the possibility of sprays or spills or exposure to blood or body substances during low-risk procedures During contact precautions when patient contact is likely Single-use, for one procedure or episode of patient care	Fluid-resistant Disposable
Nonsterile gown	To prevent contamination of healthcare worker's limbs or clothing with blood, other body substances, or other potentially infectious material When there is a risk of contact of the healthcare worker's skin with a patient's broken skin, extensive skin to skin contact (eg lifting a patient with scabies) When there is a risk of contact with blood and uncontained body substances (eg vomiting) When there is a possibility of extensive splashing of blood and body substances or risk of exposure to large amounts of body substances (eg in some operative procedures) Usually single use (see also Extended use of personal protective equipment)	Fluid-resistant Long sleeved and cuffed so clothing and exposed upper body areas are protected Generally worn in combination with gloves and with other personal protective equipment when indicated

Item	Use	Characteristics
Sterile gown	During procedures that require surgical aseptic technique (if required based on risk assessment) Single-use, for one procedure or episode of patient care	Pre-packaged in sterile pack

Source: National Health and Medical Research Council,[1] Therapeutic Goods Administration[2]

When to use personal protective equipment

Standard use and use during outbreaks

Standard use

Personal protective equipment is designed and issued for a particular purpose in a protected environment and should not be worn outside that area.

Personal protective equipment is used in areas where there is high risk of contamination (eg masks and sterile gowns worn in areas where surgical procedures are performed, or a nonsterile gown and gloves worn while cleaning a spill of blood or other body substance) and must be removed before leaving the area.

Gowns must be removed after contact with the patient (and replaced, if necessary), before contact with the next patient. Even where there is a lower risk of contamination, protective clothing that has been in contact with patients must not be worn outside the designated area. For example, scrub suits worn for surgical procedures are not worn outside of the designated area (this does not apply to a scrub suit worn as a uniform or as preferred work attire).

During outbreaks

Personal protective equipment is also used routinely when there is a risk of infection (eg during an epidemic or pandemic).

Usage in these circumstances may differ from standard use. Some items may be worn for longer than normally recommended (see Extended use of personal protective equipment).

During a disease outbreak, health departments will issue guidance on which items of personal protective equipment should be worn in which clinical situations, according to an expert risk assessment based on the relevant pathogen.

Gloves

The risk assessment and the type of clinical activity determine whether to wear gloves and which type are needed. Gloves must be worn in line with:

- standard and surgical aseptic technique (see Aseptic technique)
- standard and transmission-based precautions (see Levels of precaution).

Correct fit and type of gloves are essential to their effectiveness in infection prevention and control.

When gloves are worn with other personal protective equipment, they are put on last and removed first.

Types of gloves

Sterile surgical gloves are used for some standard procedures and all surgical aseptic procedures and contact with sterile fields or equipment. Compared with standard gloves (eg examination gloves), these type of gloves:

- are more protective – even in thickness with low risk of defects in the material
- enable superior dexterity – necessary for performing procedures and reducing the risk of sharp injury.

Clean (nonsterile) single-use examination gloves are used for procedures that do not require surgical asepsis, procedures where there is a risk of exposure to patient blood or body substances, and procedures where there is contact with non-intact skin and mucous membranes (eg venipuncture, vaginal or rectal examination) and minor procedures.

Nonsterile gloves are available in a range of materials such as natural rubber latex and synthetic materials (eg vinyl, nitrile, or neoprene). Latex gloves enable the wearer to maintain dexterity, but sensitivity and allergy can occur. Practices could document which staff members and patients have latex allergy and provide alternative glove types.

General-purpose utility gloves (eg kitchen gloves) are used for activities that do not involve patient care, such as cleaning surfaces.

Heavy-duty, puncture- and chemical-resistant gloves must be used for instrument cleaning. These gloves can be reused after washing and drying.

Fitting protective gloves

When wearing gloves with a long-sleeved gown, ensure that gloves extend at least 5 cm past the gown cuffs or sleeves.

Changing gloves

Sterile or nonsterile gloves must be changed:

- after contact with each patient
- between procedures on the same patient
- if they are damaged during a procedure
- after finishing the procedure or task
- before handling notes, computer keyboards or telephones.

Removing and disposing of protective gloves

Correct handling of used gloves (sterile or nonsterile disposable gloves) is important to reduce the risk of infection to the staff member. Remove gloves inside out and hold by the cuff edge to minimise

contamination of hands (Figure 3.1. Method for putting on and removing gloves). Dispose of gloves into the appropriate waste stream as soon as they are removed. Cleanse hands after removing gloves (see 2. Hand hygiene). **Figure 3.1 Method for putting on and removing gloves**



Figure 3.1

Method for putting on and removing gloves

Table 3.2. Method for putting on and removing gloves

Putting on gloves 1. Perform hand hygiene and ensure your hands are completely dry. 2. Handle the glove at the top edge of its cuff and create an opening using your thumb and four fingers. 3. Ease your hand into the glove and gently pull the cuff over your wrist until it comfortably fits. 4. With your bare hand, take the second glove at the top edge of its cuff. 5. Repeat step 3. with the second glove on your other hand.
Removing gloves 1. Pinch the outside of one glove near the wrist 2. Peel the glove off so it ends up inside out. 3. Keep hold of the peeled-off glove in your gloved hand while you take off the other glove. 4. Use one or two fingers of your non-gloved hand inside the wrist of the other glove to peel off the second glove from the inside, and over the first glove, so you end up with the two gloves inside out, one inside the other. 5. Dispose of the gloves safely and perform hand hygiene.

Latex sensitivity/allergy

Most people can safely wear latex surgical gloves. However, occupational use of latex gloves is associated with both non-allergic irritant dermatitis and allergy: allergic contact dermatitis, and systemic (immediate hypersensitivity) reactions.[3]

Non-allergic irritant dermatitis is the most common reaction to gloves. It causes rough, dry and scaly skin, sometimes with weeping sores.[4]

Latex allergy is a reaction to proteins in latex rubber. Latex allergy can develop over time with frequent exposure to latex proteins, and mostly affects nurses, doctors, dentists and patients who have had multiple operations. Powdered latex gloves should not be used as they increase the risk of allergy.

Allergic contact dermatitis is the most common allergic reaction to latex. It causes a rough, dry scaly rash, sometimes with weeping sores, on the hands and where the gloved hands have touched other body parts such as the face. Allergic contact dermatitis usually appears 12–46 hours after contact with latex.[4]

Latex allergy can also cause a more severe allergic reaction characterised by an itchy red rash within minutes of exposure, which can be accompanied by itchy red eyes, runny nose and sneezing, and occasionally asthma.[5] Very severe or life-threatening allergic reactions (anaphylaxis) to latex are rare.[6]

Healthcare professionals with atopic dermatitis and eczema on their hands appear to be at greater risk of becoming sensitised to latex proteins, indicating that careful attention to hand care (hand washing technique and barrier protection) is important to minimise risk.[3]

If latex sensitivity/allergy has occurred or if latex allergy is suspected, the staff member must undergo medical assessment. Implement risk management strategies such as latex-free work areas.

There is no risk of latex allergy with the use of nonlatex gloves such as those made from nitrile or neoprene. These gloves must be used when treating patients with latex allergies and by staff with latex

allergies.

Face and eye protection

Use eye protection, such as goggles and safety glasses, when performing procedures where there is a risk of splashing or spraying of blood or body substances (eg surgical procedures, venipuncture, cleaning of reusable medical equipment) or respiratory droplets from multiple angles. Face shields provide additional face and mouth protection against splash contact.

Safety glasses, masks with visors and full face shields are less effective than goggles for protecting the eyes from airborne transmission due to gaps around the eyes.

Personal glasses, such as prescription spectacles, are not acceptable personal protective equipment due to gaps around the eyes. Eye protection must be worn over spectacles. Prescription glasses with an inner plastic shield and side protection can also be purchased.

Goggles and face shields must be clear, antifogging, distortion free, close-fitting and, ideally, closed at the sides. Goggles or face shields are fitted over the top of regular prescription glasses, if worn. Newer styles of goggles fit over prescription glasses with minimal gaps.

When wearing goggles or a face shield, it is important not to touch the goggles or face shield. If touching occurs, hand hygiene is required before recommencing a task.

Care is needed when removing and disposing of eye protection:

- Take care to remove using the stems only.
- If disposable, discard into the appropriate waste stream.
- If reusable, wash with soap and water and dry, then use disinfectant selected for the most likely pathogens, allowing the required wet contact time before drying.
- Store covered to avoid contamination, for example in a large paper bag.

Correct handling of used protective eyewear/face shields is important in preventing the risk of infection to staff.

Aprons and gowns

Aprons or gowns must be worn by staff when there is a risk of contamination of skin or clothing with blood, body substances, secretions or excretions other than sweat (eg when performing surgical excisions or throat/nasal swabs when there is risk of infection). The type of apron or gown must be appropriate to the task and the degree of risk.

Wear aprons and gowns for a single procedure or episode of patient care (unless extended use is directed), and remove them in the area where the episode of care takes place.

When wearing a gown or apron, do not touch the outside of the front or sleeves.

Cleanse hands after removing the gown or apron (see Hand hygiene).

Aprons

Single-use plastic aprons are suitable for general use when there is a risk that clothing may be exposed to blood or body substances during low-risk procedures, and where there is a low risk of contamination

to the arms. Aprons can be worn during contact precautions.

Gowns

Gowns are worn to protect skin and prevent soiling of clothing. The choice of gown depends on the activity. For example, a full body gown (in combination with other personal protective equipment) must be worn when there is a possibility of extensive splashing of blood or other body substances such as vomitus or uncontrolled faecal matter, or as advised by national or state and territory health authorities during an infectious disease outbreak with contact and droplet modes of transmission.

Sterile gowns are also worn during some surgical procedures, as part of surgical aseptic technique to protect the surgical site.

Types of gowns

Gown designs include disposable or reusable, short-sleeved or long-sleeved, and with fabric or elasticised cuffs. They are secured at the back and cross one side over the other at the back to prevent a gap. Sterile pre-packaged gowns are available.

Putting on a protective gown

Put on the gown with the opening at the back. Secure the tapes at the back, with the two sides of the gown overlapping before tied, to prevent the gown opening and clothes becoming contaminated.

Removing aprons and gowns

Remove aprons and gowns in a manner that prevents contamination of clothing or skin. Undo fasteners or ties (without snapping ties) and remove the gown inside-out, taking care not to touch the outside of the gown. Roll the gown to mid-point.

If disposable, dispose of it into the appropriate waste stream.

If reusable, place the gown into a designated linen container so it can be washed and dried appropriately before reuse.

Masks (surgical masks and N95/P2 masks)

Use masks when there is a risk of droplet or airborne transmission of infection by breathing.

They can also be worn by patients to prevent droplet or airborne transmission. ❗

It may be appropriate for children to wear appropriately fitted masks in some situations. Monitor oxygen saturation if clinically necessary.

The following precautions apply when wearing any type of mask:

- Ensure the mask completely covers the nose and mouth and does not gape.
- Do not touch the mask after putting it on.
- Remove and replace the mask if it becomes wet or soiled.

- Do not wear a mask around your neck.
- Do not reapply a mask after it has been removed.
- Perform standard hand hygiene after touching or disposing of a mask.

Mask types include:

- surgical masks
- standard filtering P2/N95 respirators (also called filtering face-piece respirators, particulate filter respirators, face filters)
- surgical filtering respirators.

The correct type of mask must be chosen according to the situation.

Masks with elastic loops have a use-by date as the elastic perishes with time: masks past their use-by date must be replaced, even if unused.

Separate inner frames (also called support frames or mask brackets), designed to prevent the mask material touching the nose and lips, must not be used with any type of mask.

Surgical masks

A surgical mask is intended to prevent the release of potential contaminants from the wearer into their immediate environment. It also protects the wearer's mouth and nose from large droplets, sprays and splashes of body substances.

Surgical masks can provide some protection to staff and patients where there is a risk of disease transmission by respiratory particles, but (unlike filtering respirators) they are not designed to filter out a high proportion of infectious particles in the surrounding air.

Masks are for single use, for one procedure or episode of patient care, except in extended use (see Extended use of personal protective equipment). A mask is removed and replaced if it becomes wet or soiled, or if the user has touched the front of the mask.

Fitting a surgical mask

Surgical masks have ties/tapes to be tied at the back of the head or elastic ear loops.

To be effective, masks must be fitted correctly. Hands should be cleansed with alcohol-based handrub or liquid soap and water before putting on a mask.

Fit a surgical mask correctly by following these steps:

- Apply the mask by tying the tapes above and below the ears, or placing the elastic loops around the ears.
- Open out the folds of the mask so that the mask covers the mouth and nose comfortably.
- Mould (do not pinch) the area over the bridge of the nose to produce a snug, comfortable fit.

Do not cross the loops at the sides or a gap may form and allow contaminated air in.

If a gap forms because the mask is too large, use a smaller size.

Beards should be avoided because they compromise mask fitting.

Removing and disposing of a surgical mask

Correct handling of used masks is important to prevent the risk of infection of the staff member and patients. When removing a mask with ear loops, remove both loops and pull mask away and down. When removing a mask with tapes or ties, undo or break the tape under the ears first, then lift the top tape over the head.

Dispose of the mask as soon as possible into the appropriate waste stream.

P2/N95 masks

P2/N95 masks (filtering masks; also called filtering face-piece respirators or particulate-filter respirators) are special masks designed to form a very close seal around the nose and mouth, protecting the wearer from exposure to airborne particles including pathogenic biological airborne particulates such as viruses and bacteria.

P2/N95 masks include standard (non-fluid-impermeable) and surgical fluid-impermeable types. Only Therapeutic Goods Administration-registered P2/N95 filtering respirators must be used, to ensure they comply with current relevant standards.[2]

Use filtering respirators with band straps. (Those with ear loops are not appropriate for health care). They must be fitted correctly to be effective, and wearers must be appropriately trained in their use. Practices should ensure that staff performing high-risk duties are fit-tested and can perform a fit check correctly before each use.

Filtering respirators may be required during respiratory disease outbreaks or when performing aerosol-generating procedures (eg spirometry) and discarded after each patient or procedure.

Once a mask is in place, do not touch the front of the mask, nor pull the mask down intermittently.

See also Extended use of personal protective equipment.

Fit-testing and fit-checking a P2/N95 mask

Employers should ensure that their employees are able to wear a filtering respirator correctly.

A fit test identifies the correct size and style of P2/N95 mask suitable for an individual. Ideally, testing should be performed at the start of employment for staff working in clinical areas where there is a significant risk of respiratory-related droplet and/or airborne transmission. ❗ of infectious agents has been identified or could develop.

Fit testing may need to be repeated if the person's face shape changes or when there is a change in the range of mask types available from the practice's supplier.

Beards should be avoided because they compromise mask fitting.

Fit checking must be performed every time a P2/N95 mask is put on. Fit checks ensure the mask is sealed over the bridge of the nose and mouth and that there are no gaps between the mask and face. Fit checking must be performed according to the manufacturer's instructions. Staff members are encouraged to observe each other's mask fitting and immediately advise of any problem with correct fit.

Note: In office-based practices it may be difficult to ensure that the optimal size and style of mask for each individual staff member, as identified by fit-testing, is always available. Regardless of whether a supply of the ideal mask type for each staff member can be obtained, careful ongoing fit-checking is essential.

Removing and disposing of a P2/N95 mask

Correct handling of used masks is important to prevent the risk of infection to the staff member and patient. When removing the mask, handle only the straps/bands.

The correct removal technique depends on the design. For 'duckbill'-shaped or cup-shaped respirators, hold both tapes together and lift over the head. For flat-fronted (flat-fold) respirators, lift over the bottom tape, without touching the front of the mask, and let it hang. Then grasp the upper tape and it pull over the head so the whole mask comes away.

Dispose of the mask into the appropriate waste stream.

Footwear

Enclosed footwear must be worn to protect against injury if sharps or contaminated material are inadvertently dropped.

Disposable foot covers are not required during outbreaks, with the exception of very specific infectious diseases. However, staff managing spills (eg when a patient has gastroenteritis) may choose to wear them.

Applying, removing, and disposing of personal protective equipment

Applying and removing personal protective equipment in the correct order is essential to prevent transmission of infectious disease (Refer to Australian Commission on Safety and Quality in Health Care: Sequence for putting on and removing PPE).

Hand hygiene must be performed before putting on personal protective equipment and after removing it. Gloves must always be put on last.

The timing depends on the situation. If full personal protective equipment is required as part of transmission-based precautions, it is put on before entering the patient examination area. Gloves can be put on when entering the patient area.

When the patient has left, gloves are removed, followed by hand hygiene. The gown (unless required for extended use) can be safely removed inside the room, just before exiting. When outside the room, eye protection is removed, followed by respirator mask, unless required for extended use after leaving. Hand hygiene is performed after each item is removed.

Any single-use or extended-use item of personal protective equipment must be removed as soon as it becomes wet or otherwise contaminated. Hand hygiene is required after removing each item.

The appropriate equipment to use, and the method of disposal, will vary according to the situation – not all situations will require disposal into a biohazard/clinical waste bag. If personal protective equipment is not contaminated with pathogenic microorganisms or blood/other body substances, it may be disposed of into the general waste stream. If wet or contaminated with a pathogen, blood or body substances, it must be disposed of via the clinical waste stream. Biohazard bags may be required in some circumstances. (see Waste management)

During a disease outbreak, specific guidance for health professionals on the use and disposal of

personal protective equipment is issued by national, state and territory governments.

Extended use of personal protective equipment

Personal protective equipment is designed for single use (for example, to be worn during a consultation with one patient or during a single procedure), and then either disposed of (gloves, masks, disposable face shields), cleaned (reusable protective eyewear), or appropriately laundered (gowns). However, in special circumstances, such as during a pandemic, some items of personal protective equipment (eg masks, face shields, gowns) are sometimes worn for a longer period while attending multiple patients ('extended use').

This practice may be necessary when there is a shortage of personal protective equipment or it is not practical or necessary to change continually.

In these circumstances, practices must follow health authorities' advice on when to change personal protective equipment.

Any item must be removed when it becomes contaminated. Masks are removed when they become wet from condensation, or after a specified period.

In general, a surgical mask can be used continuously for up to 4 hours, provided it does not become moist, soiled or damaged. Surgical masks must not be stored or reused after removal. Change a surgical mask if the front of the mask is touched by the wearer.

Case study

Case study – Personal protective equipment

COVID-19

One of the key issues faced by general practice during the COVID-19 pandemic was the availability of personal protective equipment. Practices had to optimise the use of personal protective equipment while ensuring the safety your patients and staff.

Undertaking telehealth consultations to optimise personal protective equipment

Telehealth consultations (using phone or video) do not require the use of personal protective equipment. Telehealth can be carried out onsite from the practice or by GPs working from home with the appropriate technology set up.

A face mask should not be worn during a telehealth consultation as this will restrict communication. Therefore, telehealth consultations should be conducted in a location that enables you to physical distance from others in the practice and maintain the privacy of the patient.

Telehealth consultations can be used to triage patients where COVID-19 is suspected.

There will be circumstances where telehealth consultations are not ideal and, based on clinical judgement, you should make arrangements for an in-practice or in-home face-to-face consultation.

Using local GP-led respiratory clinics to optimise personal protective equipment

GP-led COVID-19 respiratory clinics were established in response to COVID-19, in part, to preserve the personal protective equipment of general practices. These clinics have the personal protective equipment and testing capacity to assess and treat patients with respiratory illnesses.

Cohorting patients to optimise personal protective equipment during face-to-face consultations (for situations where extended use of personal protective equipment is appropriate)

When conducting face-to-face consultations, it is recommended general practices cohort their patients into groups with or without respiratory symptoms suggestive of COVID-19. Cohorting patients into groups can help optimise use of personal protective equipment. For example, it enables one GP or nurse to consult patients consecutively and reduce the need to fully don and remove personal protective equipment between consultations.

Face-to-face consultations for patients with respiratory symptoms suggestive of COVID-19

Your practice should only conduct consultations with patients with respiratory symptoms suggestive of COVID-19 if it has the appropriate personal protective equipment and capacity to manage the infection control requirements. If this is not available, refer patients to a local GP-led COVID-19 respiratory clinic. Alternatively, your practice can seek advice from the local public health unit on where to refer the patient for treatment or testing.

All patients who present with respiratory symptoms should be managed according to the Department of Health and Aged Care's Guidance on the use of personal protective equipment for health care workers in the context of COVID-19 until their COVID-19 status is confirmed.

It is recommended that all members of the practice team dealing with patients attending face-to-face consultations with respiratory symptoms use standard and droplet precaution personal protective equipment, including:

- gloves
- mask
- gown/apron
- eye protection.

All patients suspected or confirmed of having COVID-19 should wear a correctly fitted surgical mask for the duration of their consultation (including in waiting areas), unless otherwise directed by staff, such as when conducting a test. Where compliance cannot be achieved (eg with some children, where the patient may have a cognitive impairment, or where the patient refuses), the person should be immediately isolated in a separate room away from practice team members and other patients, or be asked to exit the practice. The initial consultation can then be conducted via phone (using a practice phone if the person has been isolated in a consultation room, or mobile phone if they have exited the practice).

All face-to-face consultations with patients presenting with respiratory illness should occur in a designated area that ideally has a separate entrance and exit for patients to use. Members of the practice team should not leave the designated area where the consultations are taking place while wearing personal protective equipment.

> ⚠ Never consult a patient who is not suspected of having COVID-19 after consulting patients suspected or confirmed of having COVID-19, without fully removing personal protective equipment and performing hand hygiene and environmental cleaning.

At times, in some regions in Australia, the wearing of surgical face masks is required for all practice team members as a public health directive, where physical distancing is not possible or in all patient-facing areas. Check the current advice from your state or territory health department.

Unless stipulated by your state or territory health department (as above), there is no requirement to wear personal protective equipment for these consultations, unless determined clinically necessary

Resources and references

Resources

Therapeutic Goods Administration guidance on personal protective equipment for health professionals

Australian Government Department of Health and Aged Care: Donning and doffing personal protective equipment in primary care

Australian Commission on Safety and Quality in Health Care: Sequence for putting on and removing PPE

Occupational Dermatology Research and Educational Centre. Patient information: latex allergy.

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

AS/NZS1715:2009 – Selection, use and maintenance of respiratory equipment

References

1. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019). Version 11.12 Updated March 2022. Canberra: National Health and Medical Research Council; 2019 [Accessed 29 September 2022].
2. Australian Government Therapeutic Goods Administration. Guidance on personal protective equipment for health professionals. TGA; 2021 [Accessed 29 September 2022].
3. Katelaris C, Kolawole H, Widmer R, et al. ASCIA Guidelines - Management of latex allergic individuals: Australasian Society of Clinical Immunology and Allergy; 2010. [Accessed 1 October 2022]
4. Australasian Society of Clinical Immunology and Allergy. Latex allergy: ASCIA; 2019. [Accessed 3 October 2022]
5. Occupational Dermatology Research and Education Centre. Latex allergy. Occupational Dermatology Research and Education Centre; [accessed 31 August 2022].
6. The Royal Australasian College of Physicians Joint Adolescent Health Committee. Confidential Health Care for Adolescents and Young People (12–24 years). Policy statement: RACP; 2010. [Accessed 3 October 2022]

4. Aseptic technique

Overview – Aseptic technique

Standard aseptic technique refers to work practices used by health professionals and other members of the practice team to minimise the risk of introducing and transmitting infection during clinical procedures.

Standard aseptic technique is used for treatment and dressing of wounds (such as lacerations and ulcers), minor invasive procedures (such as biopsy of skin lesions, hormonal implants, skin scrapings, and suture removal), and venipuncture.

All staff involved in procedures must be familiar with standard aseptic technique and know when to apply it.

Surgical aseptic technique refers to work practices that result in prevention or minimisation of microorganisms entering sterile body areas (eg skin lesion excision, wound suturing).

Aseptic technique involves applying the correct pre-agreed protocols before, during and after a procedure.

Before a procedure:

- assess the risk of infection transmission, including susceptibility of patient, and determine appropriate infection prevention and control protocols. Secure the area as required for the level of aseptic technique (eg ensure other staff or patients do not inappropriately enter the treatment area)
- ensure equipment and receptacles (eg sharps container, pathology collection containers) are ready for use
- perform hand hygiene appropriate to the type of procedure (standard or surgical)
- select personal protective equipment appropriate to the type of procedure (sterile or non-sterile gloves, gown, eye protection)
- ensure appropriate decontamination of equipment and patient's skin.

During the procedure, establish and maintain an aseptic field.

After the procedure, follow protocols for removing personal protective equipment, hand hygiene, and appropriate disposal or cleaning of other equipment according to whether it is reusable or single-use and disposable. Also consider the disposal of clinical waste (including sharps) and general waste, and cleaning of environmental surfaces.

Principles and terminology

An aseptic technique aims to prevent pathogenic organisms, in sufficient quantity to cause infection, from being introduced to susceptible sites by hands, surfaces and equipment in healthcare settings.[1]

The historical term 'sterile technique' is no longer used because it is not possible to achieve a sterile technique in a typical healthcare setting. Near sterile techniques can only be achieved in controlled environments such as a laminar air flow cabinet or a specially equipped theatre.[1]

Levels of aseptic technique are classified as either standard aseptic technique or surgical aseptic technique.

Note: Other systems for assigning the level required for various clinical activities use the term 'no-touch' or 'non-touch' technique (see More information: international framework and terminology below).

More information: international framework and terminology

Some healthcare practices use a clinical practice framework developed in the UK, which is known by the registered trademark ANTT (Aseptic Non-Touch Technique).[2] Australian healthcare practices are not required to use ANTT, but can choose to use it if they wish, provided they comply with Australian standards.[3]

This international standard and clinical practice framework for aseptic technique was developed to standardise clinical competency among health workers performing procedures that require techniques previously termed aseptic, 'sterile', and 'clean' techniques.[2]

This framework is based on identifying 'key sites' on the patient's body that require protection from pathogenic microorganisms, such as surgical wounds or intravenous cannula insertion sites,[4] and identifying 'key parts' – aseptic parts of the procedure equipment that will be in contact with the patient or infusion fluids.[4] Key sites and key parts are protected from contamination through a combination of hand hygiene, non-touch technique, and the use of new sterilised equipment and/or cleaning existing key parts to a standard that renders them aseptic prior to use.[1] Key parts are modelled as a system of aseptic fields classified as 'critical' or 'general'.[1,4]

The framework uses the simple rule that aseptic key parts must only come into contact with other aseptic key-parts and/or key-sites.[1]

The framework has been used for standardising training and competency assessment among health workers.[2,4]

Standard aseptic technique

Standard aseptic technique is used during treatment of wounds (eg lacerations and ulcers), minor invasive procedures that are technically simple and brief (such as biopsy of skin lesions, hormonal implants, skin scrapings, and suture removal), venipuncture and urinary catheterisation.

All staff involved in procedures must be familiar with standard aseptic technique and know when to apply it.

Standard aseptic technique is achieved by:

- using standard precautions (see Levels of precautions), including hand hygiene and personal protective equipment where necessary
- using physical barriers (eg clean single-use gloves)
- using sterile water or saline to clean ulcers or lacerations
- using clean environmental surfaces
- ensuring that there is no direct contact between the health professional's hands and the patient during the procedure ('no-touch' technique), such as using forceps during dressings or clean single-use gloves. If direct contact may occur due to type of procedure or experience of practitioner, then a surgical technique is used.
- using drapes as a barrier between the operator and patient's surrounding skin or other surfaces
- using sterile instruments and equipment
- reprocessing reusable medical devices between each patient.

Surgical aseptic technique

Surgical aseptic technique refers to work practices that result in preventing or minimising microorganisms entering sterile body areas (eg through surgical incisions). These are undertaken **in addition to** standard aseptic technique.

Surgical aseptic technique is necessary for surgical procedures that are technically complex, take longer than minor procedures (eg >20 minutes) to complete, and require large open sites and multiple pieces of equipment.

Surgical aseptic technique involves:

- setting up a 'sterile' operating field – a well-defined area within which everything is sterile
- using sterile gloves, gowns, drapes and instruments
- hand hygiene using a surgical handrub or surgical cleanser registered by the Therapeutic Goods Administration for that purpose
- using skin disinfection (antisepsis) to minimise microorganisms on the patient's skin around the surgical site
- ensuring that only sterilised equipment comes within this sterile field.

Skin disinfection (asepsis)

Application

Agents used for skin asepsis in healthcare practices ('skin disinfectants') kill, and temporarily reduce, microorganisms on the skin.

Their use is appropriate for reducing the number of resident microorganisms on the skin in the following situations:

- when the level of microbial contamination is high (such as when managing open or contaminated wounds)
- when persistent antimicrobial activity is desired (such as during invasive procedures or surgery)
- before intravascular or joint or body cavity penetration
- before skin puncture (eg acupuncture)
- before intrathecal injection or similar (essential)
- for identified vulnerable groups before intradermal, subcutaneous or intramuscular injection (non-essential for non-vulnerable groups).

Practices must follow the guidance of the Australian immunisation handbook on skin hygiene when preparing the person receiving the vaccine.

Skin disinfectants may compromise wound healing.[5]

Agents used in skin asepsis (skin disinfectants)

Agents sold as skin disinfectants are regulated by the Therapeutic Goods Administration and are labelled according to their appropriate use. They must be used according to the manufacturer's directions.

Skin disinfectants must be appropriate to the site. Some disinfectants are irritant to mucous membranes (eg alcohol) and some cause nerve damage (eg chlorhexidine can cause sensorineural deafness if used in the middle ear).

Resources and references

Resources

Australian Commission on Safety and Quality in Health Care: Aseptic technique

Applying standard and transmission-based precautions during procedures. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Wounds Australia information and education resources

Australasian College of Perioperative Nurses (ACORN) standards for perioperative nursing

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

References

1. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019). Version 11.12 Updated March 2022. Canberra: National Health and Medical Research Council; 2019 [Accessed 1 September 2022].
2. Rowley S, Clare S. Standardizing the critical clinical competency of aseptic, sterile, and clean techniques with a single international standard: aseptic non touch technique (ANTT®). J Vasc Access 2019; 24: 12-17.
3. Atkins S. Australasian College for Infection Prevention and Control Aseptic Technique Symposium: ACIPC; 2017. [Accessed 3 October 2022].
4. Rowley S, Clare S, Macqueen S, et al. ANTT v2: An updated practice framework for aseptic technique. Br J Nurse 2010; 19: S5-S11.
5. Atiyeh BS, Dibo SA, Hayek SN. Wound cleansing, topical antiseptics and wound healing. Int Wound J 2009; 6: 420-430.

5. Levels of precaution

Overview – Levels of precaution

The blood and body substances of all patients must be considered infectious at all times, and must be managed as though infectious.

Standard precautions are work practices that consistently achieve a basic level of infection prevention and control.

Standard precautions must be used by all staff involved in patient care or who may have contact with blood or other body substances, secretions and excretions (except sweat), including through contact with mucous membranes and non-intact skin, regardless of the known or perceived infection status of the patient.

Transmission-based precautions are additional precautions specific to a known or suspected infection or during an outbreak, according to the relevant route(s) of transmission (contact, droplet or airborne). ❗ They are used with standard precautions to provide additional barriers between practice staff at risk and the infected patient.

Use transmission-based precautions (**in addition to standard precautions**) when a patient is known or suspected to be infected or colonised with microorganisms that cannot be contained by standard precautions alone (eg microorganisms causing gastroenteritis, measles, or influenza).

Standard precautions

Standard precautions are routine work practices that are implemented consistently to achieve a basic level of infection prevention and control.

Standard precautions consist of:

- hand hygiene
- use of appropriate personal protective equipment
- safe use and disposal of sharps
- routine environmental cleaning (see Cleaning, laundry and waste management)
- appropriate reprocessing of reusable medical devices
- respiratory hygiene and cough/sneeze etiquette
- aseptic technique
- appropriate waste management (see Cleaning, laundry and waste management)
- appropriate linen handling and laundry processes (see Cleaning, laundry and waste management).

When to apply standard precautions

It is essential that standard precautions are applied at all times because staff or patients may be:

- at risk of infection from others who carry infectious agents
- infectious while asymptomatic, undiagnosed, or before laboratory tests are confirmed
- at risk from infectious agents present in the surrounding environment, including surfaces, objects or equipment
- performing specific procedures or tasks that are associated with an increased risk of microorganism transmission.

Standard precautions are used when staff are likely to be in contact with:

- blood (including dried blood)
- other body substances, secretions or excretions excluding sweat (eg urine, faeces)
- non-intact skin
- mucous membranes.

Respiratory hygiene and cough/sneeze etiquette

Respiratory hygiene and cough/sneeze etiquette must be applied at all times as part of standard precautions. Covering sneezes and coughs reduces air dispersal of respiratory particles that could contain pathogenic bacteria or viruses.

Hand hygiene must be performed after coughing, sneezing, using tissues, or after contact with respiratory secretions or objects contaminated by these secretions. Place alcohol-based handrub within reach at all times to facilitate hand hygiene. However, if hands are visibly contaminated they must be washed with soap-based liquid hand cleanser and water.

Instruct everyone to follow respiratory hygiene and cough/sneeze etiquette, regardless of whether they have signs and symptoms of a respiratory infection, and regardless of the cause:

- Cover the nose/mouth with disposable single-use tissues when coughing, sneezing, wiping and blowing nose to contain respiratory secretions.
- Dispose of tissues in the nearest waste receptacle or bin after use.
- If no tissues are available, cough or sneeze into the inner elbow rather than the hand.
- Cleanse hands thoroughly immediately after contact with respiratory secretions and contaminated objects/materials before resuming other activities (see Hand hygiene).
- Keep contaminated hands away from the mucous membranes of the mouth, eyes and nose.

Patients requesting a consultation with respiratory symptoms should be triaged by a health professional via phone or videoconference to determine whether the consultation should be via telehealth or in person.

Patients presenting to the clinic must be routinely triaged (Table 5.1. Managing practice access and patient flow). Those with symptoms of respiratory infections arriving at the clinic must be given a surgical mask and shown how to wear it correctly. They can be either seen immediately, directed to a properly ventilated isolation area while waiting, asked to wait outside until called in, or even seen outside (see also Reception and triage).

Infective respiratory particles may remain suspended in the air for several hours. The risk can be reduced by wearing a mask and by adequate ventilation (a minimum of at least 6 air changes of fresh air per hour; see Ventilation).

Staff could assist patients who need help with containment of respiratory secretions (eg elderly, children). Those who are immobile will need a receptacle (eg plastic bag) readily at hand for the immediate disposal of used tissues and will need to be offered hand hygiene facilities. All patients with symptoms of respiratory infection must be encouraged to wear a mask inside the clinic, if able, or seen outdoors to reduce risk to other patients and staff.

Staff with viral respiratory tract infections must remain at home until their symptoms have resolved, or according to health department advice on specific pathogens.

Table 5.1. Managing practice access and patient flow

The practice's infection prevention and control plan could include controlling the entry of patients with potentially infectious disease through the following strategies:

- Check the temperature of each person presenting to the practice and ask those who return a reading >37.5°C to remain outside of the practice until further assessment can be conducted.
- Use physical markers, such as lines taped on the floor, to promote physical distancing.
- Define the preferred flow of foot traffic through the practice using floor markings and signs.
- Display at the entrance any information about temporary or ongoing requirements of entry.
- Install screens at high-interaction areas such as reception.
- Minimise patient congestion in the practice waiting room by limiting the number of people on the premises at any one time.
- Space furniture in the waiting room.
- Provide access to alcohol-based handrub at entry and exit (and at appropriate locations throughout the practice).
- Encourage patients to book an appointment rather than walk in.

During an infectious disease outbreak:

- have a space that can be used for patient isolation
- implement a management plan to enable immediate isolation of patients presenting with symptoms suggestive of the infection
- provide staff with data information sheets or resource links for the disease
- limit patient access to defined entries and exits
- display information at the entrance and ensure clear messaging on all platforms (ie website, hold message, social media etc) asking patients to call ahead if they have any symptoms suggestive of the disease to enable appropriate triage
- require all people entering the practice to wear a face mask unless an exception or lawful excuse applies
- encourage telehealth consultations (where appropriate).

Transmission-based precautions

Transmission-based precautions are used with standard precautions to further reduce the risk of infection via a specific mode of transmission: contact, droplet or airborne.

Preventing staff and patients with relevant infections from entering the practice

Practices could develop and implement a protocol to elicit self-reporting by staff and patients of any symptoms that could be due to an infectious disease (eg respiratory symptoms, gastrointestinal symptoms or rashes) before they enter the practice. Strategies include routine questioning by reception staff when booking appointments by telephone, a telephone 'on hold' recorded message, questions or instructions added to the online booking system, and notices on the practice website and main door.

These communications must explain that this information is necessary to keep staff and other patients safe, and reassure patients that they will still be given a consultation even if they report such symptoms. For patients who report symptoms, consultations can be arranged to take place by phone, videoconference, in a separate area, or outside the facility.

Aerosol-generating procedures

Practices must identify and follow the latest advice on infection prevention and control when performing aerosol-generating procedures (eg nebulisation, spirometry, peak expiratory flow, oxygen supplementation via nasal cannulas or mask) from national and state/territory health departments. Guidance is also published by the Australian and New Zealand Society of Respiratory Science and the Thoracic Society of Australia and New Zealand.

The *Australian guidelines for the prevention and control of infection in health care* provide guidance on the type and duration of precautions for specific infections and conditions.

Use of spirometry during a respiratory outbreak

Office-based spirometry may be discontinued during a respiratory pandemic or restricted to specialised facilities with a negative-pressure room and/or appropriate ventilation. Where appropriate to perform (eg in nonfebrile patients at low risk), precautions may include the use of full personal protective equipment.

Contact precautions

Contact precautions must be used if there is a risk of direct or indirect contact transmission of pathogenic microorganisms that are not effectively contained by standard precautions alone, such as when a patient presents with suspected norovirus or *Clostridioides difficile* infection, influenza, impetigo, or parvovirus infection, and whenever the presence of methicillin-resistant *Staphylococcus aureus* is likely or possible.

In addition to standard precautions, including hand hygiene, contact precautions include:

- appropriate use of personal protective equipment including gloves for all contact with patients, equipment and surfaces, a fluid-resistant apron or gown if contact with the patient or their immediate environment is likely, and a fluid-resistant surgical mask and eye protection if splash is likely (see Personal protective equipment)
- segregating patients with suspected infectious diseases as appropriate and feasible (eg physical distancing in general waiting area or moving to a spare room, scheduling the visit a the end of the day when other patients will not be present, using telehealth)
- communicating the patient's infectious status to other health professionals involved in the patient's care (eg the primary health care nurse, or ambulance and emergency department staff if being transferred to another healthcare facility) so that appropriate transmission-based precautions can be maintained
- ensuring that infected or colonised areas of the patient's body are contained and covered if transfer between rooms or to another facility is necessary (for example, a suppurating wound or a baby with a leaking nappy).

Droplet precautions

Droplet precautions must be used if there is a risk of infectious microorganisms being transmitted by droplets generated by coughing, sneezing or talking (eg patients with pertussis) or vomitus.

In addition to standard precautions, including hand hygiene, droplet precautions include:

- appropriate immunisation of staff
- staff use of fluid-repellent surgical masks or filtering respirators as appropriate or as directed by health departments during outbreaks (see Personal protective equipment)
- requiring all patients to wear surgical masks covering the nose and mouth, and to leave them on until after leaving the clinic
- segregating patients with suspected infectious diseases (or any patient with violent or frequent coughing), as appropriate and feasible (eg in a separate room before the consultation, or by arranging consultations offsite or outside)
- physical distancing in general waiting area (at least 1 metre between infectious person and others in the waiting area)
- requiring patients to observe respiratory hygiene and cough/sneeze etiquette by displaying signs and providing tissues, alcohol-based handrub and a waste bin within sight
- communicating the patient's infectious status to other health professionals involved in the patient's care (eg the primary health care nurse, or ambulance and emergency department staff if being transferred to another healthcare facility) so that appropriate transmission-based precautions can be maintained.

Airborne precautions

Airborne precautions must be used where there is a risk of transmitting microorganisms via aerosols that are generated by coughing, sneezing, talking, shouting, vomiting, and even breathing, and can remain infectious over time and distance when suspended in air (eg transmission of measles, varicella, tuberculosis, influenza or COVID-19).

In addition to standard precautions, including hand hygiene, airborne precautions include:

- appropriate immunisation of staff
- use of appropriate personal protective equipment (see Personal protective equipment), including:
    - filtering respirators as appropriate or as directed by health departments during outbreaks. Standard surgical masks are less effective for protecting against smaller particles
    - eye protection (including face shield, if needed) where splash is likely
- implementation of processes to minimise exposure to other patients (eg arranging at the end of the day after other patients have left or making a home visit, segregating into a separate area such as a spare room, requiring the infectious patient to wear a surgical mask)
- ensuring that all reusable equipment is cleaned or reprocessed before use on the next patient
- communicating the patient's infectious status to other health professionals involved in the patient's care (eg the primary health care nurse, or ambulance and emergency department staff if being transferred to another healthcare facility) so that appropriate transmission-based precautions can be maintained.

Note: During a respiratory infection outbreak, follow advice on infection prevention and control from national and state or territory health authorities, as well as accessing up-to-date guidance from expert groups such as the Australian and New Zealand Society of Respiratory Science. Office-based spirometry may be discontinued during a respiratory pandemic or restricted to specialised facilities with a negative-pressure room and/or appropriate ventilation. Where appropriate to perform (eg in nonfebrile patients at low risk), precautions may include the use of full personal protective equipment.

Contact tracing

During epidemics and pandemics (eg COVID-19, pandemic influenza, measles and invasive meningococcal disease), it may be necessary to trace people who have been in contact with an infected patient. These may include practice staff and other patients, and the person's household members, work colleagues and other acquaintances. Contact your state or territory health department communicable disease unit for advice and direction (see Links).

Case study

Case study – Levels of precaution

Preparing a consultation space

Preparing a consultation room for a suspected COVID-19 case

Remove all non-essential items from exposed surfaces.

Tape a line on the floor 1.5 metres from the doctor's/nurse's chair/desk as a physical indicator to maintain social distancing when possible.

Make sure you have enough personal protective equipment in the room, including spares.

Check that the room has handwashing facilities and enough hand sanitiser/tissues.

Place a clinical waste disposal bin in a convenient location.

Put all relevant pathology forms, examination tools, etc in the room to avoid having to leave the room.

Have relevant health and follow-up information ready to give the patient:

- COVID-19 information
- isolation guidance
- referral information
- follow-up details.

Infection prevention and control reminder

Remember:

- standard precautions include
  - hand hygiene
  - cough etiquette
  - waste management, as appropriate (collect, segregate and dispose of waste)
- contact precautions (in addition to standard precautions) include
  - gloves
  - gown/apron
- droplet precautions (in addition to standard precautions) include
  - surgical mask
  - protective eye wear
- airborne precautions (in addition to standard, contact and droplet precautions) include
  - P2/N95 respirator.

Maintain social distancing:

- stay behind the 1.5-metre line on the floor when possible.

During a consultation with a suspected COVID-19 case when swabbing is performed

Implement the following:

- The patient wears a surgical mask at all times.
- The doctor wears appropriate PPE at all times.*
- The patient remains behind the line on the floor 1.5 metres from the doctor's chair/desk where possible.
- When collecting the specimen, the doctor stands to the side in front of the patient.
- The doctor swabs the tonsillar area of the oropharynx first; then, using the same collection swab, swabs the nasopharynx.

* Appropriate PPE is determined by risk assessment:

- Likely low risk of SARS-CoV-2 transmission – use PPE in accordance with existing guidance for standard, contact and droplet precautions, as specified in the Australian guidelines for the prevention and control of infection in healthcare. This includes wearing a surgical mask.
- Likely high risk of SARS-CoV-2 transmission – use P2/N95 respirators, rather than surgical masks, along with the other required PPE, as specified in the Australian guidelines for the prevention and control of infection in healthcare.

Contact tracing

Measles outbreak

Immediate measures may include:

- checking that ventilation is adequate (6–8 fresh air changes per hour)
- placing signs at the entrance to the practice advising patients to phone if they suspect they have measles
- displaying patient information at reception warning that measles cases have been diagnosed at this time in this area
- for suspected cases, performing the consultation in a room with adequate ventilation that can remain vacant for at least 30 minutes post consultation
- identifying any patients known to be at risk (eg immunocompromised) who may have an appointment at the general practice and consider potential for exposure
- decontaminating door handles with detergent (or combined detergent/disinfectant) solution or wipes.

Urgently report confirmed cases to the local public health unit immediately on clinical diagnosis, pending confirmation by the pathology laboratory.

Urgently report suspected cases to the local public health unit.

Notify potentially exposed patients and advise them to attend an emergency department for immunoglobulin therapy (after first contacting the emergency department and receiving instructions on how to isolate and attend safely).

Resources

Standard precautions. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Transmission-based precautions. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Type and duration of precautions for specific infections and conditions. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Multi-resistant organisms. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Australian Commission on Safety and Quality in Health Care: Infection prevention and control posters – standard and transmission based precautions and signage

National Hand Hygiene Initiative user manual

The National Hand Hygiene Initiative

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

6. Staff screening immunisation and infection management

Overview – Staff screening

Overview – Staff screening

Develop policies to ensure that all staff are either immunised or have natural immunity against vaccine-preventable diseases that can be transmitted in the practice environment.

Practice owners are responsible for advising staff of the risks of infection and ensuring that staff are aware they are expected to be covered for the vaccine-preventable diseases to which they may be exposed.

Practices can offer staff the opportunity to be vaccinated at work or use their preferred general practice or immunisation service.

Practices must maintain up-to-date records of staff immunisation status.

Practices must ensure that all staff are aware that:

- they must inform the infection prevention and control coordinator, practice manager or employer if they have a known or suspected infectious disease that could be transmitted in the workplace, and that they are not to come to work until they are considered no longer infectious
- if they have a notifiable disease, they must not come to work until they have completed the required isolation period or met testing requirements, following health department advice.

Practices could implement recommended exclusion periods for those with known or suspected infectious diseases. The infection prevention and control coordinator must stay up to date with health department requirements for notifiable diseases.

Principles for managing staff immune status

Develop policies for the assessment, screening and vaccination of healthcare workers to minimise the risk of transmission of vaccine-preventable diseases. Policies must align with relevant state and territory policies and/or legislation. Policies also apply to trainees undertaking placements in the practice, work experience students and volunteers.

Education could be provided to non-clinical staff members to support the vaccination policy.

Staff members' privacy must be respected. Staff members with chronic viral infections such as Hepatitis B, Hepatitis C or HIV are not required to disclose their status unless they are still infectious or perform procedures that carry the risk of blood-borne transmission.[1]

For each relevant vaccine-preventable disease, the practice must record each staff member's immune status, but need not record whether immunity was achieved through vaccination or naturally through a previous infection. Staff members who do not wish to provide details of vaccinations or infections and do not participate in the practice's immunisation activity can opt to obtain a letter from their own chosen healthcare provider stating that they are immune. Vaccine refusal or non-disclosure must be recorded in the staff member's human resource documentation.

Safe Work Australia provides useful information regarding situations where staff refuse vaccination, however, they reiterate that these situations are often intricate, and that legal advice is always recommended. Seek legal advice from a Medical Defence Organisation regarding the management of

vaccine refusal.

Screening

Routine health assessment at the start of employment could include checking for evidence of immunisation/immune status, tuberculosis, immune disorders, and skin conditions/latex allergy in accordance with state/territory guidelines.

Staff with a diagnosis that increases their risk of infection (eg cystic fibrosis) could be encouraged to disclose their diagnosis during screening before they start work, to determine the safest workplace arrangements.

Before beginning employment or a trainee placement, all staff and students should be assessed and offered testing and/or vaccination for specific infectious diseases. Particular attention should be paid to immune status, skin conditions, pregnancy status, as well as risk factors for specific groups of patients. These conditions may vary according to state- and territory-specific requirements and recommendations.

Plain-language information on infection prevention and control guidelines, including screening, could be provided to nonclinical managers who are responsible for employing new staff.

Assessment may need to be repeated and status updated during employment.

Staff immunisation policy and procedures

All staff require immunisation/immunity to ensure they are protected from vaccine-preventable infectious diseases, as appropriate to their duties. Specific requirements may vary according to risk assessment based on the type of practice and the duties performed by the staff member. For example, document immunity to hepatitis B virus for any staff member who might be given the task of cleaning a spill of blood or other body substances.

The practice's vaccination policy could incorporate individual assessments for staff members. Special consideration needs to be given to the vaccination status of staff born overseas and those who are pregnant or could become pregnant.

Practices must provide new employees with a list of recommended vaccinations, and give them the option of either receiving required vaccinations at work, or obtaining them from their own GP or immunisation service. Staff should obtain a copy of their immunisation history statements from Medicare or their regular GP and provide it to the practice manager.

If a staff member's immunity to any vaccine-preventable infectious disease is in doubt, serological testing is generally indicated. Otherwise, the vaccination should be repeated.

If a staff member cannot receive live vaccines, this must be documented in staff records. If an alternative is not available, special arrangements such as redeployment may be required during an infectious disease outbreak.

New staff should receive the vaccines they require before starting or within the first few weeks of employment, and as recommended by health departments (eg influenza vaccine annually in April–June, COVID-19 vaccination as advised by the Australian Government Department of Health and Aged Care).

Documentation of vaccination or immunity must be included in staff records.

Refer to the current edition of the Australian immunisation handbook[2] for comprehensive information on vaccination, and for information on steps and checklists for health worker vaccination requirements.

Employer responsibilities

Where staff are at significant occupational risk of acquiring a vaccine-preventable disease (eg during an outbreak), employers should implement a comprehensive vaccination program, which may include:

- a vaccine policy
- reviewing and updating staff vaccination records
- provision of information about the infectious disease
- protocols to manage vaccine refusal.

Employers are not required to perform staff vaccination, but are responsible for advising of risks at work, recommending appropriate vaccination, maintaining records on staff vaccination/immunity status, and ensuring that unvaccinated staff comply with relevant exclusions and precautions (see Staff records).

During an infectious disease outbreak, state and territory public health regulations may mandate exclusion of unvaccinated staff.

If a non-immune staff member is exposed to a vaccine-preventable disease, employers must ensure that the person receives assessment and is offered postexposure prophylaxis, if indicated.

Staff records

Employers must keep an up-to-date record of the immunisation status of their employees (Table 6.1. Sample staff immunisation record). These can assist in identifying nonimmune staff. Such records must be stored in accordance with confidentiality and privacy requirements.

The following could be recorded for each staff member:

- advice given about the need for appropriate vaccination suitable for the type of practice and their duties
- status of vaccinations, natural infection and serological results before present employment
- details of the vaccinations received and relevant infections since joining the practice (date given, type and brand, batch number, and antibody response if appropriate)
- agreement or refusal to be appropriately vaccinated or have antibody levels assessed, and any further discussion/information provided.

Staff must be informed that lack of immunity may exclude them from some duties, for example:

- those with lack of immunity to hepatitis B may not perform venipuncture
- those inadequately immunised against pertussis may not work with babies
- those with lack of immunity to measles should wear a mask during measles outbreaks and must be advised to do so.

Table 6.1. Sample staff immunisation record Download the staff immunisation record

Name:

Date of birth:

Address:

Vaccinations required:

Vaccine	**Up to date?**	**Pre-vaccination antibody status**	**Status**	**Post-vaccination antibody status** (if relevant)
COVID-19	Y/N Date last checked:		Number of doses received: Date of last dose received:	
Hepatitis A	Y/N Date last checked:		Number of doses received: Date of last dose received:	
Hepatitis B	Y/N Date last checked:		Number of doses received: Date of last dose received:	
Influenza	Y/N (within last 12 months)		Date last dose received:	
Measles-mumps-rubella	Y/N Date last checked:		Number of doses received: Date of last dose received:	
Diphtheria-tetanus-acellular pertussis	Y/N (within last 10 years) Date last checked:		Date last dose received:	
Varicella	Y/N Date last checked:		Number of doses received: Date of last dose received:	

Polio	Y/N (within last 10 years)	Date last dose received:
	Date last checked:	

Risk of infection and benefits of vaccination explained

Date:

Signature of person providing advice:

Signature of staff member acknowledging vaccination advice offered:

Consent for vaccination obtained from staff member: Y/N

Further counselling and/or education provided:

Vaccinations for health professionals

The Australian immunisation handbook recommends that all healthcare workers, including all workers and students directly caring for patients, or handling human tissue, blood or body substances, receive vaccines against the following:

- hepatitis B
- influenza
- measles-mumps-rubella (if non-immune)
- pertussis – diphtheria-tetanus-acellular pertussis (dTpa) vaccine
- varicella (if non-immune).

Hepatitis A vaccination is recommended for people who provide care for Aboriginal and Torres Strait Islander children, in the Northern Territory, Queensland, South Australia or Western Australia.[3]

The Australian immunisation handbook provides up-to-date information on serological testing for hepatitis B and measles-mumps-rubella.

Practices should also monitor and follow the latest guidance on vaccination against COVID-19 from the Australian Government Department of Health and Aged Care.[4]

Other vaccines may be recommended, such as inactivated poliovirus for healthcare workers who may have contact with people with polio, and bacille Calmette–Guérin (BCG) for healthcare workers who are likely to encounter patients with tuberculosis, or other vaccines during outbreaks.[3]

Health professionals with a blood borne virus

All health professionals with a blood borne virus must have appropriate and ongoing medical care.

Health professionals living with one or more blood borne viruses are required to monitor their viral load and only participate in clinical activities as deemed appropriate by the Communicable Disease Network Australia's *National Guidelines for healthcare workers on managing bloodborne viruses*.

Staff disease surveillance

Practices must ensure that all staff are aware that:

- they must inform the infection prevention and control coordinator, practice manager or employer if they have a known or suspected relevant infectious disease that could be transmitted in the workplace (or are a close contact of someone with such an infectious disease) and that they should not come to work until they are considered no longer infectious
- if they have a notifiable disease, they must not come to work until they have completed the required isolation period or met testing requirements, following health department advice.

Practices can implement routine protocols to reduce the risk of infection transmission between staff members (Table 6.2. Strategies for minimising risk of infection transmission between staff).

Practices should implement recommended exclusion periods for those with known or suspected infectious diseases (Table 6.3. Staff exclusion periods for infectious illness).

The infection prevention and control coordinator must stay up to date with health department requirements for notifiable diseases.

Table 6.2. Strategies for minimising risk of infection transmission between staff

Practices could implement the following strategies:

- Regularly communicate with all staff regarding the requirement to not attend the practice if they have any symptoms consistent with a current infectious disease outbreak, regardless of how mild.
- Encourage testing in line with local public health unit advice.
- Check the temperature of each staff member on commencement of each shift/ attendance at work and ask those with a temperature >37.5°C to seek further medical review.
- Support any staff member who tests positive for an infectious disease, or is identified as a close contact or is required to self-isolate including by making them aware of their leave entitlements.
- Encourage physical distancing in common areas (eg tea room), by setting density limits, by arrangement of furniture, and through floor markings and signage.
- Require all staff to thoroughly clean communal items (eg cutlery) immediately after use by washing with hot water and detergent or by placing them in the dishwasher to be washed on the hottest possible setting.
- During an infectious disease outbreak period:
    - require a verbal/written/electronic attestation from each staff member at the commencement of each shift confirming they do not have any symptoms consistent with the infectious disease outbreak, have not been in contact with a confirmed case, and have not been directed to isolate
    - where a staff member typically works across a number of sites within the business, minimise movement between sites by scheduling shifts at one location (where possible)
    - encourage tea breaks/lunchbreaks to be taken outside
    - stagger breaks to limit the number of people in common areas
    - encourage all team members to provide their own drinking vessels and cutlery
    - ban the sharing of food on site (eg cake and dips).

Table 6.3. Staff exclusion periods for infectious illness

Acute infection	Exclusion
Conjunctivitis	Must not provide patient care while eye discharge present.
Gastroenteritis – norovirus infection suspected	Must not come to work for at least 48 hours after resolution of symptoms (eg diarrhoea and/or vomiting).
Gastroenteritis – infection with other pathogen suspected (eg giardiasis, *Shigella* infections, *Salmonella* infections, *Campylobacter* infections)	Must not come to work while symptomatic (eg diarrhoea and/or vomiting) and until 24 hours after symptoms have resolved.
Glandular fever	Not required (even for those with direct patient contact) if well enough to return to work and follow standard precautions.
Hand, foot and mouth disease	Must not come to work until all blisters have dried. Exclusion not necessary for contacts of someone who has hand, foot and mouth disease.
Herpes Simplex infections (cold sores)	If exposed herpetic lesion, must not provide direct care to neonates, newborns, patients with severe immunocompromise, patients with burns or extensive eczema, or patients undergoing minor surgical procedures. May provide direct patient care to other patients. Mask is unnecessary, but lesions should be covered with a dressing, if possible. Hand hygiene practices to minimise the risk of transmission need to be maintained.
Herpes Zoster infections (Shingles)	Must remain at home while unwell. Must not provide ANY direct patient care if lesions cannot be covered (eg ophthalmic zoster). If active lesions can be covered, can provide care to all patients except for pregnant women, neonates, severely immunocompromised patients, burns patients and patients with extensive eczema.

Acute infection	Exclusion
Influenza	Must remain off work until at least one of the following applies: • The person is asymptomatic • The person has received 72 hours of influenza antiviral medication. • It is 5 days or more since onset of respiratory symptoms. Should not participate in the care of (or enter the same area as) patients who are more susceptible to infection (such as hematopoietic stem cell transplant recipients) until symptoms have completely resolved AND it is at least 7 days from the onset of symptoms.
Pertussis infections (Whooping cough)	Staff should remain away from work for whichever specified period applies: Those taking appropriate antibiotic: At least 5 days from commencement of antibiotic treatment Those not taking appropriate antibiotic: At least 21 days from onset of symptoms or At least 14 days after the onset of paroxysmal cough (if known)
Viral respiratory tract infections: COVID-19 [SARS-COV-2], SARS-COV-1, MERS [MERS-CoV]), RSV, hMPV, common cold	Follow directives by jurisdiction health authorities. Note: restrictions based on vaccination status may apply.
Scabies or lice infestations	Staff member should remain off work until 24 hours after first treatment started.
Staphylococcal infection (eg boils, wound infections)	Swab for culture and sensitivity. If multi-resistant organism or highly pathogenic strain identified, follow directives by jurisdiction health authorities. Lesions must be covered with an occlusive dressing while at work. If lesions cannot be covered, staff must not perform patient care or handle food for others until they have received appropriate antibiotic therapy and the infection has resolved.

Acute infection	Exclusion
Streptococcal infection (eg impetigo, tonsillitis)	Lesions on skin (eg impetigo) must be covered with an occlusive dressing while at work. If lesions cannot be covered, staff do not attend work until 24 hours after commencement of appropriate antibiotic therapy. Staff with pharyngitis/tonsillitis should avoid patient contact for at least 24 hours after starting appropriate antibiotic therapy.
Tuberculosis (TB)	Exclusion until cleared – follow jurisdictional policy and TB service advice.

<table>
<tr><th>Acute infection</th><th>Exclusion</th></tr>
<tr><td>Viral rashes</td><td>Remain off work for specified exclusion period according to virus:

<table><tr><th>Virus</th><th>Exclusion period</th></tr><tr><td>Rubeola (measles)</td><td>Suspected: until test result known.

Confirmed: until serological evidence of immunity (ie IgG sero-positive and IgM sero-negative).

If measles develops: at least 4 days after appearance of rash.</td></tr><tr><td>Mumps virus</td><td>Suspected: until test result known.

Confirmed: until serological evidence of immunity (ie IgG sero-positive and IgM sero-negative).

If mumps develop: until resolution of parotid gland swelling or at least 9 days after the onset.</td></tr><tr><td>Rubella (German Measles)</td><td>Suspected: until test result known.

Confirmed: until serological evidence of immunity (ie IgG sero-positive and IgM sero-negative).

If rubella develops: until at least 4 days after appearance of rash.</td></tr><tr><td>Varicella (chickenpox)</td><td>Until all blisters dried (usually at least 5 days).</td></tr><tr><td>Human parvovirus B19 (Slapped Face)</td><td>Exclusion not necessary as non-infectious once rash develops.</td></tr></table>
Note: Staff should be screened for measles, mumps, rubella and Varicella infection before starting employment. If not immune, they should be offered vaccination unless contraindicated.</td></tr>
</table>

Source: NHMRC (2019)[5]

COV: coronavirus; COVID-19: coronavirus disease 2019; hMPV: human metapneumovirus, IgG: immunoglobulin G; IgM: immunoglobulin M; MERS: Middle Eastern respiratory syndrome; RSV: respiratory syncytial virus; SARS: Severe acute respiratory syndrome

Resources and references

Resources

Health status screening and immunisation. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Communicable Diseases Network Australia series of national guidelines

Communicable Diseases Network Australia national Guidelines for healthcare workers on managing bloodborne viruses

Relevant Australian standards

Royal Australian College of General Practitioners. Core Standard 3. Criterion C3.5 – Work health and safety. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

References

1. Australian Government Department of Health and Aged Care. CDNA National Guidelines for healthcare workers on managing bloodborne viruses. Australian Government; 2022 [Accessed 3 October 2022].
2. Australian Government Department of Health and Aged Care. Preparing for vaccination. Australian immunisation handbook. Canberra: Australian Government; 2021. [Accessed 3 October 2022].
3. Australian Technical Advisory Group on Immunisation of the Australian Government Department of Health and Ageing. The Australian immunisation handbook. Canberra: Australian Government Department of Health and Ageing. [Accessed 3 October 2022].
4. Australian Government Department of Health and Aged Care. COVID-19 vaccines. Australian Government; 2022 [Accessed 30 April 2022].
5. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019). Version 11.12 Updated March 2022. Canberra: National Health and Medical Research Council; 2019 [Accessed 30 September 2022].

7. Sharps

Overview – Sharps

A ‘sharp’ in health care is defined as anything that can penetrate the skin. Sharps encountered in general practices and other office- and community-based practices include needles and syringes (considered as a single unit as they are not to be disconnected), scalpel blades, stitch cutters, glass ampoules and vials, sharp plastic items, punch biopsy equipment, lancets, any other sharp surgical instrument for disposal, retractable sharps such as lancets for glucose testing, wire cytology brushes, razors, scissors and box cutters.

Healthcare workers are at risk of injury from sharps during many routine procedures and during disposal. The safe handling, transport and disposal of sharps is necessary to prevent injury and the possible transmission of infection to patients, doctors, other health professionals, practice staff and cleaning contractors.

Sharps may be contaminated by biological substances (eg blood, microorganisms) as well as other hazardous substances (eg medicines, chemicals). All sharps, unless known to be sterile, should be considered contaminated and disposed of in appropriate sharps containers.

Clear protocols for safe handling, use and disposal of sharps are necessary to prevent injury that could lead to infection.

Staff must never handle sharps needles or blades directly, even while gloved.

All staff who may come in contact with sharps need education about the safe use and disposal of sharps.

The infection prevention and control coordinator could educate, train and lead the team to practising safe sharps management consistently.

Responsibilities for sharps management

Employers are responsible for minimising workplace hazard and risk under work health and safety legislation.

While the risk of sharps injury will vary between staff members, it will never be eliminated for all. Therefore, risks must be strategically managed. The infection prevention and control coordinator must take an active role in sharps management to reduce risk without compromising patient safety or quality of care.

An organisation-wide approach to sharps management includes training and education on the risks associated with procedures and devices, as well as implementing safer working practices.

All individuals in the practice are responsible for:

- being familiar with protocols for handling and disposal of sharps and following them correctly (including users disposing of their own sharps)
- knowing which sharps incidents are notifiable under relevant legislation as exposure incidents, and knowing who to report to within the practice (see Exposure to blood and other body substances)
- reporting needlestick injuries or other sharps-related injuries immediately as relevant (eg to the infection control coordinator or other designated staff member on duty)
- making sure anyone with a sharps injury receives appropriate first aid, assessment, and follow-up

care (see Exposure to blood and other body substances), and that the source patient is assessed immediately, if known
- making sure they are vaccinated against hepatitis B and have sufficient immunity (see Staff immunisation policy and procedures)
- participating in education sessions and professional development sessions on handling sharps, as well as those on the use of new safety devices.

Safe sharps handling practices

Sharps injuries can be significantly reduced when the person who is using or generating the sharp takes responsibility for its safe management and immediately disposes of it into an appropriate container at the point of use (Table 7.1. Essentials of safe sharps management).

Sharps containers

Sharps containers must meet current relevant standards and must be:

- mounted (eg on a wall or trolley) to prevent movement during use and to prevent tipping, and
- placed so that they are at an accessible height for the healthcare worker, with the opening of the container visible, but out of reach of children and others, to prevent hands and fingers entering the disposal unit (approximately 1300 mm or more off the ground).

Place sharps containers at the point of care.

To minimise the risk of incorrect disposal, sharps containers could be positioned away from general waste bins. They could be positioned so that no other bin or skip can be placed underneath, to reduce the risk of sharps dropping into other containers during disposal.

A wide-necked sharps container must also be available for any sharps that must be collected by brush and pan, such as shattered glass.

Avoid the use of reusable scalpel handles in favour of disposable sterile single-unit scalpel blades and handles. However, if they are used, blade-remover sharps containers must be used.

Picking up sharps

Instruments – never fingers – must be used to grasp needles, and load/unload needles and scalpels.

Staff must not pick up needles or blades directly with their hands, pass a sharp directly to another person, or leave an undisposed sharp exposed.

Staff should develop and practice safe protocols for working together when sharps are present.

Exercise standard precautions when managing dropped sharps, including wearing gloves. Use tongs, artery forceps or a brush and pan and immediately place the sharp in a sharps container using a retrieval method that minimises the risk of exposure. Empty sharps containers should be available for this purpose; staff should bring the sharps container to the site of a dropped sharp item, not carry the item to a wall-mounted or trolley-mounted sharps container unless immediately alongside.

Needles mounted on syringes can be carefully picked up by the attached syringe while wearing gloves, pointing needle away from the body and bringing sharps container to the sharp to avoid carrying the

unit any distance.

Table 7.1. Essentials of safe sharps management

✓ **Do**	**Think about safe disposal before generating sharps.** Sharps are disposed of at the point of use. **Minimise handling of sharps.** Strategically placed sharps containers must be immediately available in all areas where sharps are generated – no more than 1–2 metres travel should be needed. **Accept responsibility for the safe disposal of sharps.** The person who generates sharps is responsible for its safe disposal. **Set up a neutral zone for sharps.** Designate an area where sharps may be placed and retrieved exclusively ('neutral zone'). This practice reduces the incidence of percutaneous injuries and blood exposures by reducing the occurrence of hand-to-hand transfer of sharp instruments. **Dispose of sharps correctly.** Ensure that sharps are immediately placed into an approved sharps container at the point of use. Place disposable surgical sharps used during a procedure into a puncture-proof container (eg a colour-coded kidney dish), tray, or suture needle holder located in the neutral zone. **Make sure sharps containers are correctly selected, installed and managed.** Ensure that sharps containers: • are compliant with Australian standards • are positioned so that the opening is clearly visible by the health professional when disposing of sharps, to avoid accidental injury from protruding sharps • are placed out of the reach of children • are properly mounted (eg on a wall or trolley) to prevent falling over • are closed and replaced as appropriate • are not over-filled. **Make sure scalpel blade removers are securely mounted to the wall or trolley.** **Lock/seal and store full sharps containers safely until collected.**
✕ **Don't**	**Don't re-cap, remove, bend or break/clip used needles.** Most sharps injuries occur when attempting to manipulate a used needle. **Don't handle scalpel blades.** When loading scalpel blades (if disposable units not used), use artery forceps to hold the blade. When removing used blades, use a wall-mounted, approved scalpel blade removal device. **Don't pass sharps directly from hand to hand.** **Don't overfill sharps containers (ie do not fill above the fill line).** The practice of compacting sharps by shaking the container without the lid on, or forcing more sharps into an already full container can lead to a sharps injury. **Don't reopen a full sealed sharps container.** Attempting to reopen a full container can lead to a sharps injury. **Don't hold 'hands free' scalpel removal devices by hand.** Mount according to the manufacturer's instructions securely (eg on a wall or trolley) and do not remove for replacement until the full bin is locked/sealed.

Safety-engineered medical devices

Practices may reduce the risk of sharps injuries through the use safety-engineered medical devices and other technologies that significantly reduce the risk of sharps injury, such as:

- self-retracting single-use lancets for blood glucose testing
- self-retracting cannula insertion devices
- round-tipped scalpel blades instead of pointed sharp-tipped blades
- vacuum blood collection tubes
- properly installed scalpel blade removal devices
- plastic ampoules in place of glass
- sharps containers meeting Australian Standards and appropriately mounted (eg on a wall or trolley).

Reducing risk of infection after a sharps injury

Sharps injuries (including needlestick injuries) must be reported to the state or territory safe work authority if there has been exposure to blood or other body substances. Staff members must report any sharps injury to senior practice staff, who may be required to report it to the work health and safety authority in their state or territory.

The infection prevention and control coordinator and practice owner must maintain up-to-date information on requirements according to jurisdiction work health and safety laws.

If a sharps injury exposes a staff member to blood or other body substances, staff must follow the procedures for managing exposure to blood and other body substances (see 8. Exposure to blood and other body substances).

Resources

Use and management of sharps, safety engineered devices and medication vials. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

RACGP Position statement. Mandatory COVID-19 vaccination for healthcare workers including GPs (2021)

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

AS 23907 Sharps injury protection — Requirements and test methods — Sharps containers

AS/NZS 3825 Procedures and devices for the removal and disposal of scalpel blades from scalpel handles

AS/NZS 4261 Reusable containers for the collection of sharp items used in human and animal medical applications

AS/NZS 4261 AMDT 1 Reusable containers for the collection of sharp items used in human and animal medical applications

8. Exposure to blood and other body substances

Overview – Exposure to blood and other body substances

Overview – Exposure to blood and other body substances

All staff must be aware of how to prevent exposure to blood or body substances (except sweat).

Any blood or other body substances to which a staff member is exposed must be managed as potential sources of blood-borne viral infections, regardless of the individual's diagnosis or perceived risk.

All staff need to know what to do if they are (or someone else is) exposed to blood or body substances, including who to report the incident to and what immediate actions are needed.

Management of an occupational exposure involves first aid, including immediate decontamination of the exposed area, risk assessment, rapid testing of the exposed person and the source person for blood-borne viruses, prompt post-exposure prophylaxis (if indicated), full documentation of the incident to enable investigation, counselling of the exposed person and source person, analysis of the cause of the exposure incident and modification of procedures as required to reduce the risk of recurrence, and staff education.

Some steps must be done within the practice. These include decontamination, documentation, analysis, risk reduction and staff education.

Allocation of responsibilities for other steps depends on the individual practice's policy. Practices may choose to refer to external providers (eg occupational health physicians or hospital emergency departments) for risk assessment, blood-borne virus testing and post-exposure prophylaxis if required (these must occur within a few hours of the exposure), and for counselling.

Practices must follow requirements for reporting sharps injuries and exposures to blood or other body substances according to legalisation in their state or territory.

Blood-borne viral infection risk

Exposure to blood and other body substances is a risk for transmission of blood-borne viral infections such as hepatitis B, hepatitis C or HIV between healthcare workers and patients.

Procedures associated with risk of exposure of blood-borne viral infections include management of traumatic injury and invasive procedures where there is potential for direct contact between the skin (usually finger or thumb of the healthcare worker) and sharp surgical instruments, needles, or body parts (such as fractured bones or teeth). The degree of risk depends on the amount of blood or body substance injected and the viral load of the person whose blood or body substances were involved in the incident (the source).

The risk of transmitting a blood-borne virus from an untreated infected healthcare worker to a patient during an episode of exposure varies between studies and has been reported as 0.2–13.19% for hepatitis B virus, 0.04–4.35% for hepatitis C virus, and 0.0000024–0.000024% for HIV. The risk of transmission from an untreated infected patient to a healthcare worker during an exposure episode has been reported as 1– 62% for hepatitis B, 0–7% for hepatitis C, and 0.3% for HIV infection.[1]

All blood and body substances must be treated as though infectious, regardless of the person's diagnosis or perceived risk of transmitting infection. Blood carries the highest risk (see Assessing risk of infection transmission).

Strategies for preventing exposure to blood and body substances

Preventing blood and body substance exposure is achieved by implementing standard precautions and other well-defined safe work practices. All staff at risk of blood or body substance exposure must be able to demonstrate an understanding of the principles of standard precautions and transmission-based precautions.

Depending on their role and duties, staff may also need to:

- use safety-engineered devices where available
- practise safe handling and disposal of sharps
- practise safe handling and transport of specimens
- practise safe handling and disposal of waste
- use standard precautions for environmental cleaning
- use appropriate cleaning methods for blood and body substance spills
- practise safe handling and cleaning of reusable medical devices.

Responsibilities for managing exposure to blood and body substances

The practice must have written policies and procedures to manage accidental exposure to blood or body substances, whether by penetrative injury or splash to eyes, mucous membranes or broken skin. These policies should be relevant to the daily routines of the practice and must be reviewed and updated regularly (Table 8.1. Policies and procedures to prevent blood-borne infections).

In the event of an exposure incident, all staff must know:

- what to do immediately after an exposure
- who is responsible for ensuring that necessary activities are carried out
- who to report to.

Staff must have immediate access to contact details of the nearest emergency department (including location), the nominated external service provider to whom the practice refers, and the health authority to which they must report exposures.

Employers must ensure that staff receive regular training and education appropriate for the tasks they are expected to perform.

Staff involved in exposure-prone procedures must have access to appropriate information, training, counselling and vaccination programs.

It is mandatory to report occupational exposures immediately to a designated person, if present, for

advice and further treatment, if indicated and available. All testing procedures and follow-up treatment must be fully documented. Practices must follow their state or territory requirements for reporting sharps injuries and exposures to blood or other body substances.

If the incident occurred during a procedure, the possibility of the patient being exposed to the injured health professional's blood must also be considered. If there is a risk of that a patient was exposed to a health professional's blood, the guidance on risk assessment, screening test and treatment for the exposed person must be applied to the patient.

After the exposure incident has occurred and been managed, the employer must analyse the cause and modify procedures as required to reduce the risk of recurrence and protect staff.

Healthcare workers have a responsibility to know whether they have blood-borne infections. Practices could encourage self-disclosure by ensuring confidentiality and, where practical, by providing counselling and modification of work practices or redeployment to reduce risk of transmission, if necessary.

Healthcare workers with blood-borne infections should be advised by their treating clinician about any limitations to exposure-prone procedures they can perform.

Table 8.1. Policies and procedures to prevent blood-borne infections

Each practice must have clear policies and procedures for all of the following:
Safe handling and disposal of sharps
Safe handling and transport of specimens
Safe handling and disposal of waste
Environmental cleaning
Appropriate management of blood and body substance spills
Safe handling and cleaning of reusable medical devices
Exposure to blood and body substance
Hand hygiene
Where patients and staff can access personal protective equipment
How and when staff members are educated on the appropriate application, removal, and disposal of personal protective equipment.

Summary of steps for managing an exposure incident involving a staff member or patient

Blood or body substance exposure must be assessed and managed immediately to reduce the risk of infection.

Response to an exposure incident includes both care of the exposed person, and actions directed towards the person whose blood or body substances were involved in the incident (source person), if known.

Recommended steps include:

- immediate decontamination of the exposed area and treatment of any wounds
- immediate reporting of the exposure to the infection prevention and control coordinator or designated responsible person
- immediate assessment of the risk of transmission of infection. The practice may choose to refer the exposed person to an occupational health physician or transfer them to a hospital emergency department for this assessment and counselling.
- prompt treatment if indicated, eg post-exposure prophylaxis against a known or suspected blood-borne virus, tetanus vaccination or immunoglobulin, as required. If the exposed person is referred for assessment, treatment is administered or arranged by the hospital or consulting physician. (Post-exposure prophylaxis is not delayed while waiting for results of testing of the source person, but is administered immediately when indicated on the basis of the assessment.)
- confidential counselling for the source person and testing for hepatitis B virus, hepatitis C virus and HIV (or verifying documented carrier status). The practice may choose to refer the source person to an infectious disease physician for counselling and testing.
- documentation of the exposure incident
- testing the exposed person for blood-borne viruses.

Some steps must be done within the practice. These include decontamination, documentation, analysis, risk reduction and staff education.

Allocation of responsibilities for other steps depends on the individual practice's policy. Practices may choose to refer to external providers (eg occupational health physicians or hospital emergency departments) for blood-borne virus testing, risk assessment, post-exposure prophylaxis, and counselling (Table 8.2. Summary of responsibilities when preparing for and responding to a blood/other body substance exposure incident).

Table 8.2. Summary of responsibilities when preparing for and responding to a blood/other body substance exposure incident

Before an incident (always)	All staff: Use standard precautions and follow safe work practices. **Clinical staff:** Keep up to date on knowledge of blood-borne diseases and current procedures for immediate actions in managing blood or body substance exposure, including current prophylaxis measures. **The practice:*** Establish clear policies and educate staff on: • correct use of safety-engineered medical devices or safe-sharp devices. • safe handling and disposal of sharps and waste. • safe handling and transport of specimens. • environmental cleaning, including appropriate management of blood and body substance spills. • safe handling and cleaning of reusable medical devices.

Immediately after exposure	**Exposed person (staff member or patient):** • Decontaminate exposed area, (eg wash wound, rinse eyes if splashed). • Report exposure immediately. • Obtain or arrange referral for assessment and possible prophylaxis immediately. • Ensure the incident is documented. **Clinician managing incident:** • Verify that an exposure has actually occurred. (Body fluid contact with intact skin, or accidental skin penetration by an unused sharp will not necessitate. management as an exposure incident.) • Ensure the exposed site has been decontaminated. • Arrange or perform risk assessment, testing and counselling for the source person. Contact the source person's treating clinician for information about risk. • Arrange or perform wound care, counselling and post-exposure prophylaxis for the exposed person, as indicated according to the risk assessment. **The practice:*** • Ensure risk assessment is completed for the incident. • Arrange/provide immediate assessment and treatment of the exposed person. • Ensure that the incident is documented.
Follow-up after exposure	**Exposed person (staff member or patient):** Follow all instructions **Clinician managing incident:** • Arrange referral to infectious disease specialist, if necessary. • Arrange testing for blood-borne viruses. **The practice:*** • Perform a risk analysis to determine any need for a change to systems. • Make any changes necessary. • Reassess to ensure changes are effective in preventing recurrence.

* Duties assumed by the infection prevention and control coordinator, practice manager or owner.

More information: caring for the exposed person (staff member or patient)

Immediate decontamination of exposed area – within the practice

Skin: wash with soap and water or a skin disinfectant product. Do not squeeze the wound. Do not use caustic agents (eg bleach) as these may compromise skin integrity.

Mouth, nose, or eyes: rinse well with water or saline.

Treat the wound as appropriate (eg suturing, dressing).

Immediate reporting of the incident by the practice

Report exposure to a doctor to ensure prompt and appropriate commencement of treatment.

> **Note: If possible, the exposed person must then be referred outside the practice (eg to an emergency department or specialist).**
>
> The following information describes the steps that are usually performed by an external provider.

Testing the exposed person for blood-borne viruses and providing instructions and information

If the source (patient on whose blood or body substances the person was exposed to) is unknown, the exposed person is tested for blood-borne viral infections. Baseline tests for antibody levels of HIV, hepatitis B virus and hepatitis C virus are performed to establish the person's immune status and identify previously acquired infection. The request should be marked as urgent and fast-tracking of results should be arranged with the laboratory.

Privacy legislation and public health guidelines for handling the exposed person's personal information and maintaining confidentiality must be followed.

An exposed staff member may choose to have these tests performed outside the practice (eg at a different general practice, hospital emergency department, infectious diseases consultant, or sexually transmitted infection clinic).

If post-exposure prophylaxis is required, it should commence within 48 hours. This is normally provided by a hospital, specialist clinic or s100 prescribers.

The exposed person should avoid unprotected sex (eg use a barrier method, such as condoms) until their results are known and discussed and the source patient's risk history have been reviewed.

The exposed person must be given the phone number for the state/territory health department communicable/infectious diseases unit (see Links).

If the injury is high risk, or if the source patient has risk factors for blood-borne viral infections, the exposed person should be referred to an infectious diseases specialist and/or s100 prescriber, where relevant.

Assessing risk of infection transmission

The degree of risk of infection transmission after exposure to blood or other body substances depends on the type of injury, the type and volume of body substance, and the source patient's infection status.

The highest risk is associated with percutaneous exposure to blood from an infected person with a high titre of hepatitis B virus, hepatitis C virus or HIV. The risk of transmission of blood-borne viruses is very low after exposure to faeces, nasal secretions, saliva, sputum, sweat, tears, urine and vomitus, unless the substance is visibly bloody.[2]

Practices must contact health authorities for advice on risk level in a specific case, or refer the injured person for expert risk assessment.

Post-exposure prophylaxis

Post-exposure prophylaxis can include HIV prophylaxis, hepatitis B immunoglobulin, hepatitis B vaccine, tetanus-containing vaccination and/or immunoglobulin.

Prophylaxis is normally arranged by the infectious diseases referral clinic/hospital. If it is not possible to refer the exposed person for specialist assessment and treatment, practices must consult their state/territory health department communicable disease unit for advice about appropriate post-exposure prophylaxis (see Links).

More information: caring for the source person

Explaining the process

If the source is known and contactable, the practice must explain to the source that a health professional was inadvertently exposed to their blood or body substance, and that assessment and testing is required because:

- every healthcare facility follows this protocol after an exposure of a health professional to blood or body substances
- all sources are assessed and tested – there is no discrimination
- it would be of benefit to the exposed health professional, eg to help their managing clinician decide if any follow-up is needed.

If relevant, the source should be reassured that they are not responsible for the accident, that they have not been exposed, and that there will be no cost to them.

The practice should explain that the incident is being investigated to prevent a recurrence, and reassure the source that their confidentiality will be maintained within privacy and public health guidelines.

Arranging pre-test counselling for the source person

Pre-test counselling should be offered to the source. This is required by legislation in some states and territories. Counselling must be provided by a qualified person.

The source should be informed about the expected waiting time for test results, and that this lag time is the reason it is necessary to ask them personal questions about activities that are known to carry risk of viral transmission.

Taking a history from the source person

Taking a history from the source will help identify the likely risk of disease exposure to the exposed person.

The history aims to identify risk-associated activities or previous exposure, especially in the past 6 months. These include:

- unprotected sexual intercourse, multiple partners, or partners from a high-risk region

- sharing injecting needles or inhalation equipment
- tattoos or body piercing
- sharing razor blades or toothbrushes
- blood or body substance exposure of mucous membranes or nonintact skin
- blood transfusion before February 1990 (for hepatitis C virus)
- previously diagnosed infection with HIV, hepatitis B or hepatitis C.

Testing the source person for blood-borne viruses

Most patients will agree to a blood test if they are approached in a sensitive manner. In some states and territories there is legislation that includes mechanisms requiring testing if the source refuses or is unable to consent to testing.

Informed consent must be obtained from the source for testing for hepatitis B, hepatitis C and HIV.

The source's blood should be tested as soon as possible. Results can be available within 1 hour if received at an appropriate testing laboratory. The referring hospital or specialist clinic would normally conduct this testing.

Commencement of prophylaxis, if required, should not be delayed while waiting for blood test results.

Documentation of the exposure

After the exposure has been managed, document the following information:

- what procedure was being undertaken when the exposure occurred
- how the injury occurred
- the nature and extent of the injury
- exactly what caused the injury (eg specify the needle gauge)
- the type of body substance involved
- how much blood/body substance the staff member was exposed to
- what personal protective equipment was being used
- the source person, if identified. This must be managed in a way that protects the source person's privacy.

Resources and references

Resources

Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM). Post-exposure prophylaxis after non-occupational and occupational exposure to HIV. Australian National Guidelines (2nd edition). 2016

The Australian immunisation handbook

See Links for a list of state and territory communicable diseases/infectious disease units.

Victorian Department of Health: Managing exposures to blood and body fluids or substances

NSW Health: Work Health and Safety - Blood and Body Substances Occupational Exposure Prevention

SA Health: Handling blood and other body substances

Western Australia Department of Health: Communicable Disease Control Directorate Guideline: Management of Occupational Exposure to Blood or Body Fluids in Healthcare Settings

Queensland Health: Management of occupational exposure to blood and body fluids

ACT Health: Occupational Risk Exposure (ORE) Pack

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

References

1. Communicable Diseases Network Australia. Australian national guidelines for the management of healthcare workers living with blood borne viruses and healthcare workers who perform exposure prone procedures at risk of exposure to blood borne viruses (revised 2019): Australian Government Department of Health; 2018 [Accessed 31 March 2022].
2. Pierce A. Exposure to blood-borne viruses. In: Symons J, Myles P, Mehra R, Ball C, editors. Perioperative medicine for the junior clinician. Sussex, UK: Wiley Blackwell; 2015. p. 370-373.

9. Cleaning, laundry and waste management

Overview – Cleaning, laundry and waste management

Overview – Cleaning, laundry and waste management

Practices must have a current cleaning policy that identifies staff members' responsibilities, work health and safety issues, and procedures for routine scheduled cleaning, unscheduled cleaning, and monitoring of effectiveness.

The practice must perform a risk analysis to determine the methods, frequency and thoroughness of cleaning and the products used.

Avoid reusable linen where possible (eg through use of single-use paper sheets on examination tables, single-use disposable surgical drapes, disposable sterile barrier systems for surgical packs).

If reusable linen is used, the practice must have a policy on when to change linen, precautions when handling soiled linen, and the procedures for washing, drying (if done on site) and storing linen in accordance with the current relevant standard.

Clinical linen must not be laundered in a staff member's home, because most domestic washing machines cannot achieve the washing cycle temperature, time and detergent dosing or the drying time and temperature specified in the relevant standard for laundering linen. (Clinical linen includes all linen used in the practice except tea towels used only in the practice kitchen/lunchroom.)

Staff members responsible for cleaning and on-site laundry must be given education and training to perform these duties correctly and in accordance with the current relevant standard.

All staff, including those without primary responsibility for cleaning, laundry or waste management, must understand and follow policies for cleaning and hygiene throughout the practice.

The practice must have an up-to-date policy for waste management that conforms to state or territory regulations and meets the current national standard for management of clinical and related wastes.

Waste must be safely and appropriately segregated into clinical (and related) waste and general waste as it is generated. Staff responsible for handling waste must receive regularly updated education and training on safe handling and disposal.

Policy and responsibilities

Cleaning is fundamental to infection prevention and control. Routine cleaning of all surfaces and equipment reduces dust and dirt, which can harbour microorganisms. Prompt unscheduled cleaning and disinfection is required as part of standard precautions whenever blood or other body substances unintentionally contaminate surfaces that come into direct contact with skin.

All practices must have a cleaning policy that includes both routine and scheduled cleaning (Table 9.1. What to include in a practice cleaning policy). The cleaning policy could set out the roles and responsibilities of all staff.

Specific cleaning requirements will vary for each practice. Risk analysis must be undertaken to determine the methods, frequency and thoroughness of cleaning and the products and equipment

used.

All staff members with responsibility for cleaning, including cleaners who are not part of the practice team, must adhere to the practice cleaning policy.

If cleaning activities are outsourced to cleaning service providers, document all cleaning delivery procedures , including minimum cleaning frequencies and methods, staffing, equipment (including chemicals for standard and transmission-based precautions, monitoring/auditing, and management of the cleaning service). Include the practice's cleaning policy in any contract and conduct audits to ensure the policy is being adhered to.

Table 9.1. What to include in a practice cleaning policy

The name of the infection prevention and control coordinator and the staff member responsible for implementing cleaning policies (if different).
Work health and safety issues (use of standard precautions, use of transmission-based precautions where required, use of personal protective equipment, relevant immunity/immunisation, eg against hepatitis B virus (see 6. Staff screening, immunisation, and infection management), procedures for managing exposure to blood or other body substances, safe use of chemicals used, poisons information).
Scheduled cleaning details procedures: schedule and description (areas, surfaces and items to be cleaned at which intervals and with which products and equipment).
Safety data sheets for hazardous chemicals used in cleaning (more information available from Safe Work Australia).
Unscheduled cleaning procedures: method and products to be used in each likely scenario.
Monitoring process: when and how the effectiveness of cleaning will be checked.

Each practice must appoint a person responsible for ensuring implementation of practice cleaning policies, and ensure that all staff, including any contract cleaners, need to know who has this role.

All staff and contractors must report to this person if there are any problems with scheduled cleaning or if an event occurs that requires unscheduled cleaning (eg contamination of any surface or equipment with blood or body substances).

Work health and safety issues

The environmental cleaning policy needs to address work health and safety issues relevant to environmental cleaning, whether conducted by employed or contract cleaners. It is to include:

- the use of standard precautions
- immunisation against hepatitis B virus (see Staff screening, immunisation, and infection management)
- the use of personal protective equipment in specified circumstances (see Personal protective equipment)
- the protocol for managing exposure to blood or body substances (see Exposure to blood and other body substances)
- correct product use and the location of safety data sheets in the event of chemical exposure

- contact details for the relevant jurisdictional poisons authority.

Where contract cleaners are engaged:

- the practice needs to ensure cleaning contractors comply with its work health and safety requirements, including correct use of PPE, spill management, and chemical handling procedures
- a formal agreement should clearly outline responsibilities for maintaining safety data sheets, chemical registers, and safe storage of cleaning products
- contractors should be informed of any relevant infection prevention and control procedures, particularly when cleaning clinical or procedural areas
- the practice should retain copies of the contractor's relevant work health and safety documentation, including training records, immunisation status, and emergency protocols

Employers have an obligation under work health and safety legislation to:

- obtain safety data sheets for hazardous chemicals used in the workplace, including cleaning products used by contract cleaners
- ensure all workers, including contractors, are aware of safe use practices and emergency procedures
- ensure staff have appropriate immunity to blood-borne viruses.

Safety data sheets identify the chemical ingredients, related hazards, information on safe handling and storage, first aid information, and other safety information. Safety data sheets are available free of charge from suppliers of hazardous chemicals.
A register of hazardous chemicals used, handled or stored at the workplace needs to be prepared and kept up to date at the workplace. This register needs to include the current safety data sheet for each of these chemicals and needs to be readily available to all workers and contractors who use or may be affected by the chemicals at the workplace.

Safe use, storage, and disposal of chemicals

Practices need to have procedures for the safe use, storage, handling, transfer, and disposal of all chemicals used on-site, including those used in reprocessing reusable medical devices (eg enzymatic cleaners, detergents, high-level disinfectants) and by contractors.

Chemical safety procedures should cover:

- storing chemicals in secure, well-ventilated areas away from heat or ignition sources
- keeping chemicals in original containers that are clearly labelled and tightly sealed when not in use
- transferring (decanting) chemicals into secondary containers that are correctly labelled in accordance with local regulations
- using appropriate personal protective equipment (PPE) as specified in manufacturer instructions and safety data sheets
- ensuring all staff are trained in the correct and safe use of chemicals, including first aid measures
- keeping safety data sheets for all chemicals readily accessible to staff at point of use
- reviewing the contents of the spill kit against the requirements in the safety data sheets for each chemical, and documenting emergency procedures for spill management. These procedures must be easy to find and follow in the event of an incident.

Chemical disposal procedures need to:

- follow local environmental and waste management regulations
- use authorised disposal services for used or expired chemicals where required
- never allow chemicals to be poured down sinks or drains unless explicitly permitted by the manufacturer and local laws
- minimise chemical waste through appropriate inventory management and preparation practices.

Environmental consideration

When disposing of chemicals, consider environmentally safer alternatives (eg biodegradable or low-toxicity formulations), where possible.

Scheduled cleaning

Practices must have a cleaning schedule that ensures that the practice is systematically and appropriately cleaned. The cleaning schedule sets out the staff who are responsible for cleaning, the surfaces that need cleaning, the frequency of cleaning, the cleaning method, and the products and equipment to be used (Table 9.2. Examples of items in a practice cleaning schedule).

In addition to scheduled cleaning (routine cleaning that occurs at pre-planned intervals, regardless of events), opportunistic cleaning may also be necessary throughout the working day. This may include cleaning surfaces after they are touched by a patient with a potentially transmissible infection (for example, disinfecting a chair or examination table after a patient with influenza).

The cleaning agent, method and frequency depend on the risk of transmission of clinically significant pathogenic microorganisms. The practice's risk assessment for each surface or item will depend on:

- the potential for exposure (eg high-touch versus low-touch surfaces)
- the pathogenic microorganisms likely to be present, including the possible presence of multidrug-resistant microorganisms (Table 9.3. Examples of persistence of microorganisms on dry surfaces). This may change over time, eg during an outbreak
- and the vulnerability of patients or staff to infection.

Table 9.2. Examples of items in a practice cleaning schedule Download the practice cleaning schedule template template

Surface	Usual cleaning agent[(a)]	Usual method[(b)]	Frequency	Person responsible
Door handles (consultation rooms, examination room)	Detergent and water	Damp wipe	Daily	[*Name*]
Door handles (toilets)	Detergent and water	Wipe	Twice daily and after use by patient with suspected relevant infection	[*Name*]

Surface	Usual cleaning agent[a]	Usual method[b]	Frequency	Person responsible
Surfaces (bench tops, couches, sinks, toilets, sanitary bin lids, floors) Frequently touched surfaces (light switches, handrub dispensing pumps)	Detergent and water	Damp wipe with a disposable cloth or wipe	As determined by the practice, eg: Bench tops, sinks, toilets and treatment room floors daily Other floors every second day Frequently touched surfaces twice daily during an outbreak	[*Name*]
Hard floors	Detergent and water (Detergent and disinfectant if required for a specific organism)[c]	Vacuum (using vacuum cleaner with HEPA-filter) then damp-mop to ensure dust is captured and not dispersed into the air. Spot cleaning with detergent and paper towel (Note: mops must be cleaned and left to dry after use, not left wet in a bucket.)	As determined by the practice	[*Name*]
Carpet[d] – regular vacuum cleaning	Vacuum cleaner with high-efficiency particulate absorbing filter	Vacuum	As determined by the practice (eg daily)	[*Name*]

Surface	Usual cleaning agent[a]	Usual method[b]	Frequency	Person responsible
Carpet[d]/carpet tiles – spot cleaning	Carpet cleaning solution recommended by manufacturer or Vacuum cleaner	Replace carpet tiles that are marked or contaminated Use spill kit to blot excess moisture and other matter (eg vomitus) Clean according to directions for use Dry carpet quickly (ventilation/heating) and quarantine room until dry Use carpet cleaning solution for other spills Use vacuum cleaner for solid objects	As determined by the practice (eg when soiled)	[*Name*]
Carpet – steam[e]/dry cleaning	Usually performed by a carpet cleaning contractor using a hot water extraction method recognised by the current relevant standard to minimise chemical and soil residue	Perform out of hours if possible Dry carpet quickly (ventilation/heating) and quarantine area until dry	As determined by the practice (eg when soiled or yearly)	[*Name*]
Fabrics (eg upholstered furniture)[f]	Fabric cleaner recommended by the manufacturer or Detergent and water	Clean according to directions for use and quarantine the item until dry	As determined by the practice (eg when soiled)	[*Name*]
Drug refrigerator (outside surface and handle grooves)	Detergent and water or disinfectant	Wipe	Daily spot check Weekly clean	[*Name*]

Surface	Usual cleaning agent[a]	Usual method[b]	Frequency	Person responsible
Other items (eg stethoscopes, [g] plastic blood pressure cuffs, pulse oximeters, digital thermometers, tape measures, digital devices)	Detergent and water, detergent wipes	Clean thoroughly, wipe over with detergent wipe	As determined by the practice	[*Name*]
Mobile phones, tablets	Detergent and water, detergent wipes, alcohol wipes	Wipe	Frequently	[*Name*]
Computer keyboard[h]	Detergent and water, detergent wipes, alcohol wipes	Wipe	Twice daily and when visibly soiled	[*Name*]

HEPA: high-efficiency particulate absorbing

a. The choice to use a disinfectant depends on the local epidemiology and a local risk assessment, such as the presence of a multi-drug resistant organism or other pathogen of concern.

b. Does not apply to blood and body substance spills management

c. The use of a TGA-listed hospital-grade disinfectants with specific claims for efficacy against relevant microorganisms, or a chlorine-based product such as sodium hypochlorite, should be based on assessment of the risk of transmission of infectious agents from the particular spill and the compatibility of the disinfectant with the floor material where the spill occurred.

d. Carpet should not be installed in treatment areas, which should have hard smooth flooring that can be easily cleaned.

e. Steam cleaner must operate at correct temperature to inactivate microorganisms.

f. Upholstered chairs should be avoided and replaced with chairs that have non-porous, smooth surfaces and smooth edges with no grooves or crevices.

g. Some products can damage stethoscope tubing. Check the manufacturer's advice. stethoscope tubing

h. Washable keyboard covers may be installed.

Table 9.3. Examples of persistence of microorganisms on dry surfaces

Microorganism	Persistence (days)

Microorganism	Persistence (days)
Acinetobacter species	3 days to 5 months
Clostridium difficile (spores)	5 months
Enterococcus species	5 days to 4 months
Escherichia coli	1.5 hours to 16 months
Klebsiella species	2 hours to >30 months
Mycobacterium tuberculosis	1 day to 4 months
Pseudomonas aeruginosa	6 hours to 16 months
Salmonella typhimurium	10 days to 4.2 years
Shigella species	2 days to 5 months
Staphylococcus aureus	7 days to 7 months
Haemophilus influenza	12 days
Adenovirus	7 days to 3 months
Human coronaviruses*	Up to 9 days
Influenza virus	1–2 days
Norovirus	8 hours to 7 days

Reported time ranges for microorganisms detected on dry surfaces (range of surface types as investigated in studies).

*human coronaviruses such as severe acute respiratory syndrome (SARS) coronavirus, Middle East respiratory syndrome (MERS) coronavirus or endemic human coronaviruses

Sources: Siani et al (2015),[2] Kampf (2020)[3]

Scheduled cleaning duties

The cleaning schedule must identify the staff who have responsibility for cleaning and their specific duties. These staff members need task-specific education and training.

If cleaning activities are outsourced to cleaning service providers, practices should make sure that contract cleaners clearly understand their role in the practice's infection prevention and control, including when, how and why they need to clean specific surfaces and equipment. Document all cleaning delivery procedures, including minimum cleaning frequencies and methods, staffing, equipment (including chemicals for standard and transmission-based precautions, monitoring/auditing, and management of the cleaning service).

Scheduled cleaning of surfaces

All environmental surfaces within the practice must be included in the cleaning schedule to ensure that the practice is systematically cleaned. The level of cleaning must be determined based on the risks of contamination and transmission of infection. Risk assessment considers the frequency of traffic or bodily contact of each surface.

Surfaces in frequent use and likely to become soiled over a day include carpets, toilet/bathroom fixtures, consultation room furniture and equipment (examination couch, desk and medical equipment).

Surfaces with minimal contact include windows, walls, doors and general furniture.

It is unfeasible to clean some frequently touched items (eg pens, handles, phones, keypads, computer keyboard, mouse) after each use. These items may be considered as always contaminated; after touching any of these items, health professionals must clean their hands before patient contact (see Hand hygiene).

A practice's risk assessment should determine if and when frequently touched items should be cleaned.

Frequency of scheduled cleaning

The cleaning schedule must allow for more frequent cleaning of surfaces that are subject to frequent contact (eg heavily trafficked or high-use areas).

Clean frequently touched surfaces at least daily. During an outbreak, cleaning may be necessary twice daily or more often, as advised by health authorities.

In addition to scheduled cleaning, clean high-use surfaces whenever they are visibly soiled and after every known contamination by a likely pathogen.

Surfaces that are subject to less frequent contact can be scheduled for less frequent cleaning, as well as being cleaned when visibly soiled or immediately after contact with blood or other body substances.

Cleaning agents and methods

Cleaning agents must be appropriately selected for the intended use.

Factors to consider when selecting cleaning agents include:

- which pathogenic microorganisms are likely to be present. For standard precautions, detergents and/or low-level disinfectants such as quaternary ammonium compounds are suitable. The appropriate agent will change when precautions against a specific pathogen are required. For example, if norovirus is likely to be present, a chlorine-based agent ('bleach') or improved hydogren peroxide is needed.
- kill claim by manufacturer – whether the product kills relevant pathogens and how quickly, has sustained antimicrobial activity after it has been applied to a surface, and will work in the presence of organic matter
- wet-contact times – how rapidly the product will kill microorganisms and whether it will evaporate before the required kill time is reached. The contact time for various common pathogens is shown on disinfectant labels.
- compatibility – with the surfaces to be cleaned, with other cleaning agents used on the same surface
- safety – including whether staff must use personal protective equipment while using the product
- ease of use – whether the product is available in squeeze or pour bottles or wipes, whether it needs dilution, whether the instructions are easy to follow, what training is required
- value for money.

For ease of convenience, safety, and to improve compliance, practices may consider standardising and minimising the number of products kept in the practice.

For surfaces, including hard surfaces such as floors, the choice between detergent only and detergent followed by a disinfectant depends on the local epidemiology and a local risk assessment. A disinfectant must be used, in addition to or combined with detergent, when there is a higher risk of contamination with infectious agents and when transmission-based precautions apply (see 5. Levels of precautions).

When disinfectant is required and a combined cleaning/disinfectant product is not used, manual cleaning with water and detergent must be performed before using disinfectant (two-step process).

Common low-level and intermediate-level disinfectants that can be used for this purpose include quaternary ammonium compounds, alcohols (ethel or isopropyl alcohol), chlorine-releasing agents and improved hydrogen peroxide.

Therapeutic Goods Administration-approved products purchased in single-use, pre-diluted containers are preferred, to both reduce error and contamination associated with dilution.

If dilution is required for a detergent or disinfectant product, solutions must be prepared by the practice in accordance with the manufacturer's directions. The practice must date the container and develop a policy to ensure appropriate storage and consideration of shelf life and stock rotation. Ideally, disinfectant solutions (for practices not using pre-diluted products) should be freshly prepared each day or as needed in accordance with the practice's policy. Containers must not be topped-up and unused solution must not be returned to the stock container.

After cleaning, surfaces must be allowed to dry completely, which will only take a few minutes. Excessive moisture, such as pooling in an uneven floor, promotes bacterial growth and may lead to contamination.

Under workplace safety legislation, business owners must ensure safe use and handling of any hazardous chemicals, which includes:

- correct labelling

- correct storage
- maintaining a hazardous chemical register
- holding and supplying current data safety sheets
- training, educating and supervising staff to use them safely.

Selecting a detergent

For general cleaning, detergents with a pH range 6–8 are generally appropriate.

Disposable detergent-impregnated wipes are useful for spot cleaning by clinical and other staff. There are many brands of suitable TGA-listed detergent wipes in varying sizes.

Conveniently place detergent wipes where they can be used by staff immediately when needed (eg on dressing trolleys).

The use of detergent wipes is inappropriate for cleaning larger surfaces or for general use (eg by the contract cleaner).

Selecting a disinfectant

When a disinfectant is required, it can be used after cleaning with detergent and water, or can be used in combination with detergent when available in a suitable combined product (often called a 'two in one' approach).

Combined detergent/disinfectant products are available as wipes or solutions. These are suitable for cleaning and disinfecting of visibly clean surfaces, if required after spot cleaning, and for cleaning of frequently touched surfaces during an outbreak.

Disinfectants can reduce the number of microorganisms on a surface, but they are not a replacement for thorough cleaning. The cleaning process determines the effectiveness of any disinfectant.

Requirements for effective disinfection

To kill microorganisms, a disinfectant must:

- be in contact with the surface for long enough (refer to the manufacturer's instructions)
- be used at the right concentration
- be applied to a clean, dry surface
- be effective against the particular microorganism.

Disinfectants used in healthcare settings typically have a contact time of between 30 seconds and 5 minutes for relevant microbial species. Contact time means the period for which the surface must stay wet, after applying the disinfectant solution, to achieve a 99.9% reduction in the number of relevant microbes. The effectiveness of disinfectants in practice can be overestimated for those with long contact times (eg 10 minutes), because it would be difficult to achieve this contact time without reapplying the product.[2]

Cleaning technique

Only use disinfects after the surface has been manually cleaned with a mechanical action; they must not just be applied to a contaminated surface. Disinfectants may fail to kill/inactivate microorganisms when the surface has not been manually cleaned or cleaning was ineffective, because they can be inactivated by organic matter and/or fail to penetrate the matter.

When using combined detergent/disinfectant solutions or wipes, the cleaning method will depend on whether the surface is visibly soiled or not, the agents in the product, and the manufacturer's instructions for use. If the surface is visibly soiled with organic matter, a two-step process is required: clean with one wipe, then disinfect with a second wipe. This technique is required when using either a disposable impregnated wipe or a disposable/reusable cloth to apply the solution.

Disinfectants must be compatible with the surface material to avoid damage to the surface, which could compromise future cleaning.

Classification and types of disinfectants

Disinfectants are classed as low, intermediate or high level (Table 9.4. Classification of disinfectant activity).[4]

Alcohol-based disinfectants can be used on non-critical equipment (equipment in contact with intact skin), such as thermometers, tape measures and stethoscopes, after use. The surface must be clean before application, and sufficient wet contact time is required. Alcohol-based disinfectants may be available as wipes. Hazards of alcohol-based disinfectants include flammability and damage to some substances (eg rubber, plastics and glues).

Quaternary ammonium compounds have detergent as well as disinfectant properties. When used for surface cleaning on a visibly soiled surface they must be applied twice: first the surface should be manually cleaned. Then a fresh wipe or solution should be applied and the surface left wet for the required contact time to kill microorganisms. They should not be used in combination with soaps or anionic detergents because these agents can deactivate the disinfectant. Quaternary ammonium compounds can cause contact dermatitis of the hands.

Chlorine-based disinfectants such as bleach have limited application in general practices and other office- and community-based practices, but may be used to decontaminate some surfaces during a suspected norovirus outbreak. The solution should be made up just before use (1 part bleach to 9 parts water) and should stay in contact with the surface for at least 10 minutes before drying. Chlorine-based disinfectants are associated with work health and safety hazard (eg lung and skin irritation), can cause instruments to rust, bleach soft fabrics and have an unpleasant odour.

Accelerated hydrogen peroxide[5] is widely used in healthcare including office-based practice. It is highly effective and efficient for killing or inhibiting a broad spectrum of microorganisms including yeasts, fungi, bacteria, viruses, and spores. It physically removes organisms and cleans, has rapid action requiring short contact times (1 minute), and is effective for controlling biofilm. It spreads easily across a surface and penetrates it, leaving no residue on surfaces, and is non-corrosive when used on metals. Accelerated hydrogen peroxide poses a lower risk the user and the environment than other disinfectants because it is non-irritating, non-toxic (free of volatile organic compounds), and safe for use near foods).

Emerging disinfectants and techniques such as ultra violet (UV) irradiation, hydrogen peroxide vapour and other fogging/misting technologies, steam vapour, and high-Intensity narrow-spectrum light, are not routinely used in general practices and other office-based practices.[6] Most require special training.

Disinfectant wipes

There is limited guidance on the use of disinfectant wipes in environmental decontamination in health care.[2]

Disinfectant-impregnated wipes are intended for single use. Their efficacy depends on leaving a layer of liquid disinfectant on a clean surface. If rapid drying occurs, the contact time may be less than required to kill target microorganisms.[7]

Some detergent/disinfectant wipes claim activity against norovirus so it may be convenient to use these instead of chlorine disinfectants, noting the wet contact time required.

Table 9.4. Classification of disinfectant activity

Level	Definition*	Notes
Low	Rapidly destroys/inactivates most vegetative bacteria as well as medium-sized lipid-containing viruses	May not destroy all bacterial endospores, mycobacteria, fungi or inactivate all small nonlipid viruses
Intermediate	Destroys/inactivates all microbial pathogens including *Mycobacterium tuberculosis*, fungi and viruses, except bacterial endospores and some fungal spores	
High	Destroys/inactivates all microbial pathogens except large numbers of bacterial endospores	Generally not used in general practices and other office-based healthcare practices

*when used according to the manufacturer's instructions

Regulation of disinfectants

Chemical disinfectants are regulated by the Therapeutic Goods Administration. Hospital-grade disinfectants that make specific claims to kill microorganisms, and disinfectants intended for use on medical devices, are required to be on the Australian Register of Therapeutic Goods (indicated by AUST R number on label).[8] Other disinfectants not intended for use on skin or medical devices are not required to be registered, but must meet regulatory requirements (indicated by AUST L number on the label).

In response to the COVID-19 pandemic, the Therapeutic Goods Administration has also permitted manufacturers to claim a product is effective against SARS-CoV-2.[9] A list of disinfectant products with specific claims against SARS-Cov-2 or COVID-19 on the product label is available on the Therapeutic Goods Administration website.

Cleaning of mobile items

Items in waiting areas

In the past, practices often provided magazines and toys in the waiting room. This is no longer the norm.

Without cleaning after each use, shared or re-used toys can be a source of cross-infection between patients and should not be provided.

Magazines and books should not be provided in waiting areas. Reading matter for patients and visitors should be restricted to items that are taken away (eg brochures, fact sheets).

Electronic equipment

Staff members' electronic devices, including mobile phones and tablets, can harbour and transmit pathogens. As it is impractical to clean these often enough to be confident they will not transmit microbial pathogens, they should be regarded as contaminated. Staff must clean their hands after touching these devices before they touch patients.

Clinically relevant pathogenic bacteria have been detected on mobile phones of hospital medical staff.[10] Phones should be frequently wiped with detergent or a disinfectant and must not be handled in the toilet area.

Daily disinfection of tablet computers with isopropanol wipes has been reported to reduce microbial load.[2] Devices could be decontaminated following the device manufacturer's instructions and those of the cleaning agent manufacturer. Otherwise they should be assumed to be contaminated and hand hygiene practised accordingly.

Transferable clinically relevant pathogenic bacteria have been detected in dry surface biofilms on keyboards in healthcare settings.[11] Washable plastic keyboard covers can be used to reduce contamination and facilitate cleaning.

EFTPOS/payment terminals that are handled by staff and patients, including keyboards, should be frequently wiped with detergent or a disinfectant. Practices could use contactless terminals to reduce physical contact. Receptionists should use alcohol-based handrub after handling patients' credit, Medicare or health fund cards.

Lanyards and neckties

Avoid wearing lanyards and neckties as they may facilitate transmission of infection.[12] If a lanyard must be worn, it should frequently be wiped with detergent or disinfectant.

Cleaning reprocessing area

The area dedicated to reprocessing reusable medical devices must be kept very clean, which involves multiple cleaning episodes during use. Do not use the same cleaning equipment in 'clean' and 'dirty' zones. For example, the disposable cloth used to clean the sinks and bench space used to clean reusable medical devices (such as instruments) should not also be used for cleaning the packing area and loading where clean devices are placed, or the area where packs are placed after sterilisation.

The steriliser, ultrasonic cleaner and washer disinfector also require cleaning.

Cleaning after contamination by blood or other body substances (spills)

Blood or body substances other than sweat (including faeces, urine, saliva or vomitus) need to be treated as potentially infectious substances that can transmit disease on contact.

Incidents that result in contamination of surfaces by blood or other body substance need to be managed promptly. Faeces is highly contaminated. Blood and body substances that contain blood also carry a risk of transmission of blood-borne viruses.

All staff members need to be familiar with the practice's policy and procedure for managing blood and body substance spills. They should be managed promptly to reduce the potential for contact with other patients or staff or visitors and minimise damage to surface materials.

Overview of procedure for cleaning spills

Detergent is be used for initial treatment and may be sufficient for very small spills that require only spot-cleaning.

Disinfectant is necessary for:

- small (<10 cm) spills
- large (≥10 cm) spills
- any spill on a surface that is in contact with the skin
- spills involving a potentially serious pathogen.

Small and large spills require a two-step process, in which immediate treatment of the surface is followed by thorough cleaning with detergent or disinfectant, using the usual cleaning supplies.

When a surface is soiled by blood or other body substances, when the presence of multi-resistant organisms (eg *C. difficile*) is suspected, or during transmission-based precautions, manual cleaning with a detergent solution must be followed by (or combined with) the use of an appropriate-grade disinfectant with specific claims for efficacy against the relevant microorganisms, and which is listed on the Australian Register of Therapeutic Goods (see Table 9.4. Classification of disinfectant activity).

Spills kit

Practices must have a kit readily available to manage contamination of floors or other surfaces by blood or other body substances.

A spills kit usually consists of a suitable rigid-walled, labelled container (eg bucket or plastic sealable box) containing materials for basic cleaning (Table 9.5. Sample contents of a basic spills kit).

Practices can purchase commercially available ready-made spills kits or assemble their own.

Practices that provide consultations off-site could carry a spills kit in the vehicle. This is required if carrying sharps or clinical waste.

Table 9.5. Sample contents of a basic spills kit

Laminated printed guide with a list of spill kit contents and the management procedure

Single-use gloves

Eye protection (eg goggles/face shield)

Surgical masks

Disposable waterproof aprons

Clinical waste bags (marked as hazardous waste)

General waste bags

Emesis bags

Absorbent agent (eg clumping cat litter, polymerising beads or other absorbent material)

Paper towels (will need ample to absorb liquids such as urine)

Scoop and scrapers (eg two small pieces of cardboard)

Detergent wipes (for spot cleaning only)

Disinfectant wipes (a larger volume of disinfectant may sometimes be needed, but need not be kept in the kit)

Hospital-grade disinfectant or sodium hypochlorite listed or registered by the Therapeutic Goods Administration

Hazard signs to place around the area to be quarantined Note: All components should be disposable, to ensure against cross-contamination between uses.

Precautions

Standard precautions apply, including personal protective equipment appropriate to the task (eg gloves, goggles/face shield, apron). The person performing this cleaning must put on personal protective equipment while keeping well away from the spill.

Method

The method for cleaning spills will depend on the volume of the spill and where it occurs (hard surfaces or textiles; see Table 9.6. Sample spills cleaning protocols).

Do not use liquid on a spill, as this will spread the spill.

If the spill is on a **hard surface**:

1. Confine and contain the spill with an absorbing agent suitable for that spill type:

- For blood, use wads of paper towel or purpose-designed absorbent agent.
- For vomitus, use a clumping agent to cover and deodorise.

Scoop or wipe up and safely remove any solid matter and excess material.

2. Clean with detergent and water or detergent wipes.
3. Dry the surface.
4. Use disinfectant, if required.
5. Dispose of contaminated material, including personal protective equipment, as instructed in the cleaning and waste management policies.
6. Cleanse hands (see 2. Hand hygiene).

If the spill is on **soft textile fabric or carpet**:

For non-removeable textile fabric (eg upholstery) or standard carpet:

1. Cover the site with an absorbent agent (cat litter, polymerising beads or other absorbent material).
2. Scoop up residue safely without causing material to disperse.
3. Damp-pat surface (do not wipe or scrub) to remove more material.
4. Dispose of contaminated material, including personal protective equipment, as instructed in the cleaning policy.
5. Clean fabric or carpet by damp patting with dampened disposable cloth using detergent and water or recommended carpet cleaning agent.
6. Quarantine the area until the soft fabric or carpet is dry. (Arrange steam cleaning when dry, if needed – do not vacuum-clean.)
7. Discard the used cleaning materials in the appropriate waste container.
8. Cleanse hands (see 2. Hand hygiene).

For removable fabric or carpet tiles, remove from the area, clean as for non-removable textiles, and replace when completely dry. Heavily contaminated carpet tiles can be discarded.

Table 9.6. Sample spills cleaning protocols Download the spills cleaning protocols template

Spot cleaning (very small, well-defined spills that do not require use of spill kit)	Use examination gloves. (If glass suspected, use protective utility gloves and discard them afterwards.) Wipe up spot immediately with a damp cloth, tissue or paper towel. Consider disinfecting according to potential for skin contact with the site and suspected pathogens. Discard contaminated materials and dispose of gloves. Perform hand hygiene.

Small spills (up to 10 cm diameter)	Select appropriate personal protective equipment. Wipe up spill immediately with absorbent material. Place contaminated absorbent material into impervious container or plastic bag for disposal. Clean the area with detergent. Wipe the area with [*Insert name of TGA-approved disinfectant used in the practice*]. Ensure surface remains wet for the required time [*insert number of minutes*] (reapply if necessary). Allow to dry. Perform hand hygiene.
Large spills (> 10 cm diameter)	Select appropriate personal protective equipment. Cover entire area of the spill with an absorbent clumping agent and allow a few seconds to absorb Using two scoops, lift absorbed material into waste bag placed at the site. Change gloves. if visibly soiled. Clean site with detergent. Remove bag to waste storage area and remove personal protective equipment. Perform hand hygiene. Don fresh gloves. Wipe the area with a suitable disinfectant and allow to dry for the time advised by the product manufacturer. Perform hand hygiene.

TGA: Therapeutic Drug Administration

Cleaning tools

Mops

Mops and buckets must be thoroughly dry before reuse. Only use a clean, dry mop, as wet mops can develop unacceptable levels of contaminating bacteria. The practice may need more than one mop or detachable mop head to ensure a clean, dry mop is always available.

If buckets used, they must be cleaned after use and allowed to dry upside-down to dry.

Single-use mop heads are available, but increase landfill waste and may increase cost to the practice.

Detachable, reusable mop heads or pads could be laundered in accordance with the current relevant standard.

Cleaning cloths

Disposable cleaning cloths or paper towel may be more convenient and less contaminating than reusable cloths.

If reusable cleaning cloths are used, they must be laundered in accordance with the current relevant standard after each use.

Avoid using sponges because they do not dry easily and therefore promote microbial growth.

Brooms

Brooms must not be used in any healthcare area as they disperse dust and microorganisms into the air.

Vacuum cleaners

Filters, including high-efficiency particulate-air (HEPA) filters, require regular replacement.

If the practice uses an external contract cleaning service, they should use a vacuum cleaner that is used only for that practice and remains on site, to avoid cross-contamination with other premises.

Monitoring of cleaning

Adherence to the cleaning schedule can be monitored by setting up a cleaning record in which staff record completion of scheduled cleaning rounds and extra cleaning after spills.

Contract cleaners can be required to complete a checklist of cleaning tasks. From time to time, records can be audited for adherence.

The effectiveness of cleaning is usually done through visual inspection, such as spot checking of surfaces each morning to confirm the previous day's scheduled cleaning has been completed.

Routine microbiological sampling and other methods applicable to larger health facilities (fluorescent markers, tracing agents) is generally not feasible or required in general practices and other office-based practices.

Discrepancies in the cleaning record or any observed problems in cleaning must be reported to the staff member responsible for overseeing cleaning.

Laundry

Where possible, practices could reduce the need for reusable linen by using disposable paper roll on the examination couch and in the treatment room, disposable pillow slips and paper towels. Examination couches may not need to be covered at all if cleaned appropriately between uses and designed with an adjustable headrest, which avoids the need for a separate pillow.

If the practice has reusable linen, it should have a policy on when to change linen, precautions when handling soiled linen, and the procedures for washing, drying and storing linen in accordance with the current relevant standard. The policy should be informed by assessment of the risk of infection to patients.

Reusable linen must be laundered in accordance with the current relevant standard. All onsite and offsite facilities that process or launder linens for health care must have documented operating policies consistent with the standard.

Laundry services in some areas of Australia offer linen services for health facilities. The practice is responsible for ensuring that the service meets the healthcare linen standard. Other services, such as hospitals or aged care facilities, may also provide laundry services to general practices and other office and community-based practices. The practice must obtain instructions on linen handling and appropriate bags for collecting and transferring heavily soiled or wet linen.

If laundering is done onsite, staff responsible for laundering linen must receive education and training to perform these duties in accordance with the current relevant standard.

During a pandemic, extra precautions may be needed. For example, if scrub suits are worn, they are bagged for safe transportation and either laundered separately at home, or laundered in accordance with the current relevant standard, either on-site or by an accredited laundry service provider.

More information: managing linen (if used)

Laundering must be done in accordance with the current relevant standard.

How often to change linen (if used)

Single-use disposable hand cloths and drapes are now considered preferable to linen. However, if reusable sterile hand cloths or drapes are used for surgical procedures, they must be laundered, packaged and sterilised after a single use, either onsite or by an accredited laundry service provider.

If the practice uses linen for other purposes, it should be changed if:

- it has been used by a patient whose clinical status necessitates the use of contact precautions (eg known or suspected of having scabies, lice or skin infections such as methicillin-resistant *Staphylococcus aureus*)
- there has been a blood or body substance spill on the linen
- linen is visibly soiled
- linen has absorbed odour.

Linen must also be changed before a minor surgical procedure.

If staff wear scrub suits at work, the same principles apply.

Both reusable linens and single-use disposables are associated with costs to the environment.

Precautions when changing linen

Staff handling linen must use appropriate personal protective equipment, as required within standard or transmission-based precautions. Staff must wear gloves if linen is soiled, and also wear a mask, apron and safety glasses if dripping with blood or other body substances.

The person changing linen must:

- before handling the linen, check for and safely remove any sharps or other objects (see Sharps)
- avoid squeezing linen or rolling it up tightly in case there are hidden sharps

- avoid unnecessary handling or shaking linen, as this could disperse microbes
- place used linen into a covered, lined container while awaiting cleaning
- store containers for used linen away from clean linen, preferably in a designated 'dirty' utility area.

Linen that is wet with blood or other fluid body substances should be collected into a transparent plastic bag or alginate bag supplied by the laundry, before being placed in the used linen receptacle.

After removing linen that is contaminated with blood or body substances or has been in contact with a patient necessitating contact precautions, the examination or treatment couch must be first cleaned according to the practice's policy for spills, then wiped with detergent wipes or solution and paper towel. If linen has been in contact with a patient with an antimicrobial-resistant organism or norovirus, cleaning with detergent must be followed by disinfection using appropriate disinfectant wipes or solution (see 8. Exposure to blood and other body substances).

Pre-wash stain treatment

If linen is heavily soiled (eg by vomitus) or likely contaminated by a clinically significant pathogen that could be dispersed by splashing, the item must be discarded via the clinical waste stream.

Blood and other stains on linen can be managed by rinsing and applying an oxygenated stain remover (while wearing appropriate personal protective equipment), in accordance with the current relevant standard. Soaking linen in a bucket is not recommended.

Washing

Laundering of clinical linen must be in accordance with the current relevant standard, whether it is done onsite, at home (not recommended), or by a commercial laundry service.

Either a hot or cold wash cycle with appropriate detergent must be used.

When using a hot wash cycle, the temperature and time specified by the standard may be unattainable or impractical for most practices and with domestic washing machines.

If hot water disinfection cannot be achieved in accordance with the current relevant standard (for example, because the load contains heat-sensitive items), then chemical disinfection is acceptable. However, the disinfectant must be validated for antimicrobial efficacy equivalent to hot water disinfection.

Activated oxygen-based laundry detergents provide antimicrobial activity in addition to their stain-removing properties. Chlorine bleach is also an economical, broad-spectrum chemical germicide, but is unsuitable for some fabrics.

Drying

Mechanical drying in a tumble dryer is the preferred method because of the effects of thermal disinfection.

Hands must be clean when transferring washed linen from the washing machine to the dryer.

All linen must undergo a hot cycle until completely dry. The dryer temperature and cycle time depends on the fabric.

The standard for laundry practice specifies a minimum temperature and required time at temperature that may not be practical for practices to achieve.

Condenser and heat-pump driers typically have lengthy cycles (and in case of heat pump, low temperature) and are not suitable for use in healthcare facilities.

Storage

Clean linen must be stored in a clean, dry and dust-free environment.

Waste management

The practice needs a regularly updated policy for waste management that conforms to state or territory regulations and meets the current national standard for management of clinical and related wastes.

Staff responsible for handling waste must receive education and training on safe handling and disposal.

The practice's waste management policy must cover:

- the correct segregation of waste according to the waste streams designated by the state or territory
- storage of waste
- disposal of waste
- work health and safety procedures
- who is responsible for monitoring waste management and educating and training staff to correctly follow waste management procedures.

These are typically categorised as general waste/recyclables, clinical waste and clinical-related waste (such as pharmaceutical, chemical and cytotoxic waste). Confidential waste (eg patient records, hard copies of referral letters) must also be correctly disposed of. Specified categories differ between jurisdictions.

Work health and safety considerations

When developing a waste management policy, employers need to consider and identify optimal strategies for:

- minimising human contact with waste (including strategies to reduce or avoid double handling)
- incorporating standard precautions, including appropriate use of personal protective equipment
- avoiding manual compaction of any waste
- ensuring safe transfer of waste from clinical areas to the waste storage area
- safe storage
- ensuring correct documentation for clinical waste transporter, as required by the relevant environmental protection authority.

The policy must incorporate and align with the practice's procedures to deal with spills and protocols for managing exposure to blood or other body substances.

Responsible person

The practice must nominate a person responsible for waste management. Their responsibilities may include:

- monitoring appropriate waste disposal (eg checking that waste is being appropriately segregated)
- acting as the contact person for waste transport/disposal companies
- providing task-specific waste management education for staff.

Monitoring can involve photographing the visible contents (top layer) of each bin at random intervals to assess content.

Waste segregation

Waste needs to be segregated into the waste streams required by local authorities. Categories and requirements differ between jurisdictions. Practice waste typically falls into the categories of general waste, clinical waste, and clinical-related waste (Table 9.7. Examples of waste streams).

Staff must segregate waste as it is generated. The practice must provide a separate bin for each waste stream. Bins must be made of appropriate material, big enough, placed in the right position, and emptied regularly.

The correct packaging is the responsibility of the practice, and staff must have training in the handling and disposal of wastes.

Waste segregation and handling in the practice may be subject to specific requirements of the state or territory environmental protection authority. This may include documentation of waste composition. Waste transport and disposal companies may be required to notify practices in writing of waste segregation requirements, and may refuse to collect waste that is incorrectly segregated or unsafely presented.

Table 9.7. Examples of waste streams

Waste stream	Description	Examples

Waste stream	Description	Examples
Clinical waste	Items with potential to cause infection, sharps injury or public offence. Definitions and requirements can differ between jurisdiction – refer to relevant state or territory regulations. If appropriately segregated, only a small percentage of the total waste produced by a practice will be clinical waste.	Discarded sharps Human blood, other body substances and tissues (excludes teeth, hair, nails, urine and faeces, unless visibly blood-stained) Waste from patients known or suspected to have an epidemiologically significant communicable disease (eg influenza) or are suspected or known to be colonised/infected with an antibiotic-resistant organism (eg multi-resistant *S. aureus*)
Clinical-related waste	Pharmaceutical, chemical and cytotoxic waste	Discarded medicines Chemotherapy Cleaning products over use-by date
General waste	All other waste not classified as clinical waste or clinical-related waste. It includes recyclable and non-recyclable wastes, and hazardous non-clinical waste such as e-waste. Definitions and requirements can differ between jurisdiction – refer to relevant state or territory regulations.	Office waste (material with confidential details or information that identifies an individual patient requires shredding before recycling) Kitchen waste Urine, faeces, teeth, hair, nails (unless visibly bloodstained) Disposable nappies Used tongue depressors (unless patient has an infectious disease that requires extra precautions) Non-hazardous ‘pharmaceutical’ waste (eg out-of-date saline) Waste generated by non-clinical activities

All practices must meet national standards for waste management, but specific categories and requirements differ between jurisdictions. Practices must consult their state or territory environmental protection authority or other relevant local authority responsible for waste management.

Clinical waste containers

Clinical waste containers must be puncture-resistant and leak-proof.

Standard clinical waste containers must be:

- rigid-walled
- located in an area that prevents unauthorised access
- sealable with a secure lid or lined with a standard labelled bag that can be tied off
- safe for disposal – no swing lids or loose lids (ideally with hands-free operation)
- appropriately labelled: yellow, displaying a biohazard symbol, and labelled ‘clinical waste’.

Liquid clinical waste must be absorbed using an absorbent (‘clumping’) agent such as cat litter or polymerising beads, then bagged (preferably double-bagged) to avoid leakage and potential for splash.

Sharps containers must meet the current Australian standard. They should be mounted either on a wall or bench or trolley at the point of care. The recommended height above the ground is 1.3 m to limit child access but allow the user to see the opening. Mounted sharps containers may be designed specifically to remove blades. The ‘do not fill above this line’ instruction must be strictly followed for the safety of all staff.

Cytotoxic waste containers for sharps must have the same properties as sharps containers. They must be purple, display the telophase symbol on white background, and be labelled ‘cytotoxic waste’.

Cytotoxic waste containers for non-sharps must have the same properties as clinical waste containers. They must be purple, display the telophase symbol on white background, and be labelled ‘cytotoxic waste’.

Unused or expired pharmaceuticals can be returned to pharmacies for safe disposal. Full or partial vaccine vials can alternatively be disposed of in a sharps container. These items must be managed as clinical waste.

General waste containers

Practices must consider their waste segregation practices and decide on what type of containers are required.

Practices may provide receptacles for disposal of recyclables (eg appropriately placed separate waste and confidential waste bins, glass and plastic recyclables bins).

Storage of waste

Before collection and disposal, clinical and related waste must be appropriately stored:

- The storage area should be dedicated to waste storage (no mixing with other stored materials such as supplies). Separate spaces should be designated for clinical waste and general waste (eg by tape or paint on the floor).
- The storage area should be appropriately signed.
- Clinical waste bags may need to be removed from small bins and tied off safely and transferred to the storage bin. Double-bagging when transferring will reduce leakage of bags. Clinical waste should not be decanted from one bag to another.

- Bags should remain within secure outer containers that are appropriately labelled.
- The waste storage area should be secure (not accessible to the public). Accessible free-standing or secured bins, even with locked lids, may still pose a risk if placed in a yard at the rear of the practice. The waste collection company may require after hours access via code or key.

A spill kit could be located in the storage area or nearby.

General waste must be stored in covered receptacles such as rubbish bins in a secure location. This can be in the same area as the clinical waste bins, but each should be in a separate, defined area.

Practices that provide services off site (eg aged care or home visits) will need to manage and safely store clinical waste such as sharps in private vehicles. Practices must check regulations for transporting waste in their state or territory.

Collection and disposal of waste

The waste collection company replaces full bins with clean empty lined bins. Contractors do not debag any bins on site – this is done mechanically at the waste treatment site.

Clinical and related waste must be transported by a licensed transport and disposal company that offers appropriate treatment and disposal services. The practice is responsible for waste it has generated until it has been rendered safe.

The transport/disposal company may refuse to collect from overflowing, wrongly segregated or unlabelled bins.

Practices must document clinical waste collection and keep these records.

Toilets

Toilets must be easily accessible and well signposted. They will ideally be located inside the practice but, if this is not possible, they must be as close to the practice as possible.

You could provide separate toilets for the practice team and patients.

Toilets must be supplied with:

- toilet paper for each toilet
- hand washing facilities, including a sink and liquid hand cleanser (see Hand hygiene technique)
- rubbish bins
- sanitary bins or hygienic means to dispose of sanitary items
- exhaust fan/s for ventilation (see Ventilation).

Supply paper towel wherever liquid handwash and water is used for hand hygiene, including adjacent to toilets. The use of hot air driers is acceptable in toilets (see Drying hands).

Case study

Case study – Cleaning

Environmental cleaning after assessment and/or testing of a suspected COVID-19 case

After the patient has left the room, remove contaminated PPE before cleaning the room.

Wear fresh, non-contaminated gloves, a surgical mask and eye protection to clean the room.

Effective cleaning requires the combination of mechanical action, detergent and water, then drying.

Wipe down surfaces with both a detergent and a disinfectant. Use a cleaning detergent followed by a disinfectant, or use a 2-in-1 product with both cleaning and disinfecting properties.

- Detergents remove dirt and organic material, and should be used according to the manufacturer's directions and then allowed to dry.
- Disinfectants kill most infectious agents, and should be used after a detergent. They include chlorine or hydrogen peroxide or any hospital-grade, Therapeutic Goods Administration–listed product commonly used against norovirus. They should be used according to the manufacturer's directions.

Wipe down any touched surfaces (including door handles, desktops, stethoscopes and otoscopes) between patients. Clean fabric surfaces with bleach.

Dispose of contaminated waste appropriately in contamination bins, as usual.

Once surfaces have dried, you can safely use the room for the next standard patient consultation. You don't need to leave the room empty for any period of time.

Resources and references

Resources

Recommended routine cleaning frequencies. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Australian Commission on Safety and Quality in Health Care. Environmental cleaning and infection prevention and control resources

Australian Commission on Safety and Quality in Health Care. Environmental cleaning: emerging environmental cleaning technologies

Therapeutic Goods administration. Disinfectants for use against COVID-19 in the ARTG for legal supply in Australia

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

Royal Australian College of General Practitioners. GP Standard 5. Criterion GP5.1 – Practice facilities. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

AS 3816 – Management of clinical and related wastes

AS/NZS 4146 – Laundry practice

AS/NZS 3733 – Textile floor coverings – cleaning

References

1. Safe Work Australia. Understanding safety data sheets for hazardous chemicals. Fact sheet: Australian Government; 2012. [Accessed 3 October 2022]
2. Siani H, Maillard JY. Best practice in healthcare environment decontamination. Eur J Clin Microbiol Infect Dis 2015; 34: 1-11.
3. Kampf G, Todt D, Pfaender S, et al. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Infect 2020; 104: 246-251.
4. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019). Version 11.12 Updated March 2022. Canberra: National Health and Medical Research Council; 2019 [Accessed 29 September 2022].
5. Rochon M, Sullivan N. Products based on accelerated and stabilized hydrogen peroxide: evidence for cleaning and sanitizing efficiency, environmental and human safety and non-corrosiveness. Can J Infect Control 1999; Summer: 51-55.
6. Australian Commission on Safety and Quality in Health Care. Environmental cleaning: emerging environmental cleaning technologies. Fact sheet: ACSQHC; 2022. [Accessed 3 October 2022].
7. Royal College of Nursing. The selection and use of disinfectant wipes. RCN guidance. London: RCN; 2011.
8. Australian Government Department of Health and Aged Care Therapeutic Goods Administration. Disinfectants, sterilants and sanitary products. Australian Government; 2021 [Accessed 30 April 2022].
9. Australian Government Department of Health and Aged Care Therapeutic Goods Administration. Disinfectants for use against COVID-19 in the ARTG for legal supply in Australia. Australian Government; 2022 [Accessed 30 April 2022].
10. Olsen M, Nassar R, Senok A, et al. Mobile phones are hazardous microbial platforms warranting robust public health and biosecurity protocols. Sci Rep 2022; 12: 10009.
11. Ledwoch K, Dancer SJ, Otter JA, et al. How dirty is your QWERTY? The risk of healthcare pathogen transmission from computer keyboards. J Hosp Infect 2021; 112: 31-36.
12. Australian Commission on Safety and Quality in Health Care, National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare 2019 (Version 11.12). MAGICapp; 2022 [Accessed 29 September 2022].

10. Reprocessing of reusable medical devices and other devices in general practice

Reprocessing Overview
Classification for reprocessing devices
Quality Systems
Risk-Based Approach
Agents for reprocessing
Dispopsable materials used in the sterilisation process
Managing the area for reprocessing for reusable medical devices
Process definition
Validation
Release of reusable medical devices following reprocessing
Routine monitoring and control
Keeping reprocessing equipment working effectively
Outsourced and offsite instrument handling
Resources
Reprocessing glossary

Overview – Reprocessing reusable medical devices

> **Transition period for updated reprocessing requirements** The reprocessing guidance in this section has been updated to align with AS 5369:2023 Reprocessing of reusable medical devices and other devices in health and non-health related facilities. A transition period applies until 1 January 2028. During this period, practices may continue to follow the previous RACGP reprocessing guidance while preparing for the transition to the updated requirements. Practices, accreditation surveyors and other stakeholders seeking access to the previous reprocessing guidance can view it here: Practices are encouraged to commence transition planning as early as possible to ensure compliance with the updated requirements by 1 January 2028.

Safe and effective reprocessing of reusable medical devices is essential for protecting patients, consumers and the practice team. Failure to correctly reprocess reusable medical devices risks the transmission of infectious agents, or an adverse reaction from residual cleaning, disinfection or sterilising agents.

These reprocessing guidelines align with Standards Australia *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities*. They reflect best practice in infection prevention and control, supporting safe, effective reprocessing and high standards of patient safety, workforce protection, and regulatory compliance and are specifically designed for general practice and community healthcare settings. These guidelines recognise that while most general practices do not have large reprocessing departments, they still need safe, consistent, and auditable systems that protect patients and staff.

The reprocessing guidelines in this section reflect current best practice and align with national standards. They are designed to support safe, effective reprocessing in general practice. Practices must also ensure compliance with relevant legislative and regulatory obligations specific to their jurisdiction.

The goal is not to make life harder for practices; it is to bring clarity and national consistency so that

every team can meet best-practice standards confidently, regardless of size or location.

This introduction provides a comparison of what has changed for reprocessing reusable medical devices in general practice, then a high-level overview of each sub-section related to reprocessing. Each sub-section is linked or accessible via the left-hand menu and provides further detail.

Comparison of changes to reprocessing in general practice

Area	**Prior practice/ guideline**	**New/clarified guideline (aligned to AS 5369)**
National standard referenced	AS/NZS 4187:2014 and AS/NZS 4815:2006	AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities
	Informally guided	These guidelines are explicitly aligned to Australian Standard AS 5369
Framework	General instructions only	Risk-based approach where each practice needs to document a structured risk assessment for reprocessing Risk assessment is now a documented, auditable requirement under the *Standards for general practices* (6th edition) criterion CG9.E
Cleaning equipment	Manual cleaning is acceptable	Washer-disinfector is required for pre-cleaning (manual cleaning alone no longer sufficient, except when the manufacturer advises)
Ultrasonic cleaning	Optional	Remains an optional step before washer-disinfector
Dedicated area	Separation between clean/dirty zones required	Dedicated or clearly segregated area required; layout and workflow must prevent contamination and be documented
Initial treatment timing	“Promptly after use” (undefined)	Ideally within 1 hour, no later than 4 hours after use

Training	Staff must be competent	Structured, documented training and competency assessment required; formal qualifications are not mandatory. Practices need to ensure that training, supervision, and competency assessment are delivered and overseen by a competent person.
Traceability	Strongly encouraged	Explicit requirement to record device tracking, batch/ cycle numbers, and patient linkage
Validation	Annual validation of steriliser only	Validation applies to all reprocessing equipment, including washer-disinfector, with defined monitoring intervals
Outsourcing	Allowed to any external provider	Must be a hospital or an accredited facility (including accredited general practice), or co-located site that surveyors can access
Environmental impact	Mentioned briefly	Emphasis on sustainability and considering environmental impact of resources and processes

Overview – High-level summary of reprocessing guidelines

The overview in Table 10.1 below provides a high-level summary of the content of this section.

Table 10.1 High level overview of guidelines for reprocessing reusable medical devices

Section of reprocessing guidelines	**Key information –** *This is a high-level summary of requirements and recommendations made throughout this section of the IPC Guidelines. You can view further rationale, detail and examples within the full corresponding sections.*
Classification for reprocessing devices	• Most devices used in general practice are classified semi-critical or non-critical. • The process for cleaning, sterilising and storing a reusable medical device is based on its classification.

Quality systems and staff competency	• The practice needs to document its reprocessing policies and procedures.
	• For each reusable medical device, practices need to check the information provided by the manufacturer for the required validated processes for cleaning, disinfection, packaging (if required), and sterilisation.
	• The practice owner and manager need to support the implementation of all policies and procedures for the reprocessing of reusable medical devices at the practice.
	• Staff involved in reprocessing must meet the following requirements, with training and oversight **provided by a competent person** ❗:
	  ◦ Documented training – Staff must receive structured education led by a person with demonstrable expertise in reprocessing practices, either through in-house training or external courses.
	  ◦ Supervision – Staff must be supervised by a competent person during training and initial practice.
	  ◦ Competency assessment – Staff must undergo regular, documented assessments by a competent person to confirm they can perform reprocessing tasks safely and correctly.
	• Training must be delivered and overseen by a competent person.
	
	⚠️ Formal nursing or sterilisation qualifications are not required to perform reprocessing activities. However, the quality and credibility of training, supervision, and assessment are critical. These need to be delivered and monitored by a person who is competent in reprocessing practices.

Risk-based approach	• To apply a risk-based approach effectively, practices need to adopt a structured risk management process that supports the safe and consistent reprocessing of reusable medical devices. The steps include:
	  ◦ Appointing a reprocessing team
	  ◦ Developing a process flow
	  ◦ Risk analysis
	  ◦ Risk evaluation
	  ◦ Risk control
	  ◦ Evaluation of overall residual risk
	  ◦ Risk management review
	  ◦ Finalising and implementing the risk analysis
	
	The Risk-based approach section of these guidelines provides detail and examples of how to adopt a structured risk management process that supports the safe and consistent reprocessing of reusable medical devices.

Agents for reprocessing	• Use TGA-listed cleaning/disinfection agents. • Avoid household or corrosive cleaners. • Maintain a register of agents and safety data sheets. • Consider environmental impact and sustainability.

Disposable materials used in the sterilisation process	• Use validated sterile barrier systems (pouches, wraps). • Include Class 1 chemical indicators. • Use demineralised water for sterilisation. • Store packaging materials properly.

Managing the area for reprocessing for reusable medical devices	• Practices need to:
	  ◦ have a designated area for reprocessing reusable medical devices that is physically separated ❗ from treatment and administration areas
	  ◦ establish a workflow pattern that prevents contamination of clean (pre-sterile and sterile) areas.
	• Ideally, the practice has a dedicated room for reprocessing.
	• Shared spaces are acceptable only if physical and functional separation is maintained.

Process definition	• Personal protective equipment is to be worn during reprocessing and may require changing between stages.
	• Use labelled, leak-proof containers for transport.
	• Wipe/rinse immediately after use.
	• The **interval between use and reprocessing** should be as short as possible, ideally within 1 hour, and never longer than 4 hours.
	• Depending on the risk categorisation of the reusable medical device, the **cleaning method** can involve:
	  ◦ the use of an ultrasonic cleaner followed by automated cleaning using a washer-disinfector
	  ◦ the use of a washer-disinfector that may incorporate an ultrasonic cycle
	  ◦ manual cleaning, with subsequent use of the above.
	• Packaging: Use correct size, label, and seal properly.
	• Sterilisation: Use steam under pressure; monitor cycles.
	• Drying: Allow packs to cool and dry fully before handling.
	• Unloading: Inspect each pack. If any are wet, damaged, or have compromised seals, they are not sterile and must be reprocessed.
	
	⚠️ Manual cleaning alone is not acceptable unless the device's instructions for use specifically prohibit automated cleaning.

Validation	• Validation applies to all stages of reprocessing and is required:
	  ◦ when new equipment is installed
	  ◦ when equipment is repaired, moved, or upgraded
	  ◦ annually (minimum)
	  ◦ when changes affect the sterilisation process
	• All validation steps must be documented and retained for quality assurance and accreditation. Maintain:
	  ◦ technician validation reports
	  ◦ calibration certificates
	  ◦ staff competency records
	  ◦ challenge load diagrams and cycle data.

Routine monitoring and control	• For every cleaning and sterilisation cycle, the practice needs to record:
	  ◦ equipment used
	  ◦ the date of sterilisation
	  ◦ load number
	  ◦ packs/items in the load
	  ◦ cycle settings (time, temperature, dosage, etc.)
	  ◦ who performed the task
	  ◦ visual inspection results.
	• Results recorded by printout or a data log need to be viewed after each cycle before sterilised items can be released for use.
	• Class 1 chemical indicators need to be used on:
	  ◦ every pack in every load, or
	  ◦ the tray of unwrapped items.

Release of reusable medical devices following reprocessing	• Confirm all stages completed: Cleaning, disinfection, sterilisation, and packaging need to meet validated criteria. • Inspect packaging to ensure packs are dry, intact, sealed, and labelled correctly. • Check indicators and records. Review chemical indicators, cycle printouts or data logs, and confirm sterilisation parameters were met. • Record the release decision with name/initials in a logbook or digital system. • Quarantine non-compliant items. Wet, damaged, or failed items must be reprocessed and documented. • Protect sterility post-release, storing and transporting items in clean, sealed containers to maintain sterility until use.
Keeping reprocessing equipment working effectively	• Service equipment annually (including steriliser, washer-disinfector). • Use qualified technicians for servicing, calibration, and validation. • Keep records of all maintenance, checks, and repairs. • Follow recommended timeframes for servicing and calibration.

Outsourced and offsite instrument handling	• Practices can consider using offsite sterilisation when in-house reprocessing is not feasible. Acceptable providers include:
	  ◦ accredited general practices, hospitals, or commercial services
	  ◦ co-located reprocessing facilities (must be assessable during accreditation).
	• Loaned instruments need to be fully reprocessed before use, even if packaging is intact.
	• Shared reprocessing services must follow guidelines and be supported by formal agreements.
	• Practices using reusable medical devices for offsite procedures need to ensure pre-cleaning/treatment is done immediately after use and sterility is maintained during transport. Policies must cover safe handling and traceability.
	• Legal and insurance cover is essential when reprocessing for other facilities – consult your insurer or medical defence organisation.

Enviornmental considerations

Reprocessing reusable medical devices not only supports patient safety and infection control but can also reduce a practice's environmental footprint.

- **Sustainability benefits** – Reprocessing is often more environmentally sustainable than relying on single-use instruments. It can:
  - reduce clinical and plastic waste
  - lower demand for raw materials
  - decrease energy use in manufacturing and disposal.
- **Context matters** – The environmental impact varies depending on:
  - the type of device
  - local waste management systems
  - availability of environmentally responsible single-use alternatives.

Alignment with the Standards – Practices should consider environmental sustainability in their reprocessing decisions, consistent with **F3 Environmental sustainability** in the *Standards for general practices* (6th edition).

Classification for reprocessing devices

The Spaulding Classification Scheme categorises reusable medical devices based on their risk of infection transmission, and the necessary level of reprocessing required before reuse. Table 10.2 provides general criteria for the reprocessing and storage of reusable medical devices in general practice based on the Spaulding Classification.

In general practice, most devices are **semi-critical** or **non-critical**, as procedures are typically non-invasive or minimally invasive. **Critical devices**, which come into contact with sterile body tissues or the vascular system, are rarely used in general practice. The specific requirements for reprocessing critical devices are not included in this section. For detailed guidance on critical devices, refer to *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities*.

Table 10.2 General criteria for reprocessing and storage of reusable medical devices

Level of risk	Process	Storage
Non-critical medical device A medical device that comes into contact with intact skin but not mucous membranes	Clean as soon as possible after using For further treatment, disinfect with compatible low-level or intermediate-level instrument grade disinfectant or thermal disinfection **Note:** Some non-critical medical devices might not come into direct contact with a patient, eg a kidney dish or bowl. However, as the item is used within the patient environment there is potential for the item to become contaminated	Store in a clean, dry place to minimise environmental contamination
Semi-critical medical device A medical device that comes into contact with mucous membranes or non-intact skin	Clean using a washer-disinfector as soon as possible after using Sterilise by moist heat after cleaning *Manual and ultrasonic cleaning of reusable medical devices is only acceptable if the device's validated cleaning instructions require manual cleaning or ultrasonic cleaning, or as a pre-treatment prior to cleaning in a washer-disinfector*	Store to prevent environmental contamination in a designated storage system (e.g. dedicated clean cupboard or drawer, or a controlled environment drying cabinet)

Critical medical device A medical device that is intended to be introduced directly into or have contact with the vascular system or normally sterile areas of the body **Note**: A critical medical device contaminated with microorganisms confers a high risk of transmission of infectious agents	Pre-clean as above If a reusable medical device is heat or moisture sensitive, sterilise using an alternative low-temperature sterilisation process Refer to *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities*	Sterility needs to be maintained Integrity of the package needs to be maintained Needs to be protected from environmental contamination and stored in a designated storage area Reusable medical devices processed through a liquid chemical sterilisation process to be used immediately

Quality systems

Overview – Critical processes for reprocessing

Practices need to establish and maintain a comprehensive, quality-assured process for reprocessing reusable medical devices. This includes validated procedures and monitoring systems to ensure every instrument is cleaned, disinfected, packaged, sterilised, stored, and used safely and effectively. These processes cover the following core elements:

- Managing documentation and records
- Appointing a reprocessing team and defining responsibilities
- Providing adequate resources, including skilled staff and proper facilities
- Controlling and monitoring services or products from external providers
- Ensuring reprocessed items are identifiable and traceable throughout the process
- Managing any nonconforming products
- Calibrating and maintaining reprocessing equipment and instruments.

A clear process is required for calibrating and performing preventive maintenance on all reprocessing equipment, including any testing instruments.

Quality assurance also includes implementing and maintaining a risk management process, using a structured risk-based approach for identifying, evaluating, and controlling hazards throughout the reprocessing cycle. Following the quality systems outlined below, the IPC Guidelines provide a risk-based approach for practices reprocessing reusable medical devices (see Risk-based approach).

Documentation

Policies and procedures

The practice needs to document its reprocessing policies and procedures. These need to address, at a minimum, the categories in Table 10.3.

Reprocessing activities need to align with existing relevant practice policies, such as work health and safety, training, response planning, immunisations).

Table 10.3 Documented reprocessing procedures

Category	Inclusions
Procurement and equipment	• Purchasing of reusable medical devices and reprocessing equipment, including instructions for use • Qualification of equipment, including reusable medical devices and reprocessing equipment
Collection and cleaning	• Collection of used reusable medical devices from their point of use • Cleaning of reusable medical devices prior to disinfection and/or sterilisation

Inspection and preparation	• Inspection, assembly, and testing (where applicable) of reusable medical devices prior to disinfection • Inspection, assembly, testing (where applicable), and packaging of reusable medical devices prior to sterilisation
Processing and sterilisation	• Loading and unloading of equipment used to reprocess reusable medical devices (eg washer-disinfector) • Disinfection and sterilisation of cleaned reusable medical devices
Validation and monitoring	• Validation and routine control of cleaning, disinfection, and sterilisation processes, including rationale for assigning a particular reusable medical device to a specific product family and processing category • Routine monitoring and control of cleaning, disinfection, and sterilisation processes
Traceability and release	• Traceability of reprocessed semi-critical reusable medical devices • Release of reusable medical devices after reprocessing
Storage and handling	• Handling, transport, and storage of reprocessed reusable medical devices • Handling of specialised, loaned, and trial reusable medical devices
Maintenance and cleaning	• Cleaning of reprocessing equipment and the reprocessing area • Periodic preventive maintenance (eg calibration) of reprocessing equipment
Incident management	• Actions to be taken in the event of a biological or chemical spill or exposure • Control of non-conforming reusable medical devices • Recall of reusable medical devices
Quality and compliance	• Review of deviation reports and other indicators of quality or procedural problems

Records

Practice records need to include, at a minimum:

- The patient-level traceability of sterilised items
- Purchase and equipment records, including all reusable medical devices and reprocessing equipment
- Monitoring records for reprocessing equipment (routine checks and performance verification)

- Cleaning, disinfection, and sterilisation process records
- Microbiological surveillance testing results (where applicable)
- Cleaning records for both reprocessing equipment and the reprocessing area
- Training and competency records for all practice team members involved in reprocessing
- Staff rosters or allocation logs identifying responsibility for each reprocessing activity
- Maintenance records for reusable medical devices (where applicable) and for all reprocessing equipment
- Installation, operational, and performance qualification documents for reprocessing equipment (where applicable)
- Deviation or incident reports, and (where applicable) records of corrective or preventive actions taken
- Recall records for reusable medical devices (where applicable)

Controlling and monitoring software

Software that controls or monitors cleaning, disinfecting, and sterilising needs to work as intended and be tested if any changes impact its function.

Roles and responsibilities

Practice leadership

The practice owner and manager need to support the implementation of all policies and procedures for the reprocessing of reusable medical devices at the practice.

They need to:

- assign responsibility and authority for reprocessing activities to one of the practice's infection prevention and control coordinators, document and communicate this to the practice team
- establish and maintain working relationships between all members of the practice team and external stakeholders responsible for the management, performance and verification of reprocessing activities.

Infection prevention and control coordinator

See **Role of the infection prevention and control coordinator**.

The practice's infection prevention and control coordinator/s with accountability for reprocessing activities need to:

- have relevant experience in reprocessing reusable medical devices
- have the authority to implement the practice's policies
- implement safe and quality reprocessing procedures
- supervise day-to-day reprocessing activities.

Staff training and education

Correct reprocessing of reusable medical devices requires technical expertise and knowledge to minimise the risk of infection transmission. Practices need to ensure that training, supervision, and

competency assessment are delivered and overseen by a competent person.

Staff involved in reprocessing need to:

- receive structured, documented education and training, either through in-house programs or external courses
- be supervised by a competent person during training and initial practice to ensure safe and correct technique
- undergo regular, documented competency assessments conducted by a competent person to confirm they can perform reprocessing tasks reliably and safely
- fully understand each task, know exactly how to perform every step, and reliably follow all steps without deviation
- complete additional training whenever new procedures, devices, or equipment are introduced
- only perform tasks appropriate to their training; responsibilities must not be delegated to staff without prior training and assessment.

Training options include:

- in-house training by a competent, experienced staff member, provided it is structured, documented, and aligned with current standards and guidelines. This is particularly useful for new staff induction or refresher training.
- external courses from Australian education providers; the Sterilizing Research Advisory Council of Australia provides a list of sterilising courses available in all states and territories.

Competency assessment

Why it matters

Logging training and competency assessments is essential for:

- ensuring staff are qualified to perform reprocessing tasks
- supporting continuous improvement and accountability
- demonstrating compliance during accreditation.

Minimum documentation needs to include:

- date and type of training
- trainer name and credentials
- staff member's name and role
- assessment method and outcome
- signature or verification by IPC coordinator or manager
- follow-up actions, such as refresher training, corrective action.

Practices could use a structured logbook or digital system to record training. Ensure records are easily accessible and retained according to your jurisdiction's requirements.

Competency assessment can be performed onsite and needs to cover all critical tasks in reprocessing, including:

- correct application of standard precautions, including hand hygiene and personal protective equipment
- cleaning of equipment and the reprocessing area, correctly following the practice's protocols (including cleaning products, cleaning equipment and cleaning methods)

- adherence to workflow protocols in the reprocessing area to avoid cross-contamination
- correct inspection and packaging of reusable medical devices and equipment
- correct loading of the steriliser
- choosing the correct sterilisation cycle
- monitoring and recording the sterilisation cycle
- unloading the steriliser
- parameters for releasing reusable medical devices and equipment for reuse
- correct storage of equipment and reusable medical devices
- tracking of sterilised items used in procedures
- rotation of sterile stock
- detecting abnormalities in the process, recording them, and taking appropriate corrective action
- steriliser cleaning and maintenance requirements (daily, weekly, monthly, quarterly and annual maintenance, annual calibration and servicing, validation)
- cleaning and maintenance requirements for all other reprocessing equipment including ultrasonic cleaners, washer-disinfectors with or without ultrasonic capacity, and biological indicator readers
- following the practice's procedures for steriliser operation and maintenance.

Resource requirements

The practice needs to provide any required resources to:

- implement all practice reprocessing policies and procedures
- implement quality assurance
- ensure that staffing levels are sufficient to maintain the continuous, safe and efficient operation of the reprocessing area (consider staffing levels when planning any significant changes to reprocessing activities)
- establish and maintain the area needed to achieve conformity with requirements for reprocessing activities (See Managing the area for reprocessing for reusable medical devices)
- procure reprocessing equipment
- provide supporting services
- endorse training and ongoing education
- ensure legal and insurance coverage is in place to manage risks associated with reprocessing activities, including potential mishaps or adverse events.

Consider the quantity and capacity of equipment needed for safe and effective reprocessing of reusable medical devices. Plan to have backup equipment available for use during maintenance, repairs, and unexpected interruptions to business as usual. Consider future growth to handle increased demand over time.

Life cycle of reprocessing equipment, reusable medical devices and accessories

The life cycle of reusable medical devices and their accessories spans from the determination of patient requirements, through design and development, purchasing, production, and calibration of monitoring and measuring devices. For devices already in use, the reprocessing stages (cleaning, packaging and sterilising) need to be risk assessed, validated, documented, and allocated to a relevant

product family.

Purchasing

Procedures for purchasing the selected product are outlined in Table 10.4.

Table 10.4 Procedures for purchasing reusable medical devices

Procedure requirement	**Description**
Risk-based selection criteria	Product selection and evaluation need to address workplace health and safety requirements.
Compatibility assessment with infection prevention and control coordinator's input	Involve the infection prevention and control coordinator when planning to purchase, trial, or loan any reusable medical device. Ensure the device is compatible with existing reprocessing systems and identify any associated training requirements.
Equipment conformity	Reprocessing equipment needs to be appropriate and compatible with the medical device being reprocessed.
TGA registration	Reusable medical devices and accessories (eg cleaning agents, utensils, packaging) need to be listed on the Australian Register of Therapeutic Goods (ARTG).
Instructions for use	Operational instructions need to be provided for both the reusable device and any accessories. If instructions are unclear or inadequate, the device should not be purchased, and the issue should be reported to the TGA.
Validated reprocessing instructions	Documentation needs to include validated reprocessing instructions that comply with ISO 17664-1 or ISO 17664-2, including for trial or loan devices. Manufacturers are required to provide reprocessing instructions that conform to these standards.

Delivery acceptance criteria	Establish criteria for accepting deliveries (eg inspect packaging for damage or tampering, check expiry dates, verify against purchase specs). Do not accept incoming reprocessing equipment or accessories that are soiled or damaged unless a competent person assesses them for suitability for their intended purpose. Do not accept expired goods. Return any goods that are unsuitable for their intended purpose. Exercise caution if purchasing reusable medical devices, reprocessing equipment and accessories online or second hand.

Identification and traceability of product

For semi-critical devices, practices need to maintain a tracking system that, at a minimum, enables identification of the individual cycle of the high-level disinfection system in which each device was processed.

Practices need to adopt a risk-based approach to traceability, ensuring that all semi-critical reusable medical devices, including complex devices stored after processing for later use, can be reliably tracked from disinfection to release for use.

Do not use colour-coded identification systems on reusable medical devices, such as coloured instrument tape, silicone rings, or adhesive labels. These can:

- detach during procedures, compromising patient safety
- trap microorganisms beneath the adhesive, interfering with effective reprocessing.

Where unique identification of a reusable medical device is required, high-quality etching methods, such as chemical or laser etching, are recommended. Engraving is not advised, as it can weaken the device and cause pitting.

In multi-practitioner or shared-use settings, devices such as forceps or scissors may be used by specific clinicians or require identification for:

- maintenance tracking
- practitioner preference
- procedural consistency
- reprocessing services provided to other practices.

In these cases, the practice needs to use identification methods that:

- are compatible with reprocessing requirements
- maintain traceability throughout the reprocessing cycle
- do not compromise patient safety.

Traceability records

To ensure effective traceability of reusable medical devices, practices need to record the following information for each sterilisation cycle:

- Date of sterilisation and sterilisation process cycle number
- Steriliser identification, for example unit number or code, if multiple sterilisers are in use
- Device identification – the name of the device or set of devices, and the number of items within the load
- Person accountable for loading the device into the steriliser
- Results of performance tests conducted prior to use, for example leak rate or functional checks
- Annual validation or as specified in the device instructions for use
- Sterilising agent details (where applicable), including batch number and expiry date
- Documented evidence that sterilisation parameters were met, for example a process record or printout (where applicable)
- Person accountable for releasing the device or sterilisation load.

Record-keeping:

Practices are encouraged to maintain electronic records for traceability wherever possible. Electronic systems offer greater reliability, accessibility, and auditability.

- Electronic records need to include processes to verify that all required conditions were met at the end of each cycle.
- Paper records, if used, must be legible, complete, and securely stored.
- Where paper records are used, practices are encouraged to scan or digitise them to support long-term retention and improve accessibility during audits or accreditation.
- Records must be retained for the period specified by the relevant State or Territory Health Department.

Patient-level traceability:

- Practices need to have a process to link each sterile item to the patient it was used on. This supports patient safety and allows for recall or investigation if reprocessing errors or infection risks are identified. Refer to **criterion CG9.F** in the *Standards for general practices* (6th edition).
- While non-critical devices do not require patient-level traceability, practices may choose to track their use if this supports consistency, quality monitoring, or workflow efficiency.

Labelling requirements:

- All packages need to be labelled with the load number and date.
- Labels do not need to be physically attached if the same information is reliably recorded in the patient's electronic record or traceability system.
- Labels also allow tracking of the reprocessing method used for each device.

Action if information is missing:

- If traceability information is incomplete or incorrect, the reusable device needs to be reprocessed before use.

Control of monitoring and measuring equipment

Monitoring and measuring equipment needs to be:

- identified with its calibration status
- adjusted/re-adjusted as necessary
- protected from adjustments that would invalidate the measurement result
- protected from damage during handling, maintenance and storage.

If any equipment does not meet requirements, corrective action needs to be taken for both the faulty equipment and any affected products. A record of these actions needs to be kept.

Documentation

The annual calibration of all monitoring and measuring equipment needs to be performed by a competent person using measuring equipment that is traceable to international or national measurement standards.

A report is to be provided to the practice and needs to:

- be obtained from the competent person implementing calibration
- include calibration tests performed for each piece of monitoring and measuring equipment
- include the certification number of the calibration device used
- be kept and be readily accessible.

Measurement, analysis and improvement

Identifying and managing nonconforming reusable medical devices

Reusable medical devices that do not meet required standards after cleaning, disinfection, sterilisation, packaging, handling, or storage need to be classified as nonconforming. Practices need to investigate each instance in accordance with their documented risk assessment and quality assurance procedures.

Examples of nonconforming devices include:

- devices that fail acceptance criteria after cleaning, disinfection, or sterilisation
- incorrectly wrapped or inadequately sealed items
- devices with damaged or opened sterile barrier systems
- wet packs or devices exposed to moisture post-processing
- items dropped or placed on contaminated surfaces after reprocessing
- devices with missing or defective batch control labels
- expired or non-functional devices
- devices with unclear or incomplete traceability.

Common causes of nonconformity may include:

- inadequate cleaning of reprocessing or storage areas
- exposure to moisture, incorrect temperature, sunlight, or pests
- use of inappropriate packaging materials or sealing methods
- mishandling during transport or storage.

Corrective actions need to include:

- identifying the nature and potential impact of the nonconformity (including staff concerns or complaints)
- implementing an action plan to address the issue, such as quarantining or recalling the device
- documenting all actions taken
- evaluating the effectiveness of corrective actions
- applying additional measures if needed to prevent recurrence.

⚠️ All nonconforming devices need to be quarantined and reprocessed before use. Practices must maintain records of nonconformities and corrective actions as part of their continuous improvement and accreditation processes.

Recall procedure

The practice needs to recall a reusable medical device in a timely manner if there is evidence of failure during the cleaning, disinfection, packaging or sterilisation processes, or during transport and storage of a reprocessed device. ❗

Recall procedures need to:

- identify examples of situations where recall of a distributed reusable medical device is warranted
- emphasise that recall activities need to be performed in a timely manner
- identify the team member/s accountable for coordinating recall activities
- identify the team member/s to be notified in the event of recall within or outside of the facility
- identify the team member/s accountable for reporting on recall activities
- identify the critical information to be included in a recall notice, such as reusable medical device to be recalled, the reason for recall and the action to be taken by team members receiving the recall notice
- reconcile the quantity of reusable medical devices with the device distribution records.

The recall report needs to be completed in accordance with the practice policies. At a minimum it needs to include:

- identification of why a recall was necessary
- identification of the recalled reusable medical device and reconciliation of quantities of the recalled device with the device distribution records
- where applicable, identification of patients impacted by the recall activity and follow up action taken
- identification of the causes for the recall
- identification of corrective action taken in relation to the recall
- identification of the consequences of the recall, for example the cost and time of reprocessing a recalled reusable medical device, cost of replacing equipment, impact on surgical procedures and where applicable, the need for staff retraining
- recommendations to prevent a recurrence of the circumstances that led to the recall.

Preventive action

The potential causes of nonconformities – including those that result in recall – can be identified and addressed to prevent recurrence. At a minimum, preventive action needs to include:

- identification of potential causes of nonconformities or recall incidents
- development of an action plan to prevent recurrence
- documentation of actions taken to address identified risks
- evaluation of the effectiveness of preventive actions
- where applicable, implementation of additional measures to further reduce the risk of recurrence.

Risk based approach

Overview - Risk-based approach

A risk-based approach is a systematic method that addresses point-of-use processing, thorough cleaning, disinfection, sterilisation, storage, and transport of reusable medical devices.

This section is designed to provide guidance on how to apply a risk-based approach to the reprocessing of reusable medical devices. It describes a systematic method for managing risks to patients, the practice team, equipment, and the environment. By assigning a level of risk, practices can enact effective control measures.

A practice that reprocesses reusable medical devices is required to develop its own risk assessment process. This then becomes part of the practice's overall infection prevention. To do so, the practice needs to use the process outlined in this section or another valid model that meets the current Australian Standard, *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities*.

A risk management system is a national requirement of the Australian Commission on Safety and Quality in Health Care (ACSQHC) for reprocessing reusable medical devices. It is also required as part of general practice accreditation against the *Standards for general practices* (6th edition) (See CG9 – Infection prevention and control, including reprocessing).

The risk management process

To apply a risk-based approach effectively, practices need to adopt a structured risk management process that supports the safe and consistent reprocessing of reusable medical devices. The steps outlined below (summarised in Table 10.5) provide a practical framework for identifying, evaluating, controlling and monitoring risks across the entire reprocessing cycle. This process can be adapted to suit the level of complexity and context of each practice.

Table 10.5 Summary of steps in the risk management process

Step	Actions
1. Appoint a reprocessing team	• Appoint the reprocessing team, including the practice's IPC coordinator. • The team can identify hazards and review risk management.
2. Develop a process flow	• Outline in a clear process the steps to analyse any device for risk.

3. Risk analysis	• Identify risks by looking for potential hazards.
	  ○ *What is the intended use and reasonably forseeable misuse?*
	  ○ *What are the characteristics related to safety?*
	  ○ *What are the hazards and hazardous situations that could arise?*
	  ○ *What is the risk estimation?*

4. Risk evaluation	• Assess the risks to decide if they are acceptable.
	  ○ *Categories of risk*
	  ○ *Likelihood and consequence of risk (risk matrix)*

5. Risk control	• Reduce risks by making improvements, such as redesigning, training, or better instructions.
6. Evaluation of overall residual risk	• Check remaining risks to understand their potential impact.
7. Risk management review	• Monitor and review risks regularly to ensure safety measures are effective.
8. Finalising and implementing the risk analysis	• Information collection • Information review • Actions

Source: Adapted from Standards Australia *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities*

Appoint a reprocessing team

The first step for the practice is to appoint a reprocessing team to be responsible for risk management and hazard analysis. This team will include the practice's IPC coordinator. Other members could include:

- practice management
- members of the practice team involved with reprocessing
- members of the broader clinical team
- external experts for reference and guidance.

A practice manager can contribute valuable risk analysis skills from a management perspective. Other members of the practice team may bring specific expertise that strengthen the reprocessing team's effectiveness.

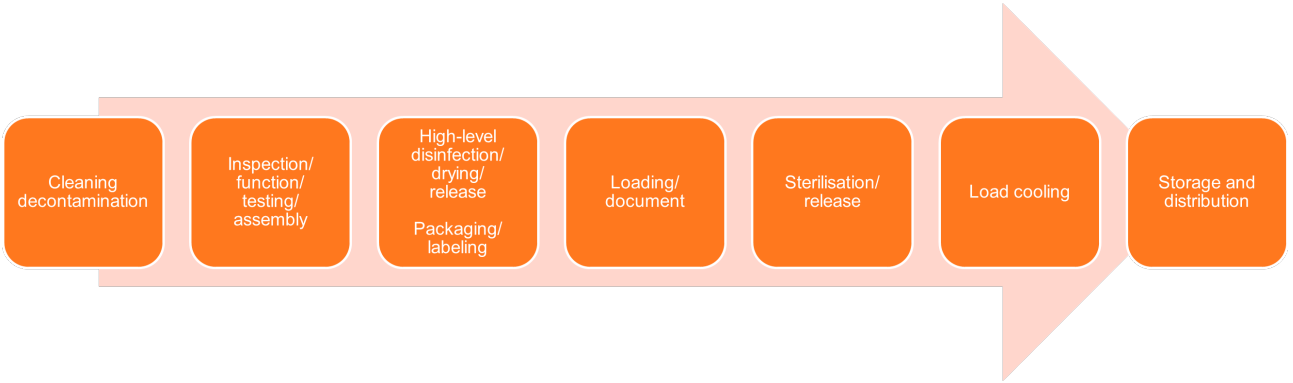
Even a small team of two people is better than relying on just one person, as having a single person responsible can be a risk in itself. The team should be a manageable size for the practice: large enough

to bring in different skills but not so big that it becomes overwhelming.

Develop a process flow

The sequence of steps or actions involved in reprocessing a reusable medical device need to be outlined in a clear process. This begins when a reusable medical device leaves its point of use on a patient. An example is shown in Figure 10.1.

Figure 10.1 Example of a “process flow” for a reusable medical device



Source: Adapted from Standards Australia *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities*

Risk analysis

The basic requirement for a risk-based approach is the identification of threats or hazards that occur throughout the defined process.

Threats or hazards are identified in four categories:

1. Physical (P)
2. Chemical (C)
3. Biological (B)
4. Quality (Q) (environmental and personnel).

These categories help determine the types of risks associated with each step of the reprocessing cycle and inform the appropriate control measures required.

Examples of threats or hazards corresponding to the four categories are outlined in Table 10.6.

Table 10.6 Examples of categories of hazards

Category of hazard	**Examples**

Physical (P)	• Debris in/on reusable medical device • Instruments requiring extended sterilisation cycles (if not correctly processed, due to their physical properties) • Improper loading orientation or overloading of the steriliser (ie outside validated loading criteria) • Compromised sterile barrier systems (eg torn wrap, punctured pouches) • Debris in/on lumens • Complexity of device being reprocessed (eg hinges, lumens, multiple components)
Chemical (C)	• Improperly rinsed instruments (chemical residue remains) • Incorrect chemical dosing at cleaning station • Hand moisturiser on hands (may transfer to devices and affect cleaning)
Biological (B)	• Staff illness (risk of contamination) • Residual hand cream not removed during handwashing (can trap biological material or prevent proper hand hygiene) • Biofilm development on/in reusable medical devices • Skin debris on/in reusable medical device
Quality (Q) (environmental and personnel)	• Improper point-of-use care (eg not wiping off gross soil immediately) • Quarantine of devices post-processing pending monitoring results (delays affecting flow or risk of accidental release) • Instructions for use unavailable (inability to follow validated procedures)

Consider the construction and use of the devices as well as the appropriate Spaulding Classification Scheme classification for the device – non-critical, semi-critical or critical.

Some examples of general practice devices are forceps, scissors, suture packs, scalpel handles, gauze swabs, and vaginal specula.

Table 10.7 Examples of threats or hazards in relation to example process flow in Figure 10.1

Step	Pre-process	Cleaning	Inspection/ function testing	Packaging	Loading	Sterili

Threat or hazard	Incorrectly classified devices (Spaulding's classification)	Instructions for use not followed	Equipment damaged	Incorrect pack size or wrap size for device	Incorrect loading orientation/ weight (outside of validation criteria)	Poor s quality
		Q	P	P Q	P	P
	Staff training incomplete	Chemical dosing incorrect	Debris on instrumentation	Incompatible material for sterilisation process	Staff hygiene	Incorr steriliz cycle
	Q	C	P Q	P	Q B	Q
	Staff hygiene	Delayed reprocessing	Mechanical malfunction	Staff hygiene		Instru requiri extend steriliz cycles
	Q B			Q B		P
		Undetected debris in lumens	Staff hygiene			Staff hygien
		P	Q B			Q
		Staff hygiene				
		Q B				

NOTE: This table includes examples of only some of the threats or hazards that can occur at each step Figure 2. The identification of these threats or hazards should be completed with the reprocessing tea

Source: Adapted from Standards Australia *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities*

Risk evaluation

A risk matrix is used to conduct a risk evaluation on every identified threat or hazard.

This risk matrix determines the likelihood and consequence of an identified threat or hazard, assigning each a risk category (low, medium, high or extreme).

Table 10.8 Sample risk matrix

Likelihood	**Consequences**				
	Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
Almost certain	**Medium**				
Likely	**Medium**	**Medium**			
Possible	**Low**	**Medium**	**Medium**		
Unlikely	**Low**	**Low**	**Medium**	**Medium**	
Rare	**Low**	**Low**	**Low**	**Medium**	**Medium**
Low risk	**Manage by routine procedures.**				
Medium risk	**Manage by specific monitoring or audit procedures.**				
High risk					
Extreme risk					

Source: Adapted from NHMRC (2019)

From the threats and hazards that are identified at the practice, each threat or hazard is inserted into the risk matrix and the rating is recorded. An example of this is shown in Table 10.9.

Table 10.9 Examples of cleaning step hazard analysis

Step	Hazard or threat (P, C, B, Q)		Risk assessment		Risk rating	Control measure
			Likelihood	Consequence (Impact to patient)		
Cleaning	**B**	**P**	Possible	Moderate (infection risk to patient)	Medium	Use validated cleaning protocols Visual inspection under adequate lighting Staff competency training
	Residual blood on hinged instruments					
Cleaning	**Q**	**B**	Possible	Moderate	Medium	Implement drying step using lint-free cloths or automated drying cycle Include in standard operating procedure Staff training and competency checks.
	Inadequate drying after cleaning					

When the likelihood and consequence have been established, the control measure can be determined. The control measures could include:

Standard operating procedures that are:

- detailed, including complete scope, materials and process
- training documents
- published and accessible for all staff
- based on published standards and recommended practices
- routinely updated (new equipment, devices, processes, etc)

Staff training and competency measures include:

- new training opportunities for the practice team
- new products and processes
- updates and continuing education.

Instructions for use for the device and equipment:

- are important considerations with new purchases
- contain information on whether devices or equipment may be reprocessed with resources already available in the practice
- need to be complete and accessible
- provide proof of current version.

Risk control

Corrective actions and precautions can then be determined and records kept when the risk rating has been calculated (See Table 10.10)

Table 10.10 Risk estimation table: ranking example

Risk rating	**Corrective actions and precautions**
	Critical control point (CCP)
Medium risk	Obtain documentation and monitor (CP)
Low risk	No action needed

Control measure documentation

After a risk rating has been assigned to the hazard or threat, document the control measure required to control hazard or threat.

The documentation for this process could include:

a. Critical limits, *what the acceptance criteria that need to be monitored?*
b. Monitoring:
    i. *What is being monitored?*
    ii. *Who is monitoring?*
    iii. *When is the critical limit being monitored?*
    iv. *How is the critical limit being monitored?*

c. Corrective action, *what is the consequence if the critical limit is not met?* d. Records, *where are the records being kept?*

Table 10.11 provides an example of identification of hazard and assigning control measures.

Table 10.11 Risk and hazard evaluation and control measure documentation

Step	**Hazard or threat (P, C, B, Q)**	**Control measure**	**Risk rating**	**Critical limit**	**Monitoring procedures**	**Corrective action**

Sterilisation	B Q Instruments are released for use without evidence of complete process	Before releasing instruments for use, ensure parameters have been checked for whole process. Sign off on pre-cleaning, physical sterilising have been successful. Check against validation.	High	Steriliser documentation indicates that the cycle has been completed. Required to check that the load is successful prior to release. Check the printout or data logger to verify that the correct heat, time and pressure parameters were attainted for the cycle	Staff to check data after every cycle	Train the sta Check for fa in the unit, fo instance: • it mig have r out of water • it mig have switch off • a user wasn't traine prope • steps chang betwe perso Identify the cause of wh cycle is incomplete.
Removal of device	P Damaged device	Ensure the practice policy includes the need to check for damaged instruments	High		Staff to inspect instrument	Provide staf training, rem damaged instrument, repair or rep instrument

Download template for use: [Template – Reprocessing risk and hazard evaluation and control measures]

Evaluation of overall residual risk

Once control measures have been implemented for each identified hazard or threat, evaluate the residual risk – that is, the risk that remains after controls are applied.

Residual risk evaluation helps determine whether the remaining level of risk is acceptable, or if additional measures are required. This involves reviewing:

- whether the control measures sufficiently reduce the likelihood and/or consequence of the hazard
- whether any hazards remain that could result in harm, even if controls are in place
- whether the risk aligns with the practice's risk acceptance criteria, for example only tolerating "low" or "medium" risks.

The reprocessing team should document any residual risks and clearly indicate:

- the decision on whether each residual risk is acceptable
- justification for accepting the risk
- any further actions needed, for example enhanced monitoring, additional staff training, or escalation to governance processes.

Practices could choose to maintain a residual risk register to track and revisit these decisions as part of ongoing risk management.

Risk management review

Regular review ensures that the identified hazards, their associated risks, and the control measures remain relevant, effective and aligned with current practice.

The reprocessing team should conduct a risk management review:

- at least annually
- whenever changes occur to the process flow, devices, equipment, staffing, or facility layout
- in response to incidents, audit findings, or feedback from staff or patients

During the review, the team should:

- confirm that all hazards are still accurately identified
- reassess the likelihood and consequence of hazards in the current environment
- evaluate the effectiveness of control measures and whether they are still being applied
- update standard operating procedures, training documents, and monitoring tools as needed.

A documented risk management review helps demonstrate active management of reprocessing risks.

Finalising and implementing the risk analysis

Turning analysis into action means ensuring that risk controls are applied consistently in practice and embedded into day-to-day operations.

The implementation phase includes:

- Information collection and documentation

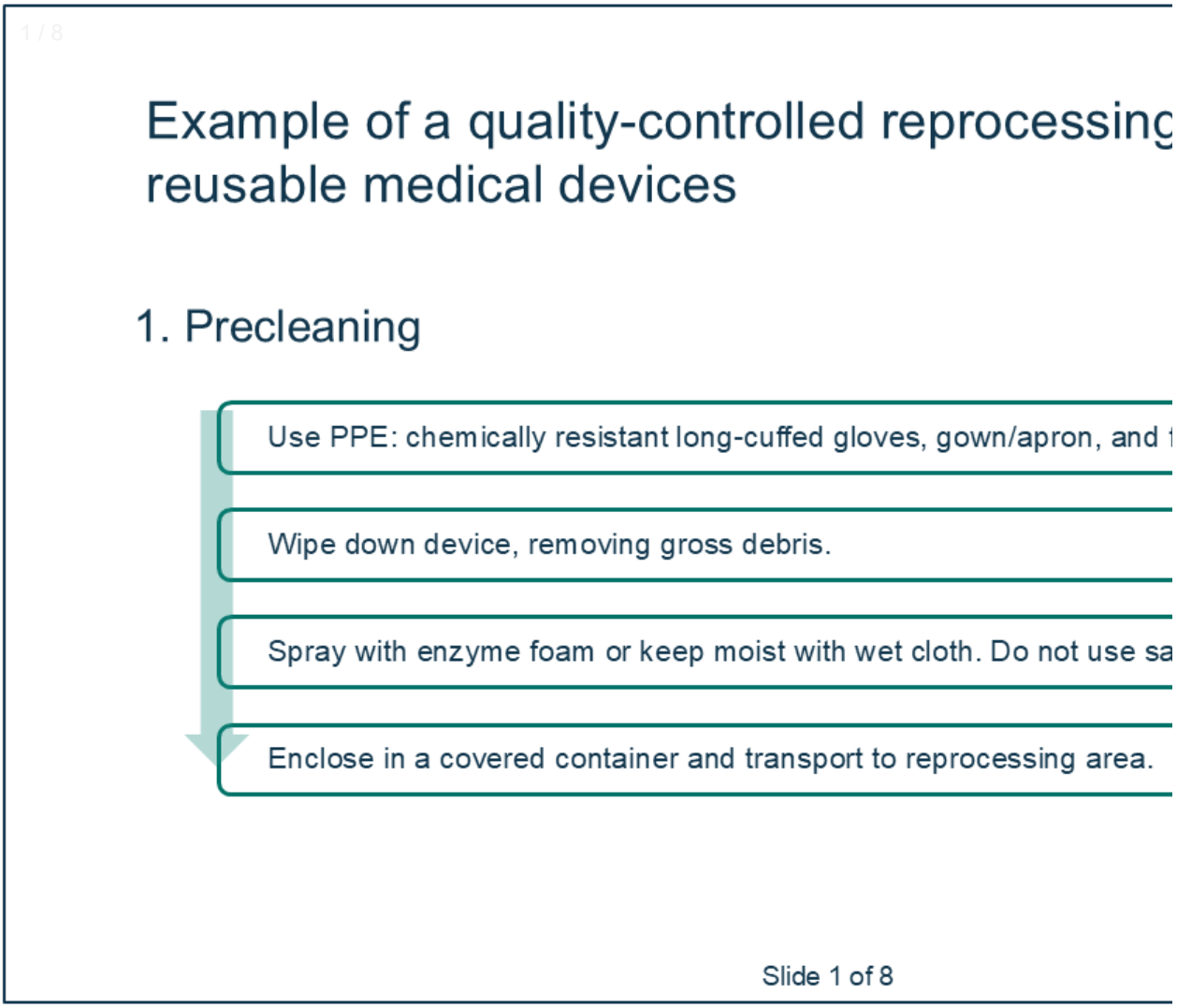
    - Compile the full risk assessment, including hazards, risk ratings, control measures, and residual risks
    - Ensure all documents are version-controlled and accessible to relevant staff
- Information review
    - Check that standard operating procedures reflect the risk analysis and incorporate control measures
    - Ensure staff have access to validated instructions for use and equipment manuals
    - Confirm that all required training has been completed and documented
- Action
    - Integrate risk controls into practice workflows and responsibilities
    - Assign responsibility for ongoing monitoring and compliance
    - Schedule future reviews and set reminders to revisit key documents

Implementing the risk analysis is critical to ensuring that the assessment translates into real improvements in quality and safety.

Example of a quality-controlled reprocessing workflow for reusable medical devices

Figure 10.2 and Table 10.12 each provide the same example of a quality-controlled reprocessing workflow for reusable medical devices.

Figure 10.2 Example of a quality-controlled reprocessing workflow for reusable medical devices



‹ Previous Next ›

Table 10.12 Example of a quality-controlled reprocessing workflow for reusable medical devices

Key:	**D**	Quality system task performed and **documented**	**ND**	Quality system related task performed. **Not documented**

Precleaning	Use PPE: chemically resistant long-cuffed gloves, gown/apron, and full-face protection.
	Wipe down device, removing gross debris.
	Spray with enzyme foam or keep moist with wet cloth. Do not use saline solution.
	Enclose in a covered container and transport to reprocessing area.

Cleaning and documentation	Sort items for automated cleaning.		
	Dispose of waste including single use items.		
	Manual cleaning (Pre-treatment only) *Only used to remove visible soil before placing in washer-disinfector*	Manually clean devices with detergents that meet the current relevant standard.	**ND**
		Use appropriate cleaning agents and tools (eg brushes that meet relevant standards).	
		Rinse thoroughly until all debris is removed.	
		Dry using lint-free cloth.	
	Automated cleaning	Open all devices and containers and load automated washer-disinfection equipment racks.	
		Monitor automated washer-disinfection with verification test weekly (preferably daily) and record result.	**D**
		Monitor physical parameters of automated washer-disinfection for each cycle. Initial results on printout and retain.	**D**
	Ultrasonic cleaning (optional step)	Place instruments recommended for ultrasonic bath for time specified in instructions for use. Follow the specified cycle time and solution requirements.	
		Rinse and dry items with lint-free cloth.	
	Transport items to "clean side" for preparation and packaging.		
Preparation and packaging	Sort instruments into appropriate sets.		
	Inspect all devices for cleanliness and functionality. Test as indicated by device design and instructions for use.		

	Segregate and tag all devices that need repair.		**D**
	Assemble sets referring to list of how packs are put together / pack guideline and assembly instructions.		**ND**
	Use packaging with chemical indicators or tape.		**ND**
	Place process indicator on outside of each package. Label with date, load number and operator.		**D**
	Select appropriate sized peel pouch for single items. Pouches need to have indicators.		
Sterilisation	Place packaged items appropriately on steriliser loading rack.		
	Identify and record date, load number and operator.		**D**
	Document descriptions of all items in load in electronic or paper system.		**D**
	Routinely test steriliser efficacy with biological indicator (B1) in process challenge device, at least weekly (preferably daily) and for all implant loads. Quarantine implant loads until results of biological indicator are known.		**D**
	Warm up steriliser and load and start cycle. (Generally part of cycle)		
	Cool items for at least 30 minutes after cycle before handling.		
Recordkeeping and load release	At conclusion of cycle: • review printout or data logged information to ensure the successful completion of process • inspect packaging to ensure is intact and there has been colour change in chemical indicator • document in recordkeeping system and initial.		**D**
	Determine final load status. Confirm that all monitoring parameters meet Acceptable	**Successful results**: • Release load	**D**

	Quality System results.		
		Failed or suspect monitoring result: • Quarantine load for reprocessing • Begin investigation process according to procedure to resolve.	**D**
Store / inventory / issue	Store sterilised items in sterile storage area with defined and documented environmental conditions.		**D**
	Place items in sterility maintenance (dust) covers as appropriate.		**ND**
	If not otherwise specified, the shelf life of packaged sterile item is 12 months. Before release, inspect item packaging and do not issue if labelling or sterility integrity is suspected to be compromised.		**ND**
	Rotate stock according to first in, first out process.		
	Transport of all clean or sterile items should be in a covered container when in uncontrolled environments. To maintain integrity of sterilisation, items need to be returned in a clean container.		
Aseptic presentation and use	Before packaged item is opened, inspect the integrity of the packaging and the chemical indicator change.		**ND**
	Open package aseptically.		
	Ready for use.		
Quality controls	*Not routinely done with each load*		
	Leak test for vacuum-assisted steriliser – once per week, determined by manufacturer (instructions for use).		
	If required, test dynamic air removal sterilisers daily prior to placing in service with Bowie-Dick type test. Document results and retain test sheet. If failed result occurs, do not use steriliser and follow policy and procedures.		

Agents for reprocessing

Cleaning agents used for reprocessing activities

The cleaning agents used for reprocessing activities need to:

- be designed for use on medical devices
- be registered on the Australian Register of Therapeutic Goods
- be compatible with the devices being cleaned and the cleaning method the practice is using.
- be diluted and used according to the product's instructions
- work with the available water quality
- be non-toxic at the recommended dilution
- be non-abrasive
- create little to no foam
- rinse off completely without leaving residue
- preferably:
    - be in liquid form
    - be biodegradable.

Any cleaning agent that claims to possess antimicrobial properties must be supported by verifiable evidence substantiating such claims.

Avoid:

- using a cleaning agent if the device's instructions advise against it. In such cases, it is likely the cleaning process has already been tested and proven effective without a cleaning agent
- abrasive cleaners such as steel wool, domestic cleaning powders and pastes, as these may damage the surfaces of reusable medical devices or leave a residue
- strongly alkaline detergents for manual cleaning. Although these are more effective, they are caustic and are only safe for use in washer-disinfectors
- chlorine-based products such as bleach, as they can corrode and rust reusable medical devices and sterilisers
- normal household detergents, as they are generally high foaming and often leave a film that is hard to rinse away and could harbour microorganisms. High-foaming detergents increase risk to staff injury because they make items more difficult to see when washing and can generate aerosols.

Enzymatic detergents are rarely used in general practice. These are usually used in automated processes and reserved for lumened instruments with internal surfaces that are difficult to access, such as endoscopes.

Environmental impact

Assess any potential impact on the environment from chemicals used in cleaning, disinfecting, or sterilising (including substances that may be released during or after use). Check safety data sheets for information on toxicity, biodegradability, and disposal guidelines.

Implement and document control measures to manage environmental risks and use appropriate disposal methods.

Further consider the environmental impact of products used by:

- using the correct amount of product to avoid excess waste
- substituting for environmentally friendly alternatives where possible
- separating hazardous from non-hazardous chemicals
- contacting a local waste management service to understand disposal requirements and options available.

Register of agents

Any cleaning products, disinfectants, or chemical sterilisers used for cleaning reusable medical devices:

- are considered as medical device accessories under Therapeutic Goods Administration (TGA) regulations
- need to be included on the Australian Register of Therapeutic Goods.

Holding reusable medical devices in cleaning agents

If cleaning is delayed, pre-treated items can be held in a labelled container for a short, pre-specified time, covered with a TGA-registered instrument precleaning product that is suitable for metals and plastics.

For further detail, see Initial treatment at the point of use.

Items are not to be left soaking in detergent solution for later cleaning, as this can lead to bacterial growth at room temperature and increase the risk of contamination and splashes.

Disinfection agents and systems

When disinfecting reusable medical devices or other equipment, the practice needs to use a chemical disinfectant labelled as "instrument grade disinfectant."

When choosing a disinfectant only use:

- a disinfectant entered on the Australian Register of Therapeutic Goods and validated for use with the intended reusable medical device
- at least a high-level instrument grade disinfectant for disinfecting semi-critical devices
- at least an intermediate or low-level instrument grade disinfectant when disinfecting non-critical devices if disinfection is needed.

Do not use other types of disinfectants, such as hospital-grade disinfectants, for cleaning reusable medical devices.

Safety data sheets

Each cleaning, disinfecting, or sterilising agent needs to have a safety data sheet or similar safety information. The practice can get an up-to-date safety data sheet from the product's manufacturer or supplier. Review safety data sheets at least once a year. See Work health and safety issues for further

information.

Brushes

The practice can refer to its risk assessment when deciding what brushes to use, how to reprocess and store them, and when to replace them. Table 10.13 describes the selection, use, cleaning, storage, and replacement of brushes.

Table 10.13 Selection, use, cleaning, storage and replacement of brushes

Selecting a brush	• Consider the medical device to be cleaned (what areas of it need to be cleaned, such as the external and internal surfaces). • Refer to the instructions for use, looking specifically at the manufacturer's cleaning steps and brush recommendations. • Identify the equivalent brush to use in the process. • Ensure the brush is available. • Inspect the brush before use. If no direction is given in the instructions for use regarding the type of brush or method to use, use the practice risk assessment to determine the best method.
Using a brush	• Brush use occurs within the practice reprocessing area's 'dirty' zone, not in the 'clean' zone (See Managing the area for reprocessing for reusable medical devices). • Brush, rinse, dry, and inspect the device. • Keep the instrument submerged when brushing. • Do not brush outside the water unless directed to do so by the instructions for use. • Inspect the brush before use and after use and do not use if damage is identified (See Replacement and disposal below).
Cleaning and reprocessing	• Clean brushes of various sizes that have firm plastic bristles capable of withstanding cleaning agents, are to be kept in the cleaning area for use during the cleaning stage. • Reusable brushes need to be reprocessed after each use to reduce cross-contamination and biofilm formation. They can be manually cleaned and sterilised or mechanically cleaned and heat disinfected in a washer-disinfector daily, or after use. Ultrasonic cleaners are generally not suitable for plastics. • If reusable validated cleaning brushes for instrument cleaning are used, reprocess them in accordance with the manufacturers' information for users. • Thin disposable brushes (eg cytology brushes) are useful to clean items with lumens, holes or valves. These cannot be reprocessed and are not to be reused. • If an instrument is found to be dirty when inspected for reprocessing, return it to the 'dirty' zone to be recleaned.

Storage	• Store reusable brushes in a clean, dry, and well-ventilated area. • Ideally, brushes are kept upright or hung to allow proper air drying and to prevent contamination. • Avoid storing brushes in enclosed or damp containers, drawers or other environments, as this can encourage microbial growth. • Dedicated storage areas should be used to prevent cross-contamination with other instruments and cleaning materials. • Brushes should be clearly labelled and separated based on their intended use (eg instrument cleaning, surface cleaning) to ensure proper infection control procedures. • Do not store reusable brushes in the same container as other items of equipment.

Replacement and disposal	• Inspect the brush before each use. Brushes are considered consumable items that are subject to wear and tear.
	• If damage is identified, the brush cannot be reused. Common damage to brushes includes:
	  ◦ missing, loose, damaged, or fallen bristles
	  ◦ cracks or damage to the brush handle or head
	  ◦ other issues specified in the instructions for use.
	• If it cannot be properly cleaned, the brush cannot be reused (for instance, if debris remains despite thorough cleaning and disinfection)
	• Replace a brush in line with the manufacturers' lifespan recommendations.

Cloth/paper for drying

The accumulation of residual lint on instrument surfaces needs to be avoided, as it can cause foreign body reactions in patients.

Where manual drying is required, use:

- reusable lint-free cloths, laundered in accordance with the current healthcare linen standard (see Cleaning, laundry and waste management) and protected from dust during drying, or
- disposable low-lint cloths.

Do not use disposable kitchen wipes, paper hand towels or tea towels as they leave significant lint residue. This includes placing lint-free cloths or instruments on wipes or towels that present a risk of fibre contamination.

The practice's risk assessment should guide the choice of cloths and the designated drying area.

Disposable materials used in the sterilisation process

Sterile barrier systems (packaging)

Purpose and requirements

Sterile barrier systems are designed to:

- protect contents from contamination during storage
- allow aseptic removal of the contents at the point of use.

Sterile barrier systems need to:

- allow air removal, steam penetration, and drying of contents
- ensure devices are effectively sterilised and remain sterile
- be standardised for quality.

Types of sterile barrier systems

- Paper bags requiring tape for sealing
- Self-sealing pouches made of paper backed with clear plastic (laminate)
- Rolls of paper with laminate, cut to size and sealed at both ends using tape or heat sealing
- Sheets of low-lint single-use nonwoven material (spunbond-meltblown-spunbond [SMS] polypropylene and/or cellulose)
- Rigid reusable sterilisation containers and cassettes.

Do not use reusable linen wraps, as they do not meet contemporary infection prevention and control standards.

Choosing the correct barrier system

- Size and contents: Laminate pouches are suitable for small-to-medium items; nonwoven fabrics or rigid containers are suitable for larger packs or instrument trays.
- Type of device/equipment: The material needs to be compatible with the instruments and sterilisation process.

Most practices use pre-made bags or pouches for convenience and suitability for small-to-medium items. Larger items, such as surgical instrument trays, require specialist wrapping techniques, which require training. The Sterilizing Research Advisory Council of Australia provides a list of sterilising courses available in all states and territories.

Chemical indicators

- All packs need to include an external Class 1 chemical indicator.
- Pouches and bags often incorporate the indicator in the material.
- For rolls or sheets, the wrapped package needs to be secured and sealed with adhesive tape containing a Class 1 indicator.

Sealing:

- Pouches and bags need to be correctly sealed to prevent contamination.
- Laminate rolls require a heat sealer (spare elements should be kept on hand) or adhesive tape.

Validation and Storage:

- Annual validation confirms the suitability of the barrier system.
- Packs of pouches or rolls of material need to be stored in clean cupboards or drawers, not on open benches or shelves, to prevent contamination.

Class 1 chemical indicators

All items placed in a sterile barrier system need to incorporate a Class 1 chemical indicator on the bag or pouch, or on the tape used to seal the item.

Class 1 chemical indicators are designed to demonstrate that the sterile barrier system has been exposed to the physical conditions of the sterilisation process, but do not guarantee sterility. They are designed to react to one or more of the critical variables, such as changing colour when the correct temperature is reached.

Water

Water quality is critical at all stages of reprocessing. Poor-quality water can:

- reduce cleaning effectiveness
- damage reusable medical devices.

The water used for reprocessing needs to meet the requirements of the current relevant standard.

Requirements for sterilisers

- Modern Class S or B sterilisers typically require demineralised water (distilled or deionised).
- Water can be supplied by:
    - purchasing 5–20 litre containers from a commercial supplier
    - producing on-site using a demineraliser.

Water supply and filtration

- Sterilisers draw water through a tube connected to the water supply.
- Small reverse osmosis filtration systems can be installed to supply water to sterilisers and washer-disinfectors, reducing the inefficiency and cost of bottled water.
- Filters need to be regularly maintained to ensure effective operation.

Water use in sterilisers

- Most modern sterilisers recycle water internally.
- Older sterilisers may require manual addition of water and topping up the reservoir.
- Water that is discharged from any steriliser is not suitable for reuse.

Environmental impact

Filtration systems reduce plastic waste, lower the carbon footprint associated with bottled water production and transportation, and are generally more sustainable in the long term. When bottled water is necessary, facilities could:

- minimise reliance on bottled water by investing in high-quality filtration systems
- adopt responsible disposal or recycling of plastic bottles to reduce environmental impact.

Managing the area for reprocessing for reusable medical

devices

Designated area

Practices need to:

- have a designated area for reprocessing reusable medical devices that is physically separated from treatment and administration areas
- establish a workflow pattern that prevents contamination of clean (pre-sterile and sterile) areas.

The zones within the reprocessing area include:

- Dirty zone: Area where contaminated reusable medical devices are received and pre-cleaned.
- Clean zone, made up of:
    - Pre-sterile zone: Area where reusable medical devices are cleaned, dried, and packaged, but not yet sterilised.
    - Sterile zone: Area where sterilised devices are stored, protected from contamination, and ready for use.

Ideally, the practice has a dedicated room for reprocessing. Shared spaces are acceptable provided physical methods or barriers are used to separate reprocessing activities. For example, locating patient care areas away from the sterilising area, or not processing equipment when patients are present. The methods used should be documented in the practice's risk register, along with identified mitigants.

The reprocessing area needs to be in a low-traffic part of the practice and is not to be used for linen or waste processing, or storage of supplies unrelated to reprocessing (other than personal protective equipment and consumables). Benches and floors need to be kept clear of unrelated items, such as cardboard boxes, paperwork, or supplies that could introduce dust or fibres and compromise device hygiene.

Workflow planning

The practice needs to establish a workflow pattern that systematically moves from designated 'dirty' to designated 'clean' (pre-sterile then sterile) zones within the dedicated processing area. This means that dirty reusable medical devices do not come into contact with clean or sterilised items.

Key considerations for workflow planning:

- Clearly mark or physically separate each zone.
- Ensure that all staff are trained to maintain the directional flow from dirty > pre-sterile > sterile.
- Avoid any crossover of instruments, packaging, or supplies between zones.

Designating reprocessing sinks

The equipment processing area should have two sinks: one designated 'dirty' (for washing used reusable medical devices) and the other designated 'clean' (for rinsing the washed reusable medical devices). ❗

Reprocessing sinks should be made of stainless steel, as this material is durable, resistant to chemicals, and easy to clean. Porcelain or other materials that may chip, crack, or scratch are not

recommended. They need to be of sufficient depth and size to allow a device to be completely immersed.

The reprocessing sinks cannot be used for:

- washing hands
- disposing of leftover beverages
- laundering
- washing dishes.

Reusable medical devices must only be cleaned in designated reprocessing sinks, never in a hand basin. Hand basins are for hand hygiene only and are not suitable for instrument cleaning.

Pre-cleaning of reusable medical devices is not to be performed using plastic tubs or other non-validated containers. All pre-cleaning must be performed in the designated compatible sinks or using equipment validated for use with the washer-disinfector. Plastic tubs or containers cannot be adequately reprocessed and may compromise device hygiene and sterility.

Disposing of wastewater

Practices are not expected to have a sink dedicated to wastewater disposal.

Wastewater generated during reprocessing activities (for example, detergent or rinse water) may be safely emptied via the dirty sink, provided no instruments or devices are present in the sink at the time.

The sinks used for reprocessing are not to be used for disposal of unrelated liquid waste, including:

- beverage or food waste
- pharmaceutical or medicinal fluids, such as:
    - expired or unused intravenous (IV) fluids
    - irrigation or infusion solutions (for example, saline, glycine, or glucose solutions)
    - disinfectant or chemical solutions not approved for drain disposal
    - vaccine residues or diluents
    - liquid medicines or compounded preparations
- body fluid waste from procedures (for example, wound irrigation fluids, urine, or other clinical waste requiring biohazard disposal)
- handwashing runoff from non-clinical or staff-use-only activities.

Work benches

The packaging items to be sterilised needs to be done in the ‘clean’ (pre-sterile) zone, away from the ‘dirty’ zone and drying zone, and with adequate space or a physical barrier to minimise contamination.

Equipment, activities and sub-zones within the designated ‘clean’ (pre-sterile) zone include:

- the holding area for reusable medical devices awaiting sterilisation (before the steriliser)
- reprocessing equipment
- the cooling area for packages that are unloaded from the steriliser.

Separation of pre-sterile and sterile items

Pre-sterile (clean) instruments and sterilised instruments need to be physically separated. The same

bench, shelf, or area cannot be used for both, to prevent cross-contamination. Sterile items need to be stored in a dedicated cooling or storage area within the sterile zone, clearly separated from any items awaiting sterilisation.

The bench top needs to be cleaned and dried between uses. Any containers in the area need regular wiping to remove dust. There should be no open shelves with materials that can accumulate dust.

Facility cleaning

Regular cleaning of the reprocessing area ensures a safe, hygienic environment and reduces the risk of contamination of reusable medical devices.

Cleaning frequency and procedure

- The reprocessing area needs to be cleaned according to the practice's documented cleaning schedule and procedures.
- After each reprocessing session, clean and dry:
    - all equipment
    - sinks and fixtures
    - immediate surrounding areas, including splashbacks and benches.
- The choice of cleaning method (detergent only vs. detergent followed by disinfectant) depends on:
    - local epidemiology
    - a local risk assessment. See Cleaning agents and methods for further considerations.

The practice needs to use separate, dedicated cleaning equipment for the dirty work area and clean work areas.

The use of benches within the reprocessing area for other purposes should be avoided. If this does occur, the benches need to be cleaned immediately after that activity in accordance with the practice's documented cleaning procedure.

Hand hygiene in the reprocessing area

Within the reprocessing area, hand hygiene needs to be performed:

- before putting gloves on
- when moving from 'dirty' to 'clean' areas
- after handling soiled equipment
- after removing gloves
- before opening the steriliser
- before handling or packaging clean items
- before handling sterilised packs.

Appropriate gloves need to be worn at all times when handling contaminated reusable medical devices. For example, latex-free, puncture resistant, chemical-resistant utility gloves (preferably longer cuffed).

Alcohol-based handrub should be readily available and accessible in all work zones within the reprocessing area.

Hand cream is not to be used when performing reprocessing, because it can contaminate instruments or compromise the integrity of packaging.

Design of reprocessing area

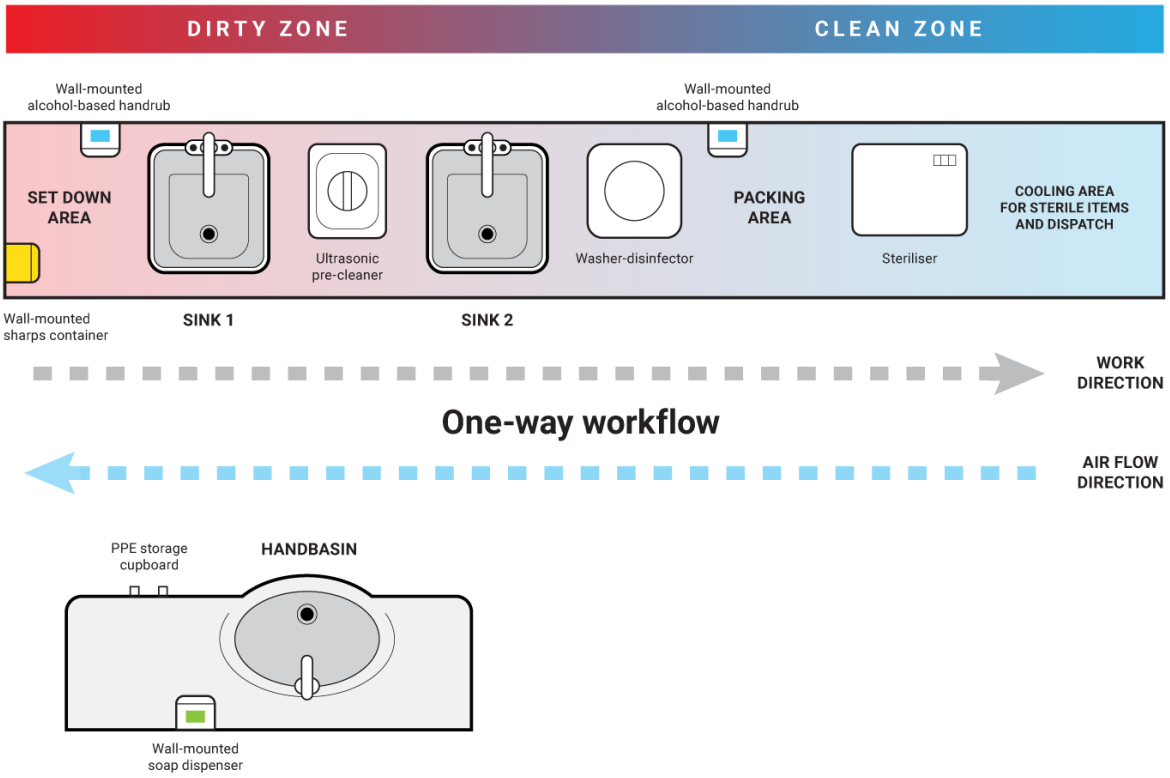
As described at Workflow planning, the reprocessing area needs to establish a workflow pattern systematically moving from designated ‘dirty’ to designated ‘clean’ zones within the dedicated area. A one-way workflow prevents dirty reusable medical devices encountering clean reusable medical devices.

Consider the following when setting up the area designated for reprocessing reusable medical devices:

- Surfaces (benches, sinks, splashbacks, walls) need to be smooth, with no rough or textured areas where soiling can accumulate (such as tiles with grouting or silicon sealant) and made of material that does not shed fibres or particles. Ideally there should be no crevices between the walls and floor, or around any fixtures, where dirt can collect. The floor needs to be washable non-slip material.
- A washer-disinfector is required.
- Dedicated sinks, one designated as ‘dirty’ and the other ‘clean’ for pre-treatment, manual cleaning, and rinsing of a reusable medical device need to be provided. Sinks need to be of sufficient depth and size to allow a device to be completely immersed. Cleaning sinks are not to be used for any other purpose, such as washing hands. Similarly, hand basins are not to be used for reprocessing reusable medical devices.
- Provide separate hand hygiene facilities in the reprocessing area, such as a dedicated handwashing sink or hands-free alcohol-based handrub dispenser. Handrub dispensers cannot be placed at sinks or directly over work areas and should be installed adjacent to benches where they will not splash.
- The area needs to be well lit to make it easy for staff to inspect devices for soiling.
- All supplies are to be stored in closed cupboards or drawers; no materials, supplies or equipment is to be left out or stored on benches or floors. Even clean boxes shed fibres that could compromise device asepsis/sterility.
- The area cannot be shared with linen or waste and should be a low-traffic area.
- Clean, dry gloves and aprons, masks and full-face shields should be easily accessible in the reprocessing area. They need to be stored in a closed dry cupboard, well away from possible splashing or contamination.

Sterilised reusable medical device packs need to be stored in enclosed, well-sealed areas to protect them from dust, moisture and other environmental contaminants that could compromise sterility.

Figure 10.3 Example reprocessing area setup demonstrating one-way workflow



The workflow is strictly in one direction: the staff member enters the zone with clean hands, dons required PPE and proceeds to work from the ‘dirty’ to ‘clean’ (less contaminated) zones (shown left to right above), washing hands with soap and water if they become visibly contaminated, and reusing alcohol-based handrub after each stage of the process while hands remain visibly clean.

The direction of airflow is from the ‘clean’ zone to the ‘dirty’ zone. The ultrasonic pre-cleaner, if the practice has one, is ideally placed between the two sinks, contingent on plumbing, power and safety considerations.

The diagram is intended as a sample. Alternatives are possible:

- The location of the ultrasonic pre-cleaner (either before Sink 1 or between Sinks 1 and 2) is decided based on a practice's pre-cleaning process.
- The washer-disinfector may be installed under the bench, on the bench, or as a tall unit. Its placement should not disrupt the unidirectional workflow and must allow safe, ergonomic loading and unloading.
- As the use of a washer-disinfector for pre-cleaning of reusable medical devices is required for precleaning, manual cleaning is not routinely required. In this context, a second sink is not mandatory if the practice can demonstrate, through a documented risk assessment, that all devices are compatible with the washer-disinfector, and that contingency procedures are in place if the washer-disinfector is temporarily out of service. The number and designation of sinks must be recorded in the practice’s risk register and reviewed regularly.

Process definition

Overview – Cleaning process

Every reusable medical device used in the practice needs to undergo a clearly defined cleaning process. The aim is to remove bioburden (such as blood, tissue, body fluids, dirt, and/or chemicals) from the surface of the instrument to a safe and acceptable level, ensuring it is ready for the next stage of reprocessing.

Each reusable device needs to be cleaned thoroughly after every patient use. The cleaning method needs to be compatible with the device and follow the manufacturer's instructions.

If the practice cannot meet the required cleaning method for a device, the device cannot be reused. In such cases, consider outsourcing your reprocessing or using a sterile, single-use alternatives.

The practice needs to employ its risk assessment when creating or reviewing its cleaning procedures.

All visible soil and contamination need to be removed before a device is disinfected or sterilised. If the device is not clean, disinfection and sterilisation will not work properly. Leftover material can block these processes or harbour harmful microorganisms. Poor cleaning can also lead to the device not working correctly or safely.

Cleaning cannot introduce more contamination to the device. After cleaning, the device should also be free from any residue left by the cleaning agents.

The practice may need different cleaning procedures for different instruments or types of devices. These procedures need to be clearly documented and followed.

Transportation

In a general practice, transportation refers to the way used reusable medical devices are safely moved from one area of the practice to another, for example from the treatment room to the cleaning area or sent offsite if the devices are to be reprocessed externally. This step is critical to avoid spreading infection and to protect both staff and patients.

The practice needs to have a clear process for how used instruments are collected and transported. This process should include:

- ensuring that the used devices are handled in a way that protects staff, the environment, and the devices themselves from harm or contamination
- training all relevant members of the practice team on how to safely collect and transport used instruments in line with the practice's policies and procedures.

Used devices need to be placed in designated containers for transport. These containers need to meet the following requirements:

- Be rigid, strong, and leak-proof to avoid spills or injuries.
- Be the right size to hold the devices without causing damage or risk to staff.
- Be sealable or lockable, if needed, to prevent tampering or accidental opening.
- Be clearly labelled to show whether they contain used (dirty) or clean instruments.
- Be easy to clean and disinfect and completely dried after cleaning.
- Be replaced or safely disposed of when they are no longer in good condition.

⚠️ The practice needs to have a system to clearly identify which containers and storage are used for dirty (contaminated) devices and which are for clean instruments. This is to prevent accidental mix-ups and to keep patients and staff safe. Any equipment used to move these containers (like trolleys) needs to also be cleaned according to the practice's cleaning procedures.

Initial treatment at point of use

Initial treatment of reusable medical devices needs to occur immediately after use at the point of use. This ensures that visible soiling is removed before it dries, which facilitates effective reprocessing.

- Initial treatment generally involves wiping with a damp or dry low-lint or lint-free disposable cloth (for example, non-woven gauze), or, if necessary, using a TGA-registered instrument pre-cleaning product ❗
- After initial treatment, devices need to be transported promptly to the reprocessing area in a cleanable, sealable, puncture- and leak-resistant container dedicated to this purpose.

Key timeframe guidance:

- The interval between use and reprocessing should be as short as possible, **ideally within 1 hour, and never longer than 4 hours**.
- If unavoidable delays occur, devices that have undergone initial treatment may be held in a suitable, labelled container. They should be covered with a TGA-registered instrument pre-cleaning product that is compatible with metals and plastics and used according to the manufacturer's maximum holding time.

Do not:

- Leave devices in detergent solution for later cleaning.
- Hold devices overnight for later cleaning.

Cleaning processes before sterilisation

If material is allowed to dry or harden, cleaning becomes more difficult and may be compromised. Items with complex designs, such as narrow lumens, may not be effectively cleaned or sterilised unless specific validated processes are used.

The sequence before sterilising involves:

- initial treatment (above),
- optional pre-cleaning using an ultrasonic cleaner,
- then cleaning in an automatic washer-disinfector. Some automatic washer-disinfectors include an initial ultrasonic cycle.

⚠ Manual cleaning alone is no longer acceptable as the primary method of cleaning before sterilisation, except where specified by the medical device manufacturer. However, manual cleaning may need to be used as a pre-treatment step to remove visible soil before using a washer-disinfector.

⚠ When handling soiled devices, staff need to wear personal protective equipment, including long-cuffed, chemically resistant gloves, eye protection, and apron/gown, as appropriate.

Pre-cleaning with ultrasonic cleaners

Ultrasonic cleaners are an optional pre-cleaning step that use high-frequency sound waves to create microscopic bubbles in water. These bubbles rapidly form and collapse (a process called cavitation), producing energy that helps dislodge dirt and contaminants from medical devices. This section incorporates relevant content from AS 2773:2019 *Ultrasonic cleaners for health service organisations*, which sets out the requirements and recommendations for safe and effective use of ultrasonic cleaners.

Ultrasonic cleaning is not a complete cleaning process – it does not remove all debris and does not provide thermal disinfection.

Therefore, items need to be promptly transferred to a washer-disinfector immediately after the ultrasonic cycle for thorough cleaning and thermal disinfection. Delays can allow loosened contaminants to redeposit on device surfaces. Only after this step can items proceed to packaging and sterilisation. Timely progression through the cleaning cycle ensures items are appropriately decontaminated and safe for reuse.

Ultrasonic cleaners are efficient and effective in pre-cleaning, but they are not suitable for all items as they may damage some materials, such as soft plastics, rubber, metallic instruments with poor-quality chromium plating, and mirrors. Check the manufacturer's instructions for each reusable medical device.

Ultrasonic cleaners are best suited to cleaning:

- delicate instruments or those with joints or serrations
- high-quality stainless-steel instruments with good chromium plating
- rigid materials, such as some metal and glass items (check device's instructions for use).

Ultrasonic cleaners are not suitable for cleaning:

- internal surfaces of cannulated reusable medical devices
- plastics and other similar materials
- cemented glass syringes
- mirrors and lenses (these will be damaged if repeatedly subjected to this process)
- fine-pointed reusable medical devices (the vibration caused by the process can blunt fine points).

Before using ultrasonic cleaners, always check the manufacturer's instructions for use of each reusable device to confirm compatibility with ultrasonic cleaning.

⚠️ Never immerse fingers or other body parts into an operating ultrasonic tank. The energy produced can damage tissues and cause long-term joint injury. A warning label should be present on the cleaner.

Method

Only staff who have received appropriate training in the use, testing and maintenance of ultrasonic cleaners should operate the equipment.

When using ultrasonic cleaners:

- follow the manufacturer's instructions for both the cleaner and the devices being cleaned
- degas the solution after filling or refilling the tank to help ensure effective cavitation by removing trapped air
- use cold water first, then add the recommended cleaning agent compatible with both the

ultrasonic cleaner and the device materials.
- keep the solution temperature between 20°C and 40°C. Do not exceed this range.
- visibly soiled instruments need to be dry-wiped, damp-wiped, or rinsed before placing them into the ultrasonic cleaner
- instruments need to be placed in a single layer in a dedicated basket; do not stack or overload the basket
- the solution needs to be replaced before the next use if it becomes cloudy or visibly dirty.

Advantages and disadvantages to ultrasonic cleaners

Ultrasonic cleaners are not a requirement in general practice – they are an **optional precleaning step**. Table 10.14 outlines the advantages and disadvantages for using an ultrasonic cleaner in general practice.

Table 10.14 Advantages and disadvantages for using an ultrasonic cleaner in general practice

Advantages	Disadvantages
• Clean surfaces and cavities without scratching, brushing or scraping • Time-efficient (short cleaning times) • Reduces the work health and safety hazards of instrument cleaning by staff • Simple and easy to use • May require lower concentrations of chemicals than conventional cleaning • Smaller models are inexpensive	• Unsuitable for some reusable practice equipment • Less time-efficient for large loads (require longer cleaning times due to energy absorption) • Large, heavy items can cause poor cleaning due to 'shadowing' effect. • Cleaning may be inconsistent if baskets are stacked.

Maintenance monitoring of ultrasonic cleaners

Practices that use ultrasonic cleaners need to establish and document routine maintenance, testing, and monitoring procedures, including:

- daily function testing before use is required, preferably using a validated commercial test device that changes colour to confirm sufficient energy
- emptying and cleaning the cleaning tank at least once per day of use
- changing the cleaning solution daily or more often if it becomes cloudy or visibly soiled
- always degassing the solution when refilled, before processing instruments
- keeping the lid closed during operation to minimise aerosol release and noise.

Daily logbooks should include records of:

- solution changes
- degassing
- test results and maintenance
- the name of the person performing each check.

Washer-disinfectors

Automatic washer-disinfectors are considered best practice for cleaning reusable medical devices prior to sterilisation, as they provide a consistent, validated, and efficient method of cleaning and thermal disinfection, reducing the variability and potential errors of manual cleaning and supporting effective sterilisation and patient safety.

Washer-disinfectors operate by combining:

- high-temperature water cycles
- specially formulated alkaline detergents.

This controlled, automated process delivers mechanical cleaning action and thermal disinfection, ensuring a high level of decontamination before sterilisation. It is important to note that washer-disinfectors do not achieve sterilisation; sterilisation still needs to occur in a dedicated steriliser.

Key considerations for using washer-disinfectors:

- Items processed in a washer-disinfector do not require additional rinsing or drying before packaging for the steriliser.
- Manufacturer instructions must always be followed for correct operation and load configuration.
- Cycle monitoring is essential. Variables such as temperature, cycle duration, and detergent concentration need to meet validated requirements. Loads that fail to meet these criteria need to be reprocessed before sterilisation.
- Washer-disinfectors require regular servicing, maintenance, calibration, and validation to ensure ongoing effectiveness.
- Domestic dishwashers are not suitable and are not to be used for reprocessing medical devices.

Example: Use of a washer-disinfector in a general practice

Scenario

A general practice performs minor surgical procedures (excisions, biopsies) using reusable instruments such as forceps, scalpels, and scissors. After the procedure, instruments need to be reprocessed for future safe use.

Reprocessing Workflow (with washer-disinfector)

1. At point of use – Pre-treatment
    - Immediately after use, gross debris is wiped off the instrument with damp or dry low-lint or lint-free disposable cloth.
    - Instrument is treated with a TGA-registered instrument precleaning product, if necessary.
    - Instrument is placed in a covered container for safe transport to the sterilising area.
2. Transport to reprocessing area
    - Instrument is transferred to the reprocessing area as soon as possible, ideally within 30 minutes to 1 hour, to prevent soil from drying and becoming harder to remove.
3. Pre-cleaning in ultrasonic cleaner (if applicable)
    - Instrument with fine channels or delicate mechanisms may be put in an ultrasonic cleaner to loosen soil before going into the washer-disinfector.
4. Cleaning in washer-disinfector
    - Instrument is loaded into the washer-disinfector, ensuring all hinges are open and the

device is appropriately positioned.
    - The washer-disinfector automatically performs:
        - Detergent wash
        - Rinse
        - Thermal disinfection

This step is crucial because it ensures a validated and reproducible cleaning and disinfection process, which manual cleaning does not.

5. Drying and inspection
    - After disinfection, the instrument is dried (automatically or manually if required).
    - Instrument is visually inspected for cleanliness and functionality.
6. Packaging and sterilisation
    - Instrument is packaged and placed in a steam steriliser for the final sterilisation step.
    - A chemical indicator is placed inside and/or on the outside of each pack. The indicator needs to be visible.

⚠️ **Timeliness considerations**

Washer-disinfector use should occur as soon as possible after point-of-use pre-treatment, ideally within 1 hour and no later than 4 hours. Delays increase the risk of organic matter drying and may compromise cleaning efficacy.

The longer instruments sit after use, even if treated with a TGA-registered instrument precleaning product, the greater the difficulty in achieving effective cleaning.

Key risk

If instruments are left uncleaned or not treated with a TGA-registered instrument precleaning product for extended periods, residual soil can harden, making it very difficult to achieve effective cleaning and compromising the ability to guarantee sterility later, even after steam sterilisation. This can result in infection risk to patients and non-compliance with reprocessing standards.

Packaging process

Reusable medical devices that must be sterile at the time of use should be protected by an appropriate sterile barrier system, such as bags, pouches, or wraps.

Packaging of cleaned and dried reusable medical devices for sterilisation should occur in the ‘clean’ zone of the reprocessing area, separated from the ‘dirty’ zone and protected from splash, dust, or movement that could compromise the items.

When packing, staff should wear clean, non-sterile, latex-free, puncture- and chemical-resistant utility gloves (preferably with long cuffs). In most practices, heavy-duty cleaning gloves are removed after the cleaning process, and gloves are replaced with clean, non-sterile gloves specifically for packaging.

Wearing gloves during packing is a work health and safety measure to protect staff and prevent contamination of the cleaned items. Non-sterile gloves are sufficient for this stage, as the sterile barrier system will maintain sterility after sealing.

General principles for packing devices into sterile barrier systems

Packaging requirements

- Use packaging large enough to contain the items, in line with the manufacturer's instructions.
- Packaging needs to allow for air removal, steam penetration, and drying.
- Before sealing, expel as much air as possible.
- Do not pack devices that require different sterilisation parameters, such as hollow items mixed with gauze, drapes, or tubing.
- Do not use rubber bands to secure packs for transport or storage.

Preparing instruments

- Hinged or ratcheted instruments: keep open and unlocked to allow steam contact.
- Scissors: loosely open (not to maximum extent).
- Multi-part instruments: disassemble or loosen.
- Sharp devices: use validated tip protectors (as per the manufacturer's instructions).
- Instruments with handles: place the handle toward the end of the pouch that will be opened (safer aseptic removal).

Arranging items

- Kidney dishes, gallipots, and bowls that require sterilisation:
    - Place open side against the paper (non-laminate) surface.
    - Tilt on their edges for drainage and steam displacement.
- Multiple identical items:
    - Ensure all openings face the same way.
    - Use spacers so steam can circulate and drying is adequate.
- Instrument trays need to be metal and perforated to allow air removal and steam penetration during sterilisation.

Validation and quality

- Sterilising textiles such as gauze, towels or drapes is not recommended in general practice given the difficulty in validating reprocessing and ensuring sterility ❗. It is preferable to use single-use disposable items to maintain infection control and comply with quality system requirements.
- Ensure each pack does not exceed the contents of the validated 'challenge pack'. Photographs of the validated contents and their arrangement within the sterile barrier system are useful as a valuable ready reference.

Reprocessing after failed cycles

- Items need to be repacked in a new sterile barrier system.
- Re-cleaning is only required if items have been contaminated after opening, for example dropped on the floor.

Packaging items for sterilisation in pack/bag/pouch-type barrier systems

Remove the number of packs anticipated and close the container before returning to its storage cupboard/drawer.

Check each pack for damage and check the expiry date.

Choosing the correct size

Choose correct-sized pouch for contents:

- Fill only three-quarters of the volume of each pack.
- Leave approximately 2 cm space around each item.
- Allow an empty space of at least 5 cm from the seal area for aseptic opening.

Sealing the pouch or bag

General principles for sealing the pouch or bag

- All items need to be packaged in a sterile barrier system (pouch, bag, or wrapping) before sterilisation.
- The seal needs to be complete, with no gaps that could allow contaminants to enter after sterilisation.
- Always follow the sealing instructions provided by the manufacturer.

Sealing methods

- Self-sealing pouches or bags
    - Common in general practice.
    - Simple, effective, and available in different sizes.
    - To seal: fold precisely along the dotted line, from the centre outward, using both thumbs.
    - Do not use sterilising indicator tape on these pouches.
- Non-self-sealing pouches or bags
    - Fold the open end 2–3 times.
    - Seal securely with one continuous piece of sterilising indicator tape, extending at least 25 mm around the back on both sides.

Do not use

- Sterilising indicator tape on self-sealing pouches.
- String, non-adhesive tape, staples, or elastic bands – these compromise package integrity.
- Drapes on their own – if using draped items, they must be placed within a compliant sterilisation pouch or bag.

Note

- Heat sealing is out of scope for general practice settings.
- Reusable drapes are discouraged – if used, they need to be laundered according to the current relevant laundering standard.

Packaging items for sterilisation using wrapping-type barrier systems

Preparing packages for sterilisation using barrier systems supplied as sheets or rolls (including wrapping and the use of class 1 chemical indicators) requires specific, validated (envelope-fold or square-fold) techniques that are outside the scope of this document.

The wrapping material needs to be checked before use to ensure that it is not damaged or past the expiry date.

Instrument trays used to contain instruments need to be metal and perforated to allow air removal and steam penetration.

Labelling

All packages for sterilisation need to be labelled with the date of sterilisation and the batch number (which includes the cycle or load number if more than one load processed on the same day), as a minimum. This enables appropriate stock rotation and the identification of other affected items if a problem with a processed item is identified.

If appropriate, additional labelling may include:

- steriliser identification number (in practices using more than one steriliser)
- identification of the contents, if items are not clearly visible, for example when using paper bags or wraps or if reusable medical devices within a kidney dish are sterilised in laminate pouches, as the hollow side faces the paper
- identification of the person responsible for cleaning and placing items in the sterile barrier system location of storage post-sterilisation (this may be applicable in larger practices to enable storage of different packs near their locations of use).

Packages for sterilisation can be labelled with barcode adhesive labels (using barcode generator and scanner), prepared sterilisation labelling systems, or manually using a felt-tipped marking pen with non-toxic, water-resistant ink (preferably a validated purpose-designed sterilisation marker) or rubber stamp.

Sharp-tipped, water-based, or ball-type pens are not to be used as they may compromise pack integrity.

When writing on laminate pouches and reels, the writing needs to be on the laminate side outside the sterile window area. Typically, flat wrappers are labelled by writing on the chemical indicator (steriliser) tape.

Steriliser types

In general practices, sterilisation of instruments should be achieved by steam sterilisation under pressure (autoclaves). Other sterilisation systems that use dry heat, ionising radiation, ethylene-oxide, peracetic acid or hydrogen peroxide plasma sterilisation are not generally used due to cost, size or complexity.

Routine cycle monitoring and validation are required for all sterilisers to ensure they are performing correctly. The practice needs to also ensure that the steriliser is operated and maintained according to the practice's documented procedures, based on the manufacturer's instructions.

Under Therapeutic Goods Administration regulations, all new devices sold in Australia need to perform the essential functions of their intended purpose. Practices can only use a steriliser model with an Australian Register of Therapeutic Goods certificate. Sterilisers need to also comply with state or territory regulations. Older sterilisers without certification are to be replaced.

Benchtop steam sterilisers (autoclaves)

Steam under pressure kills/inactivates organisms on the surfaces of the reusable medical equipment

by using the latent heat of condensation to coagulate protein. The use of steam under pressure is the most reliable method for sterilising cleaned reusable medical devices.

Steriliser classification

Sterilisers are classified according to the types of cycles they can run. Some sterilisers can run more than one type of cycle.

Class S cycles

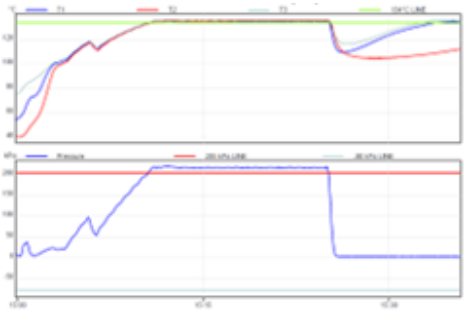
Class S cycles are defined as those provided by sterilisers that have an active drying cycle and are capable of sterilising unwrapped solid goods and at least one of the following:

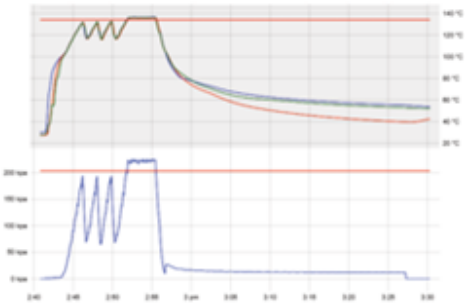
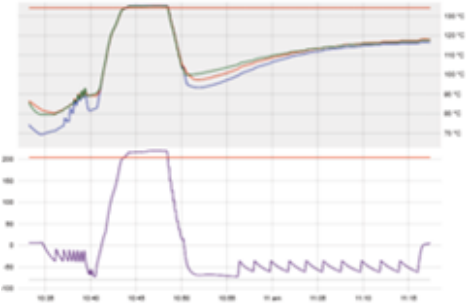
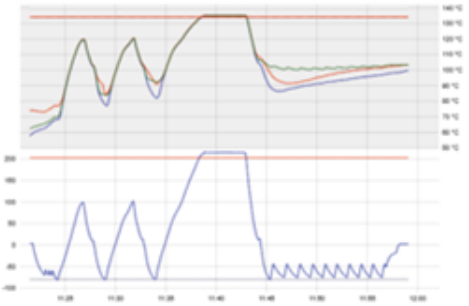
- porous products (limited/no relevance to general practice)
- small porous items (such as gauze swabs; limited relevance to general practice)
- narrow-lumen (hollow A) items: long, thin hollow items – these are not sterilisable by most sterilisers that provide Class S cycles and are generally reprocessed using a Class B cycle
- simple hollow items (hollow B): shorter hollow items such as punch biopsy tips
- single wrapped products
- multiple wrapped products.

The use of Class S cycles is adequate for most general practices. Various steriliser designs can provide Class S cycles.

Gravity (downward displacement) sterilisers are the easiest to monitor and the most cost-efficient.

Table 10.15 Steriliser types

Type	Class	Description	Example of temperature -pressure curve
Gravity (downward displacement) and active drying	N	Traditional type Relatively slow drying phase Air removal by continual release of air/steam mixture via chamber drain line (eg back to internal water reservoir)	

Type	Class	Description	Example of temperature -pressure curve
Purge under pressure (assisted air removal)	S	Air removal by alternating inflow and outflow of steam	
Single vacuum pulse (pre-vacuum, preliminary vacuum, vacuum assisted)	S	Air removal assisted by pump before sterilisation stage Drying time reduced by active ('post-vacuum') removal of steam by pump	
Multiple vacuum pulse (fractionated)	B	Complete air removal via vacuum pump in multiple vacuum pulses before the sterilisation phase, to ensure complete air removal and steam penetration into complex hollow and porous items. Pulsed vacuum is also used in the drying phase to reduce the time and temperature during drying to ensure the porous / wrapping/ packaging is dry at the end of the cycle	

Class B cycles

Class B classes are cycles capable of sterilising:

- all packaged items (single and double wrapped)
- narrow lumen items (Table 10.16 Definitions of hollow medical devices)
- solid and porous items.

Class B cycles are suitable for sterilising very long narrow hollow devices, which are rarely used in general practices. Class B sterilisers are commonly used in dentistry due to the frequent use of long, hollow reusable medical devices and the need for rapid processing of instruments.

In this type of steriliser cycle, air is removed by one or more vacuum stages to vent the air and allow in pressurised steam under pressure (fractionated vacuum system). Chamber pressures vary between types of systems: above and below atmospheric pressure (trans-atmospheric), above atmospheric pressure (supra-atmospheric) or below atmospheric (sub-atmospheric).

Sterilisers with Class B cycles (fractionated vacuum) are the most expensive to buy and operate and may require an onsite supply of deionised water.

Table 10.16 Definitions of hollow medical devices

Type	Definition	Examples
Not hollow	Ratio of the length of the cavity to the diameter is <1	Kidney dish Bowl
Simple hollow	Single-ended open-space items where the ratio of length to diameter of the cavity is ≥1 and ≤5 and where the diameter is ≥5 mm **or** Double-ended open-space items where the ratio of the length to diameter of the cavity is ≥2 and ≤10 and where the diameter is ≥5 mm.	Punch biopsy tip
Narrow lumen	Hollow device beyond the range for a simple hollow item, and neither solid nor porous	Hormone implant insertion device

Steam sterilisers are classified according to the type of cycles they perform (class N, S or B). Dry-heat sterilisers can no longer be used.

⚠️ Practices are required to complete a documented risk assessment to ensure that the type of steriliser used, and the sterilisation processes in place, are appropriate for the range of reusable medical items they process. This assessment should consider the compatibility of items with the sterilisation method, cycle type, packaging, load configuration, and manufacturer instructions.

Sterilisation process

Loading the steriliser

Correct loading is critical to:

- ensure steam can reach and sterilise every surface of every item,
- protect sterile barrier systems from damage, and
- allow complete drying of the load.

General principles for loading the steriliser

- Only sterilise instruments and devices that are:
  - compatible with the steriliser's specifications, and
  - included in the practice's validated load configuration.
- Do not overload. Each load needs to remain within the validated parameters established at annual validation/performance re-qualification.
- Loads cannot be larger or more difficult to sterilise than the validated "challenge load."
- Any new load configuration that could exceed the validated challenge load requires re-validation.
- In an emergency situation (where re-validation cannot occur immediately), a Class 5 or 6 chemical indicator may be used until validation can be arranged as soon as possible.

Wrapped and unwrapped items

- Ideally, do not sterilise wrapped and unwrapped items in the same load.
- If unavoidable:
  - never place unwrapped items above trays of wrapped items, as condensate can drip onto packs below.

Equipment used when loading the steriliser

- Only use validated, ARTG-listed sterilisation containers, load separators, perforated metal trays, or cassettes.
- Equipment needs to be designed for, and validated with, the specific steriliser model.
- Obtain accessories directly from the steriliser manufacturer or a medical supply company if not supplied with the steriliser.

Load separators are used to space items, for example identical kidney dishes that would stack closely together, hindering air removal, steam penetration and drying.

Trays used in the steriliser need to be:

- perforated to allow steam penetration and drainage of condensation
- specifically validated for the steriliser model.

Multiple trays may be required if packs are sterilised flat in single layers.

Do not use solid trays: they block steam movement, cause pooling of condensate, and may result in wet packs.

Method of loading

- Follow the loading instructions provided by the manufacturer.

- Follow the manufacturer's instructions on placement of packs and use of equipment.
- Ensure adequate space between each pack/pouch to facilitate air removal, allow steam penetration and facilitate drying – load trays loosely with a single layer of packs on each tray, within the boundaries of the loading tray.
- Load the steriliser so that no items touch the walls. A square frame insert to achieve this may be supplied with the steriliser.
- Loading of the steriliser follows the same pattern of loading described in the validation protocol.
- Photographs or diagrams of the validated loading pattern and any lesser loading patterns used are useful as a reference.

Table 10.17 Principles of steriliser loading

DO	**DON'T:**
Place only a single layer of packs on each tray and allow space between packs for air removal and steam penetration. Place lighter items on top shelves and heavy items on lower shelves. For items that are prone to entrap air and condensate, such as bowls, tilt on sides (eg 45° angle using a vertical rack) to allow air removal and steam penetration and facilitate drainage and drying at the completion of the cycle. Place single laminated pouches vertically in a spacer with paper to laminate, or horizontally, according to steriliser manufacturer's instructions. Load items within the boundaries of the shelf.	Do not place any items into the steriliser until the complete load is ready to be loaded. Do not overload the chamber or allow packs to overlap. Do not allow packages to touch the sides of the steriliser chamber. Do not exceed the maximum weight or volume specified by the steriliser manufacturer Do not exceed the challenge load. Do not place instrument trays, hollow items or items that could collect moisture (eg bowls) above packs containing soft materials.

Running the sterilisation cycle

For sterilisers that produce printouts, the paper position and ink levels need to be checked before running each cycle to ensure the data are recorded.

Processing time

The sterilisation time (and temperature, if more than one option is available) is a critical factor in achieving sterility. Processing time = penetration (equilibration) time + holding time. Table 10.18 outlines the components of processing time.

Table 10.18 Components of processing time

Penetration (equilibration) time	• The time it takes for the hardest-to-reach part of the load to reach the sterilising temperature, once the chamber itself has reached that temperature. • Determined during validation using a “challenge pack.”
Holding time	• The period the load needs to be held at sterilising temperature to ensure all microorganisms are destroyed. • Includes a built-in safety factor. • Varies depending on the type of items in the load. • Determined by the steriliser technician during validation.

Validation and practice responsibilities	• Many sterilisers have pre-set processing times. These need to be:
	  ◦ checked during commissioning and validation, and
	  ◦ altered if required to ensure effective sterilisation.
	• Each load needs to be processed within the parameters validated for the practice’s steriliser.

Manufacturer’s instructions for use	• Always check the instructions for use for each reusable medical device. • If a device requires a longer or extended cycle, that instruction needs to be followed, even if it differs from the steriliser’s pre-set cycle.

Drying time

The validation process determines the minimum drying time for cycles, based on the challenge load(s).

Heat distribution

Small steam sterilisers (<60 L)

- Heat distribution studies are not required for small benchtop sterilisers.
- Such studies may not reliably identify “cold spots” in small chambers.

Large sterilisers

- A heat distribution study is required to ensure monitoring reflects the temperature in the coolest part of the chamber.
- This study only needs to be performed once.
- Information may be obtained from:
  - the manufacturer,
  - previous validation records, or
  - the service technician performing maintenance.

Routine checks

- Heat distribution can be verified during routine calibration.
- This should not incur additional cost.

Unloading the steriliser

Ensure sterile barrier systems, chemical indicators, and cycle printouts are checked properly. Maintain sterility and prevent damage to packs or instruments.

Key steps and rules

- Do not interrupt the cycle: the steriliser door needs to remain closed until the cycle is complete and chamber pressure has returned to zero.
- Remove the load promptly: do not leave packs to cool inside the steriliser.
- Inspect packs and pouches: any that are wet, dropped, torn, damaged, or have broken seals are considered unsterile and need to be fully reprocessed.
- Re-cleaning is only required if instruments have been contaminated.

Any reprocessing needs to be recorded in accordance with practice procedures.

More information: wet packs

- All packs need to be dry before use.
- A wet pack indicates a steriliser malfunction or processing error, which needs to be identified and corrected immediately.
- Wet packs pose a contamination risk:
    - Excess moisture can allow microorganisms to enter the package.
    - Handling wet packs can transfer microorganisms to the contents, compromising sterility.

Table 10.19 Steps for unloading the steriliser

Before opening the steriliser	• Do not open the steriliser door while the cycle is in operation. • Clean hands. • Check the steriliser printout or digital display to confirm the cycle parameters have been met. Sign/initial the printout or verify the electronic record.

Removing the load	• Open the steriliser carefully.
	• Remove the load using a tray lifter or heat-resistant gloves. Handle trays rather than packs where possible, as packaging is easily contaminated until cooled.
	• Place the load on a perforated tray or rack to allow air circulation and prevent condensation.
	• Ensure the drying area is:
	  ◦ Low-activity (eg adjacent to the steriliser)
	  ◦ Protected from splash
	  ◦ Doors/windows closed
	  ◦ No fans or boosted air conditioning.

Inspection	• Check Class 1 (external) chemical indicators.
	• Visually confirm the load is dry without touching.
	• Allow the load to cool in the clean zone:
	  ◦ Minimum 30 minutes for standard items
	  ◦ More than 1 hour for large items
	  ◦ Do not use fans or high-flow air conditioning.
	• Clean hands again. With dry hands, check that each pack is dry, intact, and seal is secure.
	• Confirm batch/item information matches load documentation and that labels have not dislodged.
	• Record results of process challenge devices (if used) and biological indicators.

Load classification and failures	• Classify the load as failed if:
	  ◦ Packs are wet or damaged
	  ◦ Class 1 or other chemical indicators do not show correct colour change
	  ◦ Cycle monitoring parameters are incorrect
	• Report any failures.
	  ◦ All items in a failed load need to be rejected, fault identified, corrected, recorded, and reprocessed.
	  ◦ A single wet pack does not automatically fail the load, but the cause needs to be identified to prevent recurrence.

Completion and storage	• Record the time of release and name of the person releasing the load in the steriliser cycle log. • Store the sterilised contents correctly once all checks have passed.

Immediate-use sterilisation

Immediate-use sterilisation is only suitable when a device needs to be used immediately and cannot be kept sterile another way, such as by using sterile packaging.

Immediate-use sterilisation is used when necessary, and the process needs to be clearly defined and tested as part of the practice's overall sterilisation procedures.

Devices that are sterilised without sterile barrier systems, like packaging, needs to be used straight away. If not, they could become contaminated before being used in a sterile area.

⚠️ Immediate-use sterilisation is not to be used:

- due to insufficient availability of clean devices; or
- as a cost-saving measure.

Devices processed for immediate use need to be transferred with care to minimise exposure to air or other potential sources of contamination.

Such devices are not to be stored for future use or retained for subsequent procedures.

Validation

Overview – Purpose of validation

Validation is a documented process used to confirm that all of the reprocessing procedures – including cleaning, disinfection, packaging, and sterilisation – are consistently effective. It provides evidence that reusable medical devices processed in the practice are safe for reuse and meet required standards.

Validation applies to all reprocessing stages and needs to be performed:

- When new equipment is installed
- When existing equipment is repaired, moved, or upgraded
- Annually (as a minimum)
- Whenever a change is made that could affect the sterilisation process

All validation steps and outcomes need to be documented and retained for quality assurance and accreditation.

Validation is undertaken before a process or item of equipment is placed into routine use. Routine monitoring and control only apply once validation has occurred. For this reason, validation is addressed before monitoring and control in this guideline.

Stages of validation

Validation is broken into three key stages:

- **Installation Qualification (IQ)**: Confirms that equipment, such as steriliser or washer-disinfector, has been installed according to the manufacturer's specifications. This includes checking physical installation, utilities, and environment.
- **Operational Qualification (OQ)**: Confirms the equipment functions correctly. This involves testing cycles and controls – usually with the machine empty or using test materials.
- **Performance Qualification (PQ)**: Confirms that the equipment, when used with typical reusable medical devices and loading patterns, consistently produces clean and sterile items. This involves running actual process cycles using biological and chemical indicators.

Before conducting any validation, the calibration status of all monitoring and testing instruments needs to be confirmed.

When validation is required

Full process validation needs to be performed:

- at installation or commissioning
- annually
- if any part of the process is changed in a way that could affect the outcome, such as introducing an ultrasonic cleaner, changing packaging systems, major repairs, or changes to loading configurations.

Validation needs to include:

- reviewing all reprocessing protocols, for example pre-cleaning, packaging, storage
- assessing staff competency in following procedures
- validating other equipment such as washer-disinfectors annually.

Offsite validation and remote settings

If onsite technical servicing is not available, which may be the case in some rural or remote practices, offsite validation may be used. In these cases:

- the service provider needs to use test devices and loading configurations typical of the practice
- a complete challenge pack/load should be sent with the steriliser
- the service technician needs to provide a detailed test report showing parameters achieved, for example the time at temperature
- microbiological testing (using biological indicators) still need to be performed onsite by the practice.

Required actions when a steriliser returns from offsite servicing

Before the steriliser is used for processing reusable medical devices again, the practice needs to:

- review the service report provided by the technician
- perform on-site functional tests, including:
    - vacuum or leak test (for vacuum sterilisers)
    - bowie-Dick-type test (for steam penetration)
- run validation cycles using reference loads that include:
    - biological indicators
    - (where applicable) chemical indicators placed in different positions within the load.

These steps confirm that the steriliser is working properly under practice-specific conditions.

If neither full onsite validation nor partial onsite validation is possible, the practice needs to temporarily implement enhanced cycle monitoring using Class 6 indicators until full validation can be completed. Advice should be sought from the technician or equipment provider in these situations.

Components of Steriliser Validation

For each sterilisation cycle used – that is, the specific time, temperature, and pressure parameters – the following needs to be included in the validation:

- Heat distribution testing on an empty chamber (may be sourced from manufacturer or prior validation)
- Description and diagram of the challenge pack/load and loading configuration
- Measurement of penetration time for the challenge pack
- Physical qualification, including confirmation of the time at temperature using calibrated instruments
- Microbiological qualification, using biological indicators across three identical consecutive cycles.

Table 10.20 Steriliser validation and maintenance summary

Action / Test	Responsibility	Frequency	Purpose / Description	Record required

Full validation (IQ, OQ, PQ)	Qualified technician	On installation/ commissioning After relocation, upgrade, or major repair Annually After significant process changes	Confirms consistent steriliser performance with typical loads	Yes – detailed report
Heat distribution test	Manufacturer or qualified technician	At initial validation or as provided	Confirms uniform heat distribution	Yes – validation report
Challenge pack / Load description	Qualified technician	Each annual validation	Document typical load for validation	Yes – included in report
Staff competency check	IPC Coordinator / Practice manager	During validation and annually	Confirm staff understand reprocessing protocols	Yes – training records
Biological indicator testing (PQ phase)	Technician or Reprocessing team	During validation and as needed	Confirms sterility during validation using reference loads	Yes – indicator results
Cycle monitoring – Biological	Reprocessing team	During validation or troubleshooting	Used across 3 cycles to confirm sterility	Yes – keep results
Review of validation report	Reprocessing team	Each time validation is performed	Ensures technician's results are understood and applied	Yes – review notes
Leak-rate test (vacuum sterilisers) [a]	Reprocessing team	Daily (or weekly if air detector fitted), or according to manufacturer recommendations or frequency of use.	Checks that the chamber is airtight	Yes – log result
Bowie-Dick / Steam penetration test [b]	Reprocessing team	Daily (if required according to the type of steriliser is used and what devices are being sterilised)	Confirms air removal and steam penetration	Yes – record result
Cycle monitoring – Mechanical	Reprocessing team	Every cycle	Review auto printout or data logger	Yes – retain printout

Cycle monitoring – Chemical	Reprocessing team	Every cycle	Indicators in every pack or tray	Yes – note checked and passed
Functional test after offsite servicing	Reprocessing team	On return before reuse	Vacuum, Bowie-Dick, and indicator tests	Yes – test outcomes
Enhanced monitoring if validation delayed	Reprocessing team	Temporary	Use high-level indicators in every load	Yes – all indicators logged

Note: Equipment needs to be requalified at least annually and whenever significant changes occur (eg repairs, new processes, new equipment). Requalification may involve full or partial validation (IQ, OQ, PQ), depending on the risk and nature of the change. A competent person needs to assess and document the need for testing, the rationale, outcomes, and any corrective actions.

[a] For a steriliser that uses a vacuum in any part of its operation, a leak-rate test is required on each day of its use (or weekly, if there is an air detector) to check the leak rate does not exceed the maximum specified in the current relevant standard. Refer to the steriliser operating instructions for information on whether an air detector is fitted and how to perform the leak-rate test.

[b] If the practice uses Class B sterilisation cycles and reprocessed narrow-lumen (hollow A) items, a steam penetration/air removal test needs to be performed daily in accordance with steriliser instructions for use and process challenge device instructions for use. Steam penetration tests (eg Bowie-Dick) are a form of process challenge device. These simulate worst-case sterilisation conditions, such as narrow lumens, and confirm air removal and steam penetration during vacuum cycles. The helix device is commonly used for small benchtop sterilisers.

Table 10.21 Washer-disinfector validation and maintenance summary

Action / Test	**Responsibility**	**Frequency**	**Purpose / Description**	**Record required**
Full validation (IQ, OQ, PQ)	Qualified technician	On installation/ commissioning After relocation or repair Annually	Confirms correct function, cleaning efficacy, and temperature control	Yes – validation report
Water quality testing	Reprocessing team or External	Monthly (or more)	Test for hardness, chloride, conductivity	Yes – record results

Review of validation report	Reprocessing team	Each time validation is performed	Ensure technician's results are applied in practice	Yes – review checklist
Cycle monitoring – mechanical	Reprocessing team	Every cycle	Check temp, time, chemical dose, pressure, flow	Yes – printout or log
Visual inspection of items	Reprocessing team	Every cycle	Inspect cleaned items for visible debris	Optional – note if recleaning needed
Cleaning efficacy testing (optional)	Reprocessing team	As required (eg complex instruments)	Use soil tests or surrogate devices if validated	Yes – if used

Table 10.22 Ultrasonic cleaner validation and maintenance summary [a]

Action / Test	**Responsibility**	**Frequency**	**Purpose / Description**	**Record required**
Validation (functionality and cleaning efficacy testing) [b]	Qualified technician	On installation/ commissioning After relocation or repair Annually	Confirm cleaning efficacy and cavitation performance	Yes – validation report
Water quality monitoring	Reprocessing team	Monthly (or more)	Test rinse water quality if applicable	Yes – water test log
Functionality Test	Reprocessing team	Daily	Confirm cleaner is operating correctly per AS 2773	Yes – daily log
Log solution changes and degassing (if applicable)	Reprocessing team	Every cycle	Confirms safe and effective operation of cleaning cycle	Yes – if used
Visual Inspection of Items	Reprocessing team	Every cycle	Check items after ultrasonic cleaning	Optional – note failures

[a] An ultrasonic cleaner is optional for pre-cleaning some reusable medical devices (it is not required in general practice).

[b] Ultrasonic cleaners are pre-cleaning devices. They do not disinfect or sterilise, so the validation approach is simpler, but still essential when used in a validated reprocessing pathway.

Table 10.23 Routine cleaning and monitoring summary

Equipment / Process	Responsibility	Frequency	Description	Record required
Manual cleaning	Reprocessing team	Every item, every time	Visual check for cleanliness	Optional – if failed, reprocess
Cleaning efficacy (Was is clean?)	Reprocessing team	Every item	Visually inspect each item after cleaning. Reclean if dirty. Use test devices or soil tests for complex items if available and validated.	Optional – if failed, reprocess
Heat sealer check (if used/applicable)	Reprocessing team	Each session	Check seal function and one test pouch	Yes – note temp & pouch test
Sterilisation containers	Reprocessing team	Before each use	Check for damage, gasket, filters	Optional – in SOP
Packaging checks	Reprocessing team	Every pack	Inspect seal and follow procedure	Optional – redo and document if failed

Note: The above tables summarise typical validation and monitoring requirements for commonly used reprocessing equipment in general practice. If a practice introduces any additional equipment – for example drying cabinets, low temperature sterilisation systems, or other specialised devices – that equipment needs to be:

- installed and set up according to the manufacturer's instructions
- serviced and validated by a qualified technician prior to use
- included in routine monitoring and recordkeeping schedules.

Validation requirements for such equipment needs to align with relevant standards and manufacturer specifications.

Release of reusable medical devices following reprocessing

Confirming each stage of reprocessing

Before moving an instrument to the next stage of cleaning, disinfecting, or sterilising, the practice needs to check that the previous stage has been done properly.

A device needs to be clean before it can be disinfected or sterilised.

Always check that the equipment used has run its cycle correctly. This includes reviewing cycle printouts or digital records.

There should be a clear system in place to identify processed (ready for use) and unprocessed (dirty) instruments.

When a device can be released for use

A device can only be released for patient use when it has passed all relevant checks – it is clean, sterilised, and its packaging is intact. Table 10.25 outlines the minimum criteria that need to be met at each phase of reprocessing. A device can only be released for patient use **once all criteria across all applicable stages have been met**. Skipping or partially completing any stage applicable to a reusable medical device renders the device non-compliant.

Table 10.25 Minimum criteria for releasing reusable medical devices

Stage of reprocessing	**Release criteria**
Manual cleaning	Device is visually clean and dry.
Automated cleaning	Device is visually clean and dry and cycle records match process settings.
Thermal disinfection (heat-based)	Device is visually clean and dry, and cycle records confirm the correct temperature and time were reached.
Packaging – Sealable pouches/reels (PSBS)	Packaging is the right size, labelled correctly, intact, and includes a chemical indicator that has changed to the correct colour.

Moist heat sterilisation (with drying)	Cycle records confirm the correct time, temperature, and pressure were reached. External chemical indicators show the correct colour change. Packs are dry and intact. Data-logged information or a printout is checked for every load (an on-screen display alone is not sufficient). Chemical indicators inside the steriliser show the correct result. Process challenge devices, where used, show the expected result.
⚠ All listed criteria across all applicable stages need to be met before a device can be released for patient use. If any requirement is not met, the device is considered non-compliant and needs to be quarantined and managed under the formal procedure.	

If any of the requirements are not met, the device is considered non-compliant.

These non-compliant devices need to be quarantined and dealt with under a formal procedure for handling such issues (this is a quality control measure to prevent use of faulty items).

Keeping records of released devices (traceability)

Recording and retention of reprocessing data

The practice needs to maintain reprocessing records for each washer-disinfector and steriliser in use. These records may be kept in a digital tracking system or in a structured log format, depending on the practice's setup.

What to record for each sterilisation cycle

Table 10.26 outlines all items that needs to be recorded for every sterilisation cycle.

Table 10.26 What to record for every sterilisation cycle

Item	**Detail**
Date	When the cycle was run
Steriliser ID	If the practice has more than one steriliser
Load number	Unique number to identify each cycle/load
Load contents	A general description (eg "minor surgical pack x 2")

Name of person who prepared the load	For traceability
Cycle results	Pass/fail status
Chemical Indicator result	Confirm Class 1 CI colour change occurred
Additional indicators used	Record any biological or other indicators used, and their results
Sterile barrier system condition	Confirm packs are dry, intact, seals undamaged
Name or initials of person who released or rejected the load	For accountability
Comments	Record any faults or anomalies and corrective action taken

A printout from the steriliser should be attached to the logbook or verified digitally. If a data logger is used, confirm the parameters were correct and record this check in the log.

Sterilisation records need to be retained in accordance with state and territory legislation.

Review and release

After each cycle, the staff member responsible for releasing the load needs to:

- review the cycle record (printout, data logger, or onscreen display)
- verify time, temperature, and pressure parameters met validated specifications
- confirm this review in the record or logbook with a name or initials.

Do not release the load if:

- cycle parameters are not met
- chemical or biological indicators fail
- there is visible moisture, damage, or any fault with the sterile barrier.

Any deviation needs to be reported to the appropriate supervisor, recorded, and followed by corrective action in accordance with the practice's non-conformance procedure.

Handling, transport and storage of reprocessed reusable medical devices

Once reusable medical devices have been sterilised, they need to be handled, stored and transported in ways that protect their sterility until they are used. Poor storage or handling can damage the sterile barrier system and allow contamination, even if the sterilisation process was successful.

Table 10.27 Handling, transport and storage of reprocessed reusable medical devices

General storage requirements	• Sterilised devices need to be kept clean, dust-free and dry.
	• Do not store them near or under sinks, above sterilisers, or on open shelving.
	• Suitable storage options include:
	  ◦ Clean, sealed cupboards or drawers.
	  ◦ Enclosed shelving units (with sliding doors closed).
	  ◦ Sealable plastic containers with plastic dividers (avoid cardboard, which sheds fibres).
	• Avoid exposing items to sunlight, which can weaken some packaging (eg laminated pouches).
	• Drawers need to be deep enough to prevent damage when opening and closing.
	• Access to sterile stock should be limited to trained staff with clean hands.
	• Always close cupboard doors and container lids after use.

Sterile barrier system integrity	• Protect packs with plastic dust covers or containers, especially for items that are stored long-term. • Handle pouches gently and never use rubber bands or other items that could damage packaging. • If a pouch or pack becomes wet (eg splashed water), it is no longer considered sterile and need to be reprocessed, starting with cleaning. • Unwrapped sterilised instruments cannot be stored as sterile stock – they need to be used immediately or rewrapped and reprocessed.
Stock rotation	• Use a consistent system such as “use from the front, restock at the back” or “use from the left, restock from the right.” • Check and rotate stock regularly to avoid prolonged storage. • Items that have not been used in 12 months should be considered for reprocessing. • Check pouches every 2–3 months for brittleness, moisture, or damage. • If brittle, reprocess the item (including cleaning to remove possible dust).
Environmental conditions for storage	• Store sterile stock in rooms with: • Temperature: 18°C to 25°C. • Relative humidity: 35% to 70%. • Controlled ventilation. • These conditions help prevent microbial growth and protect package integrity.

Transporting between sites	If devices are moved between locations (eg offsite procedures), the method of transport need to: • maintain the sterile barrier system • keep sterile and non-sterile items separate • protect items from physical damage and moisture • use containers that are cleanable, labelled, and appropriate for transport.

Routine monitoring and control

Routine monitoring and control are needed to make sure all reusable instruments are properly cleaned, disinfected, packaged, and sterilised, and to prove this has been done correctly each time.

The practice needs to follow validated procedures for every stage of reprocessing.

Records need to be kept for every cycle (cleaning, disinfection, packaging, and sterilisation) to demonstrate compliance with these procedures.

This documentation is critical because there is no single test that can confirm an instrument is completely clean or sterile.

Assurance of quality and safety comes from consistently following and verifying the process, not from testing the instrument after reprocessing.

What to record

For every cleaning and sterilisation cycle, the practice needs to record:

- equipment used
- the date of sterilisation
- load number
- packs/items in the load
- cycle settings (time, temperature, dosage, etc.)
- who performed the task
- visual inspection results.

Keep these records for each load or item, depending on the process.

Monitoring each sterilisation cycle

Effective sterilisation of used instruments to prevent transmission of microorganisms depends on temperature, pressure and time – each of these parameters needs to be monitored.

The sterilisation cycle is monitored by multiple methods:

- mechanical/physical/electronic indicators recorded by automatic printout or computerised data logger – need to be checked for every cycle before the load contents are released for use
- chemical indicators – included with every pack/pouch and load, and placed on each tray

containing unwrapped items
- biological/enzymatic indicators – used during validation and when steriliser operation needs to be rechecked.

All sterilisers need to automatically generate recorded data.

Mechanical/physical/electronic monitoring

Sterilisers need to be fitted with devices (gauges/timers/digital readout) that provide visible evidence of the time, temperature and pressure during a cycle.

Results are automatically recorded by printout or a data log, which needs to be viewed after each cycle before sterilised items can be released for use. The printout or data logger shows the temperature and pressure at critical points during the sterilisation cycle as well as the drying time.

Chemical indicator monitoring

Classes of chemical indicators

- There are six classes (Class 1–6). See Table 10.24 for types of chemical indicators.
- Higher classes provide more specific information about the sterilisation process.

Required use

- Class 1 chemical indicators need to be used on:
  - every pack in every load, or
  - the tray of unwrapped items.
- Self-sealing pouches and some sealing tapes already include Class 1 indicators.

Optional use

- Other classes of chemical indicators may be used to:
  - Detect suspected faults.
  - Provide additional process information.

Timing

- Check colour change immediately after unloading the steriliser.
- Colour changes after storage do not provide evidence of effective sterilisation.

Documentation

- All chemical indicator monitoring need to be recorded.

Table 10.24 Types of chemical indicators used in general practice

Class	Description	When used	Cycle type*	Advantages	Disadvantages

Class	Description	When used	Cycle type*	Advantages	Disadvantages
1	Process indicator (eg steriliser indicator tape)	On every pack in every load On the tray of every unpacked load	All classes	Can assist in easily distinguishing between processed and unprocessed loads	Designed to reach their endpoint after an exposure to a cycle that may be less than adequate for sterilisation
2	Specific test indicator (eg Bowie–Dick-type tests)	According to practice risk assessment	Class B	Designed to show air removal and the rapid and even penetration of steam	Designed to reach their endpoint after an exposure to a cycle that may be less than adequate for sterilisation
6	Emulating indicators (eg 134°C for 3.5 minutes in steam under pressure)	Assurance that all critical conditions of the sterilisation cycle are met, based on the settings of the selected sterilisation cycles	All classes	Provide a very high level of assurance that all critical sterilisation cycle parameters are met. They are useful when cycle printouts or validation documentation are unavailable, such as during emergency use, with loaned or newly installed sterilisers pending validation, or in immediate-use sterilisation scenarios.	Failure may not identify which specific parameter/s have failed

*Steriliser type or cycle class of steam steriliser

Note Class 3 indicators (indicators for a single parameter) are no longer used. Class 4 and 5 indicators are generally not used in general practice (if needed, refer to *AS 5369 – Reprocessing of reusable*

medical devices and other devices in health and non-health related facilities for further guidance on their use).

Keeping reprocessing equipment working effectively

To make sure cleaning, disinfecting, packaging and sterilising processes are always working properly, the practice needs to regularly check and maintain the equipment used (including but not limited to the steriliser, ultrasonic cleaner, and washer-disinfector). This includes:

- organising regular servicing and performance checks (including functional testing and calibration), at least annually
- using qualified technicians for maintenance, calibration, and annual requalification of all equipment
- keeping records of all servicing, checks and maintenance activities
- following the recommended timeframes for maintenance and calibration listed in tables.

For more details on validation and routine cleaning and monitoring of equipment, refer to the following tables:

- Table 10.20 Steriliser validation and maintenance summary
- Table 10.21 Washer-disinfector validation and maintenance summary
- Table 10.22 Ultrasonic cleaner validation and maintenance summary
- Table 10.23 Routine cleaning and monitoring summary

Calibrating equipment

Any tools or instruments used to measure or control cleaning, disinfection, packaging or sterilising processes – for example timers, pressure gauges or temperature sensors – need to be checked and calibrated regularly to make sure they are accurate.

Maintaining reprocessing equipment

All equipment needs to have regular, planned maintenance, carried out by a trained technician following the manufacturer's instructions.

This includes an annual electrical safety check and cleaning/replacement of air filters as needed.

- Maintenance records need to be kept and easy to access.
- Common equipment that needs regular maintenance includes:
- Washer-disinfectors and sterilisers
- Seals and gaskets
- Gauges, sensors and alarms
- Filters and pressure valves
- Vacuum pumps and boilers
- Circulation systems and steriliser chambers

If equipment is used infrequently (for example, only once a week), the time between maintenance should still not exceed one year.

After any repairs, the equipment needs to be tested to ensure it continues to perform to its original

validated standard. Repairs that require specialised tools are only to be carried out by qualified technicians.

When equipment can be used again

Equipment cannot be used for reprocessing until all required maintenance has been completed and properly recorded.

If maintenance is delayed (for example, because a technician is unavailable), the practice needs to have a clear policy outlining how long it is willing to accept that delay. *AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities* recommends allowing up to 10 working days after the scheduled date.

Identifying and managing equipment faults

All reprocessing equipment needs to be checked regularly for faults. If a fault is found, action needs to be taken quickly to fix it. If the fault could affect the safety or performance of the equipment or endanger staff, the equipment cannot be used again until it has been repaired and confirmed as safe.

Practices should have a process to document equipment faults, actions taken, and decisions about removing equipment from use.

Keeping maintenance records

The practice needs to keep a detailed record for every piece of reprocessing equipment. These records should include:

- Why the maintenance or repair was done
- The date it was done
- The equipment's model and serial number
- Where the equipment is located
- What maintenance or repair was done
- What parts were replaced
- Who did the work (name/company)
- Who checked and approved the equipment for use again.

Records need to be retained for the period specified by the relevant State or Territory Health Department.

Outsourced and offsite instrument handling

Offsite sterilisation services

When offsite sterilisation may be used

- Consider offsite sterilisation when in-house sterilisation is not feasible.
- Options include:
    - An accredited external reprocessing provider, such as another accredited general practice, hospital, or commercial service

    - A co-located reprocessing facility within a shared or multi-site setting.

Provider requirements

- The practice needs to have evidence that the offsite provider is compliant with current standards.
- For co-located facilities, compliance needs to be verified – surveyors need to be able to assess these facilities during on-site accreditation.

Documentation requirements

A clear and precise documented agreement needs to be in place that outlines:

- the accreditation standard for the facility/service
- scope of the reprocessing service
- responsibilities for each stage of reprocessing (pre-treatment, cleaning, packaging, sterilisation)
- safe transport procedures for reusable medical devices (if applicable)
- traceability and tracking system
- evidence of up-to-date calibration and validation of reprocessing equipment.

Practical considerations

- Offsite reprocessing may result in slower turnaround times.
- Practices may need additional sets of reusable medical devices to maintain clinical flow.
- The number of sets required depends on usage patterns and turnaround time.

Reprocessing of reusable medical devices used off-site

Risk management

- Practices performing procedures outside the practice, including house calls or visits to aged care facilities, need to have risk-based policies and procedures to maintain sterility during transport.
- Offsite infection prevention and control protocols need to ensure:
    - safe management and disposal of sharps and used single-use devices
    - use of standard precautions to prevent exposure to blood and body substances.

Segregation and containment

- Sterile and non-sterile devices need to be kept separate in appropriately labelled, cleanable containers.

Initial pre-treatment at the offsite location

- Remove visible soil using damp or dry low-lint/linen-free wiping.
- Rinse if required.
- Apply a TGA-registered instrument pre-treatment product if needed for transport.

Tracking and traceability

- All reusable medical devices used off-site need to be logged to enable tracing and tracking.

Reprocessing reusable medical devices for another practice or facility

If a general practice provides a reprocessing service for another practice or healthcare facility, it needs to ensure that this arrangement complies with these guidelines. The practice could consult its medical defence organisation to confirm the medico-legal implications of providing reprocessing services to other practices.

A documented agreement needs to be in place to:

- clearly outline the scope and expectations of the reprocessing service
- define tracking and traceability systems to monitor the movement of reusable medical devices between facilities
- implement processes to preserve the sterility of reprocessed items during storage and transport back to the receiving practice or facility.

Shared reprocessing reusable medical devices, when done safely and in accordance with best practice, offers a more environmentally sustainable alternative to single-use items by reducing waste and conserving resources.

> ⚠️ **Legal and indemnity considerations**
>
> Practices that provide reprocessing services to other facilities should ensure they have appropriate professional indemnity and public liability insurance that covers these activities.
>
> This includes:
>
> - reprocessing on behalf of other practices or healthcare providers
> - handling, transport, and storage of devices across sites
> - any potential adverse outcomes related to reprocessing errors.
>
> Practices are encouraged to consult their medical defence organisation or insurer to confirm coverage and responsibilities.

Resources

Reprocessing of reusable medical devices. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

RACGP Steriliser Record System - logbook and templates

New South Wales Clinical Excellence Commission Reprocessing of Reusable Medical Devices resources

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. GP41 – Infection prevention and control, including reprocessing. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

AS 5369:2023 – Reprocessing of reusable medical devices and other devices in health and non-health

related facilities

Other relevant standards

ISO 17665:2024 – Sterilization of health care products — Moist heat — Requirements for the development, validation and routine control of a sterilization process for medical devices

ISO 15883-1:2024 – Washer-disinfectors

AS 2773:2019 – Ultrasonic cleaners for health service organisations

AS 5330:2019 – Drying cabinets for reusable medical devices

ISO 11607-2:2019 – Packaging for terminally sterilized medical devices, Part 2: Validation requirements for forming, sealing and assembly processes

ISO/TS 16775:2021 – Packaging for terminally sterilized medical devices — Guidance on the application of ISO 11607-1 and ISO 11607-2

EN 13060 – Small steam sterilizers

ISO/TS 22421:2021 – Sterilization of health care products — Common requirements for sterilizers for terminal sterilization of medical devices in health care facilities

Reprocessing glossary

A

Accredited external reprocessing provider: An organisation or facility outside the practice that is officially recognised for meeting standards in cleaning, sterilising, and reprocessing reusable medical devices.

ACSQHC: The Australian Commission on Safety and Quality in Health Care.

ARTG (Australian Register of Therapeutic Goods): A register maintained by the Therapeutic Goods Administration (TGA) that lists all approved medical devices, medicines, and accessories that can be legally supplied in Australia.

Asepsis: The absence of pathogenic microorganisms; a state of cleanliness required to prevent infection during clinical procedures.

Aseptic presentation: The technique of opening sterile packaging and presenting instruments in a way that maintains their sterility.

Aseptic removal: The process of taking items out of their sterile packaging without contaminating them.

B

Barcode labelling (sterilisation): Use of barcode adhesive labels for efficient tracking and identification of sterilised packs.

Benchtop steam steriliser (autoclave): A compact steriliser that uses pressurised steam to kill microorganisms by coagulating proteins; standard in general practice.

Bioburden: The amount and type of organic and inorganic material (such as blood, tissue, body fluids, dirt) present on a reusable medical device before cleaning.

Biodegradable (cleaning agents): A product that breaks down naturally in the environment without causing harm, making it more environmentally friendly.

Biofilm: A layer of microorganisms that can develop on the surface of medical devices, making them more resistant to cleaning and disinfection.

Biological Indicator (BI): A test system containing viable microorganisms used to assess whether sterilisation conditions were sufficient to kill known resistant microbes.

Biological/Enzymatic Indicator: A test system containing live microorganisms used during validation or troubleshooting to confirm sterilisation effectiveness.

Bowie-Dick Test: A specific test performed on vacuum steam sterilisers to check for effective air removal and steam penetration in the steriliser chamber.

C

Calibration: The process of verifying and adjusting the accuracy of measuring instruments to ensure they provide correct readings.

Cavitation: The process by which microscopic bubbles formed by ultrasonic waves implode, creating energy that removes debris from surfaces.

Certification number (of calibration device): A unique ID that verifies the calibration equipment used is itself traceable to recognised measurement standards.

Challenge load: The entire load configured to represent the most difficult-to-sterilise scenario – the worst-case load – used during validation of steriliser performance.

Challenge pack: A specially prepared pack used in validation or routine testing to represent the most difficult-to-sterilise part of a load (eg a tray of instruments with complex lumens).

Chemical indicator: A device or material that changes colour when exposed to specific sterilisation parameters (eg temperature, steam), providing a visual indication that the sterilisation process has occurred. It does not confirm sterility.

Class 1 chemical indicator: A visual marker incorporated into sterile packaging that changes color to show the package has been exposed to sterilisation conditions (like correct temperature), but does not guarantee the item inside is sterile.

Class 1 chemical indicator: A process indicator used on every pack or load to show that the item has been exposed to the sterilisation process (eg steriliser tape).

Class 2 chemical indicator: A specialised test indicator (eg Bowie-Dick test) used to assess air removal and steam penetration in pre-vacuum (Class B) sterilisers.

Class 6 chemical indicator: An emulating indicator designed to react to all critical parameters of a specific sterilisation cycle, providing a high level of assurance of process completion.

Class B steriliser cycles: Advanced steriliser cycles capable of sterilising all packaged items, including single and double wrapped, narrow lumen, solid, and porous items. Use fractionated vacuum stages to remove air, allowing steam penetration under pressure.

Class S steriliser cycles: Steriliser cycles capable of sterilising unwrapped solid goods and some limited porous or hollow items, with active drying; suitable for most general practices.

Clean zone: Comprises: Pre-sterile zone: Area where reusable medical devices are cleaned, dried, and packaged, but not yet sterilised. Sterile zone: Area where sterilised devices are stored, protected from contamination, and ready for use.

Co-located reprocessing facility: A reprocessing facility located within the same premises or building as a general practice, responsible for cleaning, disinfection, or sterilisation of medical devices on behalf of that practice.

Competent person: A staff member with the necessary knowledge, training, and skills to perform a specific task safely and correctly.

Consequence (risk matrix): The potential severity of harm or impact that could result if a threat or hazard occurs (insignificant, minor, moderate, major, catastrophic).

Consumable item: An item intended to be used once or for a limited number of uses before being discarded or replaced. This includes single-use items and items that wear out with repeated use, such as indicator strips, wraps, brushes, and cleaning cloths.

Contamination: The presence of infectious agents or other unwanted materials on a surface or within a substance.

Control measure: An action or procedure implemented to reduce or eliminate a risk or hazard (eg staff training, policy change).

Control point: A point in a process where monitoring can be applied to reduce a risk, but which is not critical to preventing unacceptable outcomes.

Controlling and monitoring software: Software systems that operate or track reprocessing equipment. These systems need to be verified after updates or changes to ensure they function correctly.

Corrective action: A step taken to fix or address a problem or deviation identified during monitoring or validation (eg repeating sterilisation after a failed cycle).

Critical control point: A step in a process at which control is essential to prevent or eliminate a risk to patient safety.

Critical limit: A specific measurable value (eg sterilisation temperature, cycle time) that needs to be met to ensure a process is effective.

Critical medical device: A medical device that is intended to be introduced directly into or have contact with the vascular system or normally sterile areas of the body.

Cycle record: Documentation of the sterilisation process parameters, including date, steriliser ID, load number, cycle results, and indicators used.

D

Data logger: An electronic device that records sterilisation cycle parameters such as temperature, pressure, and time for later review.

Decontamination: The process of cleaning and disinfecting reusable medical devices before sterilisation.

Degassing: The process of removing dissolved air from the ultrasonic cleaning solution to allow effective cavitation, usually done by running the cleaner without a load after filling.

Demineralised water: Water that has had minerals and impurities removed, usually by distillation or deionisation, to prevent damage to sterilisation equipment and ensure effective sterilisation.

Designated containers (for transport): Rigid, leak-proof, appropriately sized, and labelled containers used to hold and transport used or clean reusable medical devices safely within the practice or externally.

Detergent (high-foaming): A cleaning agent that creates a lot of suds. High foaming is discouraged because it makes items harder to see and rinse, and may create aerosols.

Detergent (low-foaming): A detergent that produces minimal suds, making it safer and easier to rinse—preferred in reprocessing.

Device traceability: The ability to link a specific reusable medical device to the date, sterilisation cycle, staff, and equipment used for its reprocessing.

Directional airflow: Air movement designed to flow from clean areas towards dirty areas, reducing contamination risk by pushing potential contaminants away from sterile zones.

Dirty zone: The area where contaminated reusable medical devices are received and initially cleaned (pre-cleaned) before further processing.

Disinfectant (instrument grade): A disinfectant approved for use on medical instruments, available in different levels based on their efficacy: low-level, intermediate-level, and high-level. Each level corresponds to the type of microorganisms it can inactivate and the intended use of the instrument (eg non-critical, semi-critical, or critical).

Disinfection: A process that eliminates many or all pathogenic microorganisms, except bacterial spores, on inanimate objects.

Drying cabinet (also Controlled environment drying cabinet): A cabinet designed to dry cleaned medical devices in a controlled, contaminant-minimising environment prior to packaging or storage.

Drying time: The time in the sterilisation cycle allowed for moisture removal from the sterilised load, as validated during commissioning.

E

Environmental risk control (for chemicals): Documented measures to minimise the impact of reprocessing agents on the environment, including correct disposal and avoiding overuse.

Enzymatic detergent: A detergent containing enzymes that break down organic material. Usually used in automated systems for cleaning complex instruments with internal channels.

Enzyme foam: A type of pre-treatment product used to keep instruments moist and begin breaking down organic material before cleaning.

Exposure time: The length of time a device is subjected to a sterilisation or disinfection process necessary to achieve the desired microbial kill.

Extended sterilisation cycle: A sterilisation cycle longer than standard, specified by device manufacturers for certain devices requiring extra time to ensure sterility.

F

Fractionated vacuum: A sterilisation cycle where air is removed in stages by vacuum pulses, improving steam penetration in Class B sterilisers.

G

Gravity displacement steriliser: A type of steam steriliser that removes air by gravity, allowing steam to enter; simple and cost-efficient, common in general practice.

H

Hand basin: A shallow, smooth-surfaced fixture designed solely for hand hygiene. Hand basins are not to be used for cleaning or rinsing reusable medical devices, disposal of fluids, or any purpose other than handwashing.

Hand hygiene stations: Designated areas or equipment (such as sinks or alcohol-based handrub dispensers) specifically for handwashing or hand sanitising within the reprocessing zone.

Hazard: A source of potential harm or a situation that could lead to patient injury or compromised infection control. In reprocessing, hazards are grouped into categories: physical, chemical, biological, and quality.

Heat distribution study: An assessment to confirm uniform heat spread throughout the steriliser chamber, especially important for large-capacity sterilisers.

Heat sealer: A machine used to seal sterile barrier system packaging made from laminate rolls by applying heat to melt and bond the edges.

Heat sealing (packaging): A process using heat to fuse packaging materials; generally out of scope for typical general practice settings.

High-level disinfection system: A process or piece of equipment that uses chemical disinfectants to kill all microorganisms except high levels of bacterial spores, used for semi-critical devices.

Holding time: The time the steriliser maintains the required temperature to achieve effective microbial kill, including a safety margin.

I

Incubator (for BI): A device used to maintain optimal temperature conditions for growing and detecting any surviving microorganisms after a biological indicator test.

Infection prevention and control (IPC) coordinator: A designated individual responsible for overseeing and implementing infection prevention and control measures, including the supervision of reprocessing activities, staff training, and compliance with relevant policies and standards.

Initial treatment at point of use (pre-cleaning): Immediate cleaning or soil removal performed on reusable medical devices right after use, often involving wiping with low-lint cloth or applying a TGA-registered pre-cleaning product to prevent soil drying.

Installation qualification (IQ): The documented process of verifying that a reprocessing unit has been correctly installed according to the manufacturer's specifications.

Instructions for use: Official guidance provided by the manufacturer detailing how a medical device or piece of equipment needs to be used, cleaned, disinfected or sterilised.

Instrument precleaning product: A cleaning solution applied before full cleaning begins (usually sprayed or soaked) to keep debris soft and moist. It needs to be TGA-listed.

Instrument pre-treatment product: Chemical or enzymatic agents used onsite or offsite to begin cleaning reusable medical devices by removing gross soil and preventing drying of contaminants.

Instrument-grade disinfectant: A disinfectant approved for use on reusable medical devices, registered with the TGA. Not to be confused with general-purpose or hospital-grade disinfectants.

Intermediate-level disinfectant: A disinfectant that destroys vegetative bacteria, most fungi, and viruses, and inactivates Mycobacterium tuberculosis, but does not reliably kill bacterial spores.

L

Laminate pouch: A pre-made sterilisation pouch consisting of paper backed with clear plastic, allowing sterilising agents to penetrate while keeping contents sterile after processing.

Leak test: A test performed on vacuum-assisted sterisers to verify that the chamber maintains an effective airtight seal, ensuring proper air removal for sterilisation.

Likelihood (risk matrix): The chance or probability that a specific hazard or threat will occur, used to calculate risk level.

Limitations of ultrasonic cleaners: Ultrasonic cleaners do not remove all debris or provide thermal disinfection and need to be followed promptly by washer-disinfector cleaning; they may damage certain materials like soft plastics, rubber, or delicate instruments.

Lint: Small textile fibres left behind on surfaces by some cloths. These fibres can cause a foreign body reaction in patients if transferred to medical instruments.

Load configuration: The arrangement and type of instruments in a steriliser during a cycle, validated to ensure effective sterilisation.

Load failure (washer-disinfector): A condition where the washer-disinfector cycle fails to meet validated parameters, requiring reprocessing of items before sterilisation.

Load separators: Devices used in the steriliser to space out items (eg kidney dishes) to prevent stacking that inhibits steam penetration and drying.

Loaned reusable medical devices: Reusable instruments borrowed from another healthcare provider, requiring complete reprocessing before use.

Low-level disinfectant: A disinfectant effective against most vegetative bacteria, some fungi, and some viruses, but not against mycobacteria or bacterial spores.

Low-lint cloth: A cloth that leaves minimal fibres behind.

Lumen: A hollow channel or tube within a reusable medical device.

M

Manual cleaning (as pre-treatment): Using manual methods (brushing, wiping) to remove visible soil before automated cleaning; no longer acceptable as the primary method except where specified.

Maximum hold time: The maximum amount of time reusable medical devices can be safely held after initial treatment before further cleaning or reprocessing, as specified by manufacturer instructions.

Microbiological surveillance testing: Optional periodic testing to check for the presence of bacteria or other microorganisms on equipment or in the environment.

Moist heat sterilisation: A sterilisation method that uses steam under pressure to kill all forms of microbial life. It is the most common and reliable method used in general practice.

Monitoring and measuring equipment: Devices used to observe, measure, or verify critical parameters (eg temperature, pressure, time, conductivity) during the reprocessing of reusable medical devices. These instruments need to be accurate, regularly calibrated, and traceable to recognised measurement standards to ensure reliable performance of reprocessing equipment.

Monitoring procedure: A defined activity to check that a critical limit or process step is being correctly performed and meets required standards.

N

Non-abrasive cleaner: A cleaner that does not scratch or wear down the surface of reusable medical devices.

Non-conformance procedure: A formal process for managing and correcting failures or deviations from established reprocessing protocols.

Non-conforming product: An item that does not meet required standards or specifications and needs to be removed, reprocessed, or discarded to avoid safety risks.

Non-conforming reusable medical device: A device that fails to meet reprocessing, packaging, or sterility requirements (eg if it is damaged, wet, not traceable, or expired).

Non-critical medical device: A medical device that comes into contact with intact skin but not mucous membranes.

Nonwoven material (SMS polypropylene): A fabric made from spunbond-meltblown-spunbond polypropylene layers, used as a disposable sterile barrier material that allows sterilising agents through while blocking contaminants.

O

Offsite reprocessing: Sterilisation and cleaning performed outside the practice, such as by a hospital, accredited facility or commercial provider.

One-way workflow: A strict, unidirectional flow in the reprocessing area from dirty to clean zones, preventing cross-contamination by ensuring dirty items never contact cleaned items.

Operational qualification (OQ): The documented process of verifying that equipment operates correctly and consistently according to its specifications and expected performance requirements under defined conditions.

P

Penetration (equilibration) time: The time required for the coolest or hardest-to-reach part of the steriliser load to reach the target sterilisation temperature.

Perforated instrument tray: Metal trays with holes or slots designed to allow steam penetration and air removal during sterilisation.

Perforated trays/cassettes: Metal trays with holes to allow steam penetration and drainage during sterilisation; solid trays are not to be used.

Performance qualification (PQ): The documented validation that equipment consistently performs as intended and produces reliable, acceptable results under routine operational conditions.

Personal protective equipment: Items such as gloves, gowns, eye protection or masks worn to protect staff from exposure to contamination during reprocessing.

Point of use: The location or moment a reusable medical device is used on a patient.

Pre-cleaning: See Initial treatment at point of use.

Pre-sterilisation cleaning: The cleaning process performed on reusable medical devices to remove bioburden and contaminants before sterilisation.

Pre-sterile zone: The area where reusable medical devices are cleaned, dried, and packaged, but not yet sterilised. See ‘Clean zone’.

Pre-treatment (offsite): Initial cleaning steps done at the location where instruments are used, including wiping, rinsing, and chemical treatment, before transport back to the practice.

Pre-treatment holding solution: A temporary holding solution for contaminated instruments if there’s a delay before cleaning. It prevents drying and bacterial growth.

Preventive action: Measures taken to stop problems before they happen based on identified risks or past trends.

Preventive maintenance: Routine servicing (eg calibration, part replacement) of reprocessing equipment to ensure continued safe and effective performance.

Printout: A hard copy record produced automatically by the steriliser detailing the cycle parameters during a sterilisation process.

Process challenge device (PCD): A device designed to simulate the most challenging conditions for sterilisation, used to verify that the sterilisation process is effective – particularly for complex or difficult-to-sterilise instruments – often incorporating biological or chemical indicators.

Process definition: A detailed, validated specification of each step required to safely reprocess reusable medical devices, ensuring they are clean, disinfected, sterilised, and safe for reuse.

Process flow: A step-by-step outline of the actions taken during the reprocessing of reusable medical devices, from the moment of use through cleaning, disinfection, sterilisation, and storage.

Process indicator: A chemical or physical marker used to differentiate between sterilised and non-sterilised items, but does not confirm sterility.

Process validation: A documented process to confirm that equipment and procedures used in reprocessing consistently produce results that meet pre-established specifications and quality attributes.

Product families (for validation): Groups of reusable medical devices with similar design, materials, and reprocessing requirements. Grouping devices this way allows for representative validation testing of similar items.

Q

Qualified technician: A person with recognised training and competence to perform equipment validation, maintenance, and testing.

Quality assurance (QA): A structured and risk-based approach to ensure processes, equipment, and outcomes related to reprocessing meet safety and effectiveness standards.

Quarantine (in reprocessing): Isolating non-compliant or faulty medical devices until corrective action can be taken.

Quarantine (of sterilised loads): Holding reprocessed items aside and not releasing them for use until all validation and monitoring (eg biological indicators) confirm successful sterilisation.

R

Recall (of reusable medical device): A process to identify, retrieve, and prevent the use of devices found to be improperly reprocessed or unsafe.

Release criteria: The set of minimum standards a reusable medical device needs to meet to be deemed safe for patient use following reprocessing.

Reprocessing: The steps taken to clean, disinfect, and sterilise reusable medical devices to make them safe for reuse.

Reprocessing area: A designated, segregated physical space specifically for cleaning, disinfecting, packaging, sterilising, and storing reusable medical devices.

Reprocessing log: A record-keeping system that tracks each sterilisation or cleaning cycle, including details of loads, parameters, and operator actions.

Reprocessing team: A group responsible for overseeing and supporting the safe and effective reprocessing of reusable medical devices. The team typically includes the IPC coordinator, practice management, clinical and reprocessing staff, and may also involve external experts. The team collaborates on risk management, hazard analysis, and continuous improvement of reprocessing practices.

Requalification: Revalidation or retesting of equipment after repairs, modifications, or at regular intervals to ensure continued compliance.

Reusable medical device: Any medical device designed and validated by the manufacturer to be reprocessed and reused on multiple patients.

Reverse osmosis water filtration system: A device that filters water by pushing it through a semi-permeable membrane, removing impurities and minerals to produce high-purity water suitable for sterilisation processes.

Rigid reusable sterilisation container: A hard, durable container designed for sterilising and storing surgical instruments, allowing steam penetration and protection during storage.

Risk analysis: A systematic method of identifying and evaluating potential hazards that may impact the effectiveness or safety of reprocessing reusable medical devices.

Risk assessment: The systematic process of identifying, analysing, and evaluating risks or hazards related to reprocessing.

Risk category/rating: The result of risk assessment, based on likelihood and consequence. Common categories are low, medium, high, and extreme.

Risk evaluation: The process of determining the significance of identified risks based on a risk matrix, and deciding on appropriate control measures.

Risk management system: An ongoing process that identifies, assesses, and controls risks to ensure that the reprocessing of reusable medical devices is safe and effective.

S

Safety data sheet: A document from the manufacturer that outlines the safe use, hazards, environmental impact, and disposal of a chemical product. Safety data sheets need to be reviewed annually.

Segregation: The physical or procedural separation of dirty (contaminated) and clean (sterile or disinfected) zones within the reprocessing area to prevent cross-contamination.

Self-sealing pouch: A sterile barrier pouch with an adhesive strip that allows sealing without heat or tape.

Semi-critical medical device: A medical device that comes into contact with mucous membranes or non-intact skin.

Shadowing effect: A phenomenon in ultrasonic cleaning where large or improperly positioned items block ultrasonic waves, resulting in poor cleaning of certain surfaces.

Single-use medical device: A medical device intended by the manufacturer to be used on one patient during a single procedure and then discarded.

Sink (Reprocessing sink): A deep, purpose-built fixture designed for immersion, manual cleaning, rinsing, and flushing of reusable medical devices. In the reprocessing area, sinks are designated as 'dirty' (for washing contaminated items) or 'clean' (for rinsing after washing). Reprocessing sinks are never to be used for handwashing or for general disposal of liquids.

Spaulding Classification Scheme: A risk-based framework used to determine the level of reprocessing required for medical devices based on how and where they are used on the body (critical, semi-critical, non-critical).

Splashback: A vertical surface (usually behind a sink or bench) designed to protect walls and surfaces from water or chemical splashes during cleaning.

Standard operating procedure: A written, detailed instruction that describes how a specific task or process (such as loading a steriliser) should be performed to ensure consistency and compliance.

Steam penetration test: A test, often synonymous with Bowie-Dick, used to verify that steam can penetrate steriliser loads effectively.

Steel wool/domestic abrasives: Harsh cleaning tools that are not to be used because they damage instruments and can leave residue or cause rusting.

Sterile barrier system: A packaging material or system designed to maintain the sterility of a medical device after sterilisation until the point of use.

Sterile zone: The area where sterilised devices are stored, protected from contamination, and ready for use. See 'Clean zone'.

Sterilisation: The validated process used to render a reusable medical device free from all viable microorganisms, including spores.

Sterilisation cycle parameters: Key factors including time, temperature, and pressure that need to be monitored and controlled to achieve sterilisation.

Sterilisation indicator tape: Tape that changes colour when exposed to sterilisation conditions, used to confirm that the sterilisation cycle occurred (not for self-sealing pouches).

Sterilisation labelling: Markings on sterilisation packs that include at least the sterilisation date and batch/load number, enabling stock rotation and traceability.

Steriliser / Autoclave: A machine that uses steam under pressure (or another validated method) to sterilise reusable medical devices.

Steriliser identification number: A unique number or code used to differentiate between multiple sterilisers in the same practice for recordkeeping and traceability.

Steriliser printout: A recorded document from the steriliser cycle detailing cycle parameters and results, used to verify successful sterilisation.

Sterility maintenance: The process of ensuring that a sterilised medical device remains sterile until point of use, requiring intact packaging and protection from environmental contamination.

Stock rotation: A system ensuring older sterilised stock is used before newer stock to prevent expiry or damage.

Sub-atmospheric steriliser: A steriliser operating below atmospheric pressure during sterilisation.

Supra-atmospheric steriliser: A steriliser operating only above atmospheric pressure during sterilisation.

T

Testing instruments: Devices used to measure or verify critical parameters (such as temperature, pressure, time, or water quality) during the reprocessing of reusable medical devices. They support equipment validation, performance testing, and routine monitoring.

TGA (Therapeutic Goods Administration): The Australian government authority that regulates medical devices and ensures their safety and quality.

TGA-registered (cleaning agents/disinfectants): Refers to products that have been reviewed and approved by the Therapeutic Goods Administration for safe use on medical devices.

Thermal disinfection: Disinfection achieved through high temperatures in an automated washer-disinfector, eliminating many microorganisms but not necessarily sterilising.

Timeliness (in cleaning): The principle that cleaning and disinfection steps should occur as soon as possible after use (within 1 – 4 hours) to prevent soil drying and ensure effective reprocessing.

Tip protectors: Validated devices placed on sharp instrument tips during packaging to prevent perforation of sterile barrier systems and protect staff from injury.

Traceability: The ability to track a reusable medical device through each stage of cleaning, sterilisation, and use, via documentation.

Trans-atmospheric steriliser: A steriliser system where chamber pressure cycles above and below atmospheric pressure during sterilisation.

Transportation: The safe collection and movement of used reusable medical devices within a practice or to an external reprocessing facility, using appropriate containers to prevent contamination or injury.

Turnaround time: The total time required for a reusable medical device to be cleaned, sterilised, and returned for use.

U

Ultrasonic cleaner: A device using ultrasonic waves to clean instruments by removing soil and debris, typically used as a pre-cleaning step.

Ultrasonic cleaning: A pre-cleaning method using ultrasound waves to remove debris from instruments, often used before washer-disinfector cleaning.

Unloading protocol: A standardised procedure to safely remove sterilised loads without compromising sterility, including checks of packaging, chemical indicators, and printouts.

Utility gloves (for packaging): Non-sterile, latex-free, puncture-resistant, chemical-resistant gloves with preferably long cuffs, worn during packaging to protect staff and maintain cleanliness.

V

Validation: A documented process that provides objective evidence that equipment or procedures are correctly installed, operate as intended, and consistently achieve the required outcomes.

W

Washer-disinfector: An automated machine that cleans and disinfects reusable medical devices using controlled water temperature, detergents, and disinfection cycles.

Wet pack: A sterilised package that remains damp at the end of the sterilisation cycle, indicating a possible steriliser malfunction or drying failure. Wet packs are considered non-sterile and need to be reprocessed.

11. Disease surveillance and outbreak response

Overview – Disease surveillance and outbreak response

Overview – Disease surveillance and outbreak response

Staff should be familiar with their statutory responsibilities for monitoring and reporting disease outbreaks or other infection prevention and control incidents to the relevant state/territory authorities.

The practice must develop procedures to ensure that notifiable diseases are promptly reported.

Staff must know when and how to implement appropriate transmission-based precautions.

An infection prevention and control kit, containing items for implementation of standard and transmission-based precautions including personal protective equipment, could be available at reception to be used when a patient presents with a suspected or confirmed infectious disease. Reception staff must receive education and training on when and how to use the kit correctly.

Response procedure

Practices must set up procedures to respond to disease outbreaks, including protocols for receiving notification of emerging pathogens of concern promptly, for notifying the state or territory health department of notifiable diseases, and for minimising the risk of infection transmission. Systems must also be in place to enable authorities to identify people with whom an infected patient has been in contact (contact tracing).

Staff education

All staff members must receive education to minimise the risk of infection transmission when patients present with suspected or confirmed infectious diseases, including how to apply transmission-based precautions.

Reception staff must be able to identify patients with potentially transmissible clinically significant infections so they can implement appropriate infection prevention and control measures. To perform this role effectively, reception staff need to know which infections patients are more likely to present with and/or pose a greater risk, based on current epidemiology.

Protocols for managing potential transmission risk include telephone triage and risk assessment when making appointments and arranging videoconference consultations as appropriate (see Transmission-based precautions).

When reception staff identify a patient who has arrived at the practice with a potential transmissible infection, appropriate infection prevention and control measures depend on the route of transmission but might include isolating the patient, asking the patient to wear a mask, and explaining to the patient why infection prevention and control measures are being implemented (see Transmission-based precautions).

Staff could also be trained in how to use the infection prevention and control kit (see Infection prevention and control kit) to initiate appropriate measures promptly when a patient presents with a

suspected or confirmed infectious disease.

All staff (including administrative staff and cleaners) must be trained to identify risks of potential cross-infection within the practice and manage them appropriately, including through:

- hand hygiene (see Hand hygiene)
- the use of personal protective equipment (see Personal protective equipment)
- triage of patients with potential transmissible disease (see Transmission-based precautions)
- safe storage and disposal of clinical waste including sharps (see Sharps)
- managing blood and body substance spills (see Exposure to blood and other body substances)
- maintaining appropriate immunisation (see Staff screening, immunisation, and infection management)
- reporting to the practice's infection control coordinator when they or their household contacts have symptoms suggestive of a significant transmissible infection (see Staff disease surveillance).

The staff member with delegated responsibility for staff education on infection prevention and control must ensure that the induction program for new staff covers the practice's infection prevention and control policy, as relevant to their role. They must also ensure that requirements are met for providing ongoing staff education and assessing staff competency.

Monitoring for threats

General practices and other office- and community-based practices must have systems in place that allow for monitoring threats of outbreaks (eg varicella, measles, lyssavirus, Hendra virus), bioterrorism (eg anthrax) and emerging diseases such as COVID-19, avian influenza, and multidrug-resistant organisms.

To ensure the practice remains up to date with information, it is useful to nominate a staff member (eg a primary care nurse or other clinical staff member with the role of infection prevention and control coordinator) to take responsibility for receiving and acting on notifications from federal and state/territory health departments about emerging infectious diseases, as well as regularly checking the websites of relevant public health authorities (see Resources) for guidelines, and disseminating any updated information to other staff.

The person responsible for maintaining up-to-date information on infection prevention and control should be a full-time staff member and should hand over this role during absences. They must also maintain their knowledge and skills through continual professional development courses offered by the state or territory health department or other organisations.

Notifying relevant authorities

General practices and other office- and community-based practices need to have systems in place to ensure prompt reporting of notifiable diseases to the relevant state/territory health department. Some notifiable diseases require notification by telephone.

Each health professional has a responsibility to ensure that suspected or confirmed notifiable diseases are reported promptly as required by health authorities.

The Australian Government Department of Health and Aged Care maintains a list of nationally notifiable diseases.

Australian states and territories each have their own notifiable communicable disease lists. Many diseases are included across jurisdictions; however, some are only notifiable in one or two jurisdictions.

State or territory lists are available at the links below:

- Australian Capital Territory
- New South Wales
- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia.

Contact tracing

Occasionally a patient who visits the practice will later be found to have a significant transmissible disease (eg tuberculosis). State/territory health authorities must be notified, to enable tracing of contacts of the infected patient.

To facilitate appropriate counselling, quarantine and post-exposure prophylaxis, practices may be required to identify non-immune staff on duty and other patients present at the time, who may have been exposed to the infectious patient. This may entail checking staff rosters, staff immunisation records and patient appointment records.

Practice response to threats

When someone with a clinically significant transmissible microbial infection (eg a relevant respiratory, skin or gastrointestinal infection) has visited the practice, appropriate infection prevention and control measures (standard and transmission-based precautions) must be implemented to prevent the spread of disease (see 5. Levels of precautions).

Reception and triage

Practice staff must receive training to recognise symptoms and signs of potentially infectious disease and to respond appropriately. The practice's infection prevention and control program coordinator is responsible for providing or arranging education and training for each staff member, as appropriate to their role.

It is critical to involve reception staff in identifying risks of microbial transmission and train them to alert the designated person on duty (eg a primary care nurse or GP) immediately.

Triage in general practices and other office- and community-based practices includes:

- routine triage
- questions asked when the patient indicates signs or symptoms consistent with an infectious disease
- questions asked of patients when the practice suspects a localised outbreak of an infectious disease (eg measles) or when the practice is part of a response to a pandemic (eg providing a GP respiratory clinic).

Staff must know how and when to use standard and transmission-based precautions (see 5. Levels of precaution) to protect themselves and other patients, especially in the event of a disease outbreak. Staff must also receive training in how best to explain to patients why precautions are being taken and to reassure patients that precautions are for everyone's benefit.

Patient privacy must be considered and respected when asking questions while booking an appointment. However, a few non-intrusive questions can elicit information that is very useful in planning for the patient's arrival and care within the practice.

Routine triage

When booking patient appointments, reception staff can ask a general question about the reason for the consultation. If a patient indicates that they have a fever, a rash, a cough, diarrhoea or an infectious disease, it is appropriate to ask more questions. The receptionist could explain that the reason for asking is to help the doctors provide the right care.

If the patient does not offer information about possible infection, the receptionist should ask a series of routine questions, after explaining the reason. Practices may wish to develop a script or question sheet for the clerical staff to use for this purpose. For example:

Would you mind if I asked a few more questions to help our doctors?

- *Do you have a fever?*
- *Do you have a cough?*
- *Do you have a rash?*
- *Do you have diarrhoea or vomiting?*
- *Have you been overseas recently? (if so, where?)*
- *Have you recently had contact with someone who has an infectious disease?*

The answers could be recorded and passed on to the doctor (without delay, if necessary based on risk).

Prioritisation of patients: a guide to urgency for non-clinical staff (POPGUNS) is a widely used triage process in general practices. POPGUNS has been adapted by Primary Health Networks into clear fact sheets for staff use and can be located on PHN websites (for example, Adelaide PHN's POPGUNS Triage Process).

> ⚠ Reception staff training should ensure that care is not delayed for patients with potentially life-threatening conditions such as meningococcal disease or acute asthma exacerbations.

Triage during an infectious disease outbreak

The practice must plan for and establish policies to be implemented in the event that a localised outbreak of an infectious disease occurs, or when the practice is part of a response to a suspected or known epidemic/pandemic (eg avian influenza). In a pandemic, such as COVID-19, policy will be guided by continually updated local and national guidelines provided by health authorities and supported by advice from RACGP.

All staff must be trained in and familiar with these policies, and continue to receive updates as the

policies change over time.

During an infectious disease outbreak, triage at reception will include specific questions, for example:

Our doctors have asked us to ask all patients a few questions.

Have you been exposed to anyone with chicken pox or shingles in the past 3 weeks?

Have you recently returned from overseas?

If infection risk is identified, staff must take appropriate precautions by following established protocols according to the type and degree of risk (eg arranging a telehealth consultation or pre-consultation phone call from a doctor, or by implementing transmission-based precautions when the patient attends) (see Transmission-based precautions).

When booking an appointment for a patient with a potentially infectious disease, consider offering a telehealth consultation, or a time when there are fewer patients present (eg at the end of a session). During a disease outbreak (including pandemics), consider booking such patients to a designated doctor in a designated separate room – preferably with separate entrance/exit to the main surgery.

During respiratory outbreaks, respiratory clinics are set up in each state and territory. These clinics are specifically staffed, equipped and designed to provide care for patients with significant communicable respiratory infections. Ensure staff have details of the locations of these clinics and encourage patients to attend them in preference to attending the practice.

Consider having a properly protected staff member triaging patients as they arrive at the practice and before they enter. This staff member's role is to explain to patients the precautions being taken and only permit entry those who meet entry criteria (eg those will wear a mask and agree to segregation, preferably in a designated room with a separate entrance/exit), and when the healthcare worker is ready to see them. Risk may be reduced by consulting outdoors.

During an outbreak, practices may set up extra protocols to prevent contact between patients, such as asking patients to wait in their car or outside before being called into their consultation, to avoid mingling in the waiting area and further protect patients and reception staff. Practices may be supported to provide enhanced telehealth options, and health authorities may set up special services (eg COVID-19 virtual hospitals), to avoid the need for patients to visit general practices.

Communication of infection prevention and control information to patients

Practices could consider:

- posting a sign at the entrance to the practice and another at reception, informing patients of any significant infections that are currently circulating and asking them to tell the receptionist if they have symptoms of a possible infection
- recording a telephone message for patients on hold, asking them to let the receptionist know if they think they may have an infectious disease, and advising that they may be asked questions about their symptoms
- displaying information about infection prevention (eg current local infection outbreaks) on the front door, practice notice board, the practice website, or information sheets
- displaying posters on prevention of infectious disease transmission in waiting areas.

These strategies can be adjusted according to current risk.

Practices must consider how to communicate infection prevention and control information to patients

from culturally and linguistic diverse backgrounds, or those with a communication impairment. This could include the use of interpreters or translated information.

Patient-specific precautions

It is important that staff respond rapidly and with the appropriate precautions when confronted by a patient with a suspected or confirmed infectious disease that could be transmitted (eg by air or contact) during the healthcare visit. These precautions include providing a mask to those with respiratory symptoms and requiring them to wear it, isolation in a designated separate room, physical distancing in waiting areas, minimising the time that patients remain in the same room (for example, by asking them to remain outside or in their car until called), respiratory hygiene and cough/sneeze etiquette, disposal of used tissues, hand hygiene with alcohol-based handrub, and informing other patients as necessary (see Transmission-based precautions).

All patients who enter the practice should be required to practise respiratory hygiene and cough/sneeze etiquette: covering the mouth with a tissue when coughing or sneezing, using tissues to blow the nose, disposing of tissues immediately after use into a lined waste bin provided, and cleaning hands using an alcohol-based handrub on arrival and after touching their nose. Posters promoting respiratory hygiene and cough/sneeze etiquette, prominently displayed in patient and staff areas, might help remind patients and staff.

Receptionists' infection prevention and control kit

An infection prevention and control kit could be available at reception, to be used when a patient presents with a suspected or confirmed infectious disease. A prevention and control kit contains items for implementation of standard and transmission-based precautions, including personal protective equipment.

The infection prevention and control kit should be used when a patient presents with a potentially infectious disease, and must be frequently checked and restocked as necessary.

Practices can involve staff in risk management procedures to identify any additional measures that may be required.

Table 11.1. Sample contents of Receptionists' infection prevention and control kit

Nonsterile disposable gloves

Eye protection (eg goggles)

Masks – regular surgical masks for patients and P2/N95 masks for staff, for protection against microbial infections transmitted by air

Tissues – for general use in promoting respiratory hygiene and cough/sneeze etiquette

Emesis bags

Waste bin, lined with a plastic bag, for disposing of used tissues

Alcohol-based handrub or antimicrobial wipes for hand hygiene

TGA approved detergent/disinfectant solution or wipes for cleaning surfaces after contact with an infectious patient

Yellow biohazard bags for disposal of contaminated items and to line the waiting area bin.

Critical infection prevention and control incidents

In the event of a critical incident (eg a failure of sterilisation or disinfection, or an exposure to blood or body substances), the local public health unit must be advised immediately.

If there has been a breakdown in an infection prevention and control procedure or protocol in the practice, a 'lookback' investigation may be necessary to identify, trace, recall, counsel and test patients or healthcare workers who may have been exposed to an infection (usually a blood-borne virus).

Monitoring of critical incidents and other sentinel events is an important part of surveillance. A structured process should be undertaken to identify the problem and contributing factors (eg a root cause analysis), explore and identify risk reduction strategies, and implement solutions.

Ethical and legal considerations apply to the conduct of lookback investigations.

Resources

Disease surveillance in office-based practice. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Notifiable diseases. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Type and duration of precautions for specific infections and conditions. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Risk-management: Case study for glove use, hand hygiene and seasonal influenza vaccination in an office-based practice. In: NHMRC. Australian guidelines for the prevention and control of infection in healthcare (2019)

Management of multi-resistant organisms and outbreak situations. In: NHMRC. Australian guidelines

for the prevention and control of infection in healthcare (2019)

Australian Government Department of Health and Aged Care list of nationally notifiable diseases

Communicable Diseases Network Australia (CDNA) surveillance case definitions

Australian Government Department of Health and Aged Care information on GP respiratory clinics

RACGP Managing pandemic influenza in general practice and related resources ('pandemic flu kit')

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

Royal Australian College of General Practitioners. Core Standard 1. Criterion C1.2 – Communications. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

12. Planning a practice: design, fit-out, equipment and consumables

Overview – Planning a practice: design, fit-out, equipment and consumables

Overview – Planning a practice: design, fit-out, equipment and consumables

It is crucial to consider infection prevention and control when planning and designing a new practice or renovating a practice building, and when planning ongoing maintenance of the site and equipment.

Aspects of building design and organisation that affect infection prevention and control include choice of surface materials for walls, floors, desks and examination/treatment tables (easy to clean), material and design of fixtures and fittings, provision of areas that can be used for isolation is needed, adequate ventilation, design of reprocessing area and storage (if practice uses reusable medical devices that require special processes), waste storage areas, placement and design of hand hygiene equipment.

Aspects of equipment set-up that affect infection prevention and control include choice of disposable versus reusable medical devices and choice of information technology hardware and telephones (ease of cleaning keyboards, handsets and other devices).

Ongoing maintenance of the building and equipment should be carried out as necessary to minimise infection risks.

The infection prevention and control coordinator should be involved in purchasing decisions about consumables, equipment, personal protective equipment, hand hygiene agents, manual or automated cleaning, disinfecting and sterilising systems, furnishings, reusable medical devices, single-use and single-patient use devices including sharps, chemicals used for environmental cleaning and disinfection, waste management systems and other relevant clinical purchases.

Equipment

When choosing equipment for the practice, consider their potential effect on the risk of infection transmission when new and after long-term use.

Reusable medical devices (eg surgical instruments)

When purchasing reusable medical devices such as instruments, ensure that they can be correctly reprocessed. Check the manufacturer's advice on cleaning and sterilisation before buying.

Avoid devices that require chemical disinfection.

Choosing equipment for reprocessing reusable medical devices

All reprocessing equipment (including ultrasonic cleaner, washer-disinfectors, heat sealers, small sterilisers, drying cabinets, biological indicator incubators, and packaging systems) must conform to relevant equipment and/or safety standards.

If the practice opts to reprocess reusable medical devices onsite, this equipment should be selected to

meet the following criteria:

- The model is listed on the Australian Register of Therapeutic Goods as a medical device
- The model complies with an applicable Australian or international standard for performance and safety
- The model is fit for purpose based on assessment of the practice's needs according to the volume and type of reusable medical devices requiring reprocessing
- There is an operator's manual containing documented and validated reprocessing instructions in accordance with ISO 17664-1
- There is a documented schedule for periodic maintenance
- A validation, calibration and maintenance contract can be initiated with the supplier or the practice's preferred provider.

Choosing consumables and reusable equipment

When choosing which consumables and reusable medical devices to stock, practices need to consider in addition to cost (Table 12.1. Considerations for purchasing consumables and reusable equipment).

Table 12.1. Considerations for purchasing consumables and reusable devices

Parameter	Considerations
Quality	The extent to which the product performs its defined function without contributing to transmission of infection
TGA approval	Whether the item is listed in the Australian Register of Therapeutic Goods
Safety	Whether the item can be appropriately cleaned, disinfected or sterilised. Check manufacturer safety data and instructions Whether the item will have infection prevention and control implications for other consumables, equipment or plans Whether any difficulties in cleaning and reprocessing the product may impact on the product's functionality and safety Whether any alternative products that are available may present a lower risk of infection
Cost-benefit analysis	Unit cost, maintenance costs including hidden expenses such as staff time and other resources (eg cleaning and/or disinfection requirements)
Waste minimisation	Disposal requirements in accordance with legislative compliance

Parameter	Considerations
Serviceability and availability	Availability, reliability of supply chain Maintenance requirements Service agreement and warranty

Single-use items

Single-use devices must not be reprocessed for reuse.

A manufacturer may classify its product as single use for several reasons including:

- cleaning difficulties posed by sharp or narrow lumen reusable medical devices
- materials used in the manufacture of the item may not withstand the cleaning and sterilisation process (eg some plastics in nebuliser sets, tubing, spacers and syringes may distort or melt, low-grade stainless steels in disposable sets may rust)
- significant work health and safety risks posed in reprocessing (eg needles for injections, neurological testing, acupuncture and suturing, scalpel blades, lancets and stitch cutters).

Even practices that reprocess their own equipment will still use many single-use items. Practices need to have stock control policies to ensure a ready supply of single-use stock is available as required. For example, practices could have essential disposable instruments available in the event of a reprocessing equipment (eg steriliser) breakdown.

The advantages of single-use items are that they minimise the risk of cross-infection, reduce the work health and safety risks of reprocessing and sterilising, and reduce the staff time and cost of onsite sterilisation. Some practices, especially those that rarely perform procedures requiring sterile reusable medical devices, will find it more economical to maintain a range of pre-packaged, single-use sterile items to manage their anticipated needs.

The disadvantages of single-use items are that their unit cost may be higher, may have a greater environmental impact, require storage space, and require a reliable supply chain (practices may need to keep larger amounts of disposable stock as a buffer). Quality varies between brands.

Lancets for blood testing

Lancets should be of the spring-loaded, retractable, single-use variety for most applications. The main exception is disposable nonretractable single-patient lancets used multiple times for allergy testing on a single patient and then discarded.

Plates or bases of reusable spring-loaded devices are a potential source of cross-infection and pose an unacceptable risk to patients in general practice and other office- and community-based practices. However, their use is appropriate for single-patient home use where instructions on thorough cleaning are provided.

Changing the plates or bases and reloading with new but unprotected lancets poses a work health and safety risk.

Auroscope tips

Practices should use disposable auroscope tips.

Reusable auroscope tips are not appropriate for office-based practices because cleaning is difficult. Although inexpensive, they require significant staff time to carefully clean small lumens with fine brushes to remove wax contamination. Imperfect cleaning is a hazard.

Spirometer and peak flow meter mouthpieces

Single-use mouthpieces must be used in practices. Spirometers must use inline viral/bacterial filters.

Peak flow meters are for single-patient use only.

Spacers for use with pressurised metered-dose inhalers

Practices can keep cardboard disposable spacers for use when a patient does not have their own spacer (see Respiratory equipment).

Metal spacers (rarely used) and some plastic spacers can be sterilised, but most plastic spacers are for single-patient use and cannot be sterilised.

Resources and references

Resources

Royal Australian College of General Practitioners. General practice tool kit, Module 2 – Your practice premises.

Australasian Health Facility Guidelines (Part D Infection prevention and control)

Australian Health Protection Principal Committee (AHPPC) statement on the role of ventilation in reducing the risk of transmission of COVID-19

United States Environmental Protection Agency. Air Cleaners, HVAC Filters, and Coronavirus (COVID-19)

World Health Organization. Roadmap to improve and ensure good indoor ventilation in the context of COVID-19

Australian Commission on Safety and Quality in Health Care. Optimising ventilation for infection prevention and control in healthcare settings

Relevant Australian standards

Royal Australian College of General Practitioners. GP Standard 4. Criterion GP4.1 – Infection prevention and control, including sterilisation. In: Standards for general practices. 5th Edition. East Melbourne, Vic: RACGP, 2020.

AS 1668.1 – The use of ventilation and air conditioning in buildings

AS 1668.2 – Mechanical ventilation in buildings

AS 1071 – Placement and presentation of hand hygiene materials in relation to the basin in healthcare settings

Other relevant standards

ISO 17664-1 – Processing of health care products

References

1. World Health Organization. Roadmap to improve and ensure good indoor ventilation in the context of COVID-19. [Accessed 3 October 2022].

Glossary

A

Antimicrobialagents: Substances or processes that inhibit the growth or tend to destroy or inhibit the pathogenic action of microorganisms including bacteria, viruses and fungi

Autoclave: Common term for small steam steriliser

B

Biofilm: A layer of material on the surface of an instrument or device which contains biological material and in which microorganisms may be embedded

Biological indicator: A carrier on which a defined number of test microorganisms have been deposited, contained within its primary pack and ready for use, that provides a defined resistance to the specified sterilisation process (colloquially known as a 'spore test')

Body substance: Replaces former term 'body fluids'

C

Chemical indicator: A system that reveals a change in one or more predefined process variables based on a chemical or physical change resulting from exposure to a process

Cleaning: The process of removing all visible dust, soils and other material from a surface. Manual cleaning is usually performed by using detergents and a physical action such as rubbing or brushing. Meticulous cleaning of instruments and other reusable equipment is required before disinfection or sterilisation

Contamination: The introduction of microorganisms or foreign matter (or both) to sterile or nonsterile materials or living tissue

D

Decontamination: The removal of microorganisms and foreign matter from materials or living tissue

Disinfectants, levels of: Disinfectants are classed as low, intermediate or high level:[1]

Low-level disinfectants are defined as those that rapidly kills most vegetative bacteria as well as medium-sized lipid-containing viruses when used according to the manufacturer's instructions. It

cannot be relied upon to kill bacterial endospores, mycobacteria, fungi or all small nonlipid viruses.

Intermediate-level disinfectants kill all microbial pathogens except bacterial endospores, when used as recommended by the manufacturer. They kill bacteria (including *Mycobacterium tuberculosis*), fungi (not necessarily effective against some spores) and viruses, when used according to the manufacturer's instructions.

High-level disinfectants are defined as those that kills all microbial pathogens except large numbers of bacterial endospores, when used according to the manufacturer's instructions. These are not used for general cleaning. General practices and other office-based healthcare practices generally do not use high-level disinfectants.

Disinfection: Any process that kills, inhibits or reduces disease-causing organisms such as viruses, bacteria or protozoa. It may not destroy spores. Disinfection is not the same as sterilisation.

E

Enzymatic indicators: Tablet or strip containing enzymes from microorganisms to imitate biological indicators

Equilibration time: See Penetration time

Exposure-prone procedures: see Procedures

F

Filtering mask: (also called filtering face-piece respirator or N95/P2 masks) – see N95/P2 mask

Full-body gown: A gown (see Gown) that is fluid-impervious and has long sleeves to protect clothing and arms

G

Gown: A fluid-impervious garment worn over clothes, with long or short sleeves

H

Hand hygiene: The practice of minimising pathogenic microorganisms on hands by thoroughly cleaning hands whenever necessary, using either alcohol-based handrub or appropriate liquid soap and water. In this guideline, both 'perform hand hygiene' and 'cleanse hands' means to follow one of the standardised methods.

Health professional: Someone who provides clinical care

Herd immunity: Immunity of a group or community. The resistance of a group to invasion and spread of an infectious agent based on the resistance to infection of a high proportion of individual members of the group

High-efficiency filtration: Filtration with a particle removal efficiency of 90–95%

Holding time: Minimum time at a given temperature that has been established to destroy all microorganisms

Hollow items: If a device is open at one end, it is hollow if the ratio of cavity length to diameter is greater than 1. If a device is open at both ends, it is hollow if the ratio of cavity length to diameter is greater than 2.

Narrow lumen items: Hollow device beyond the range for a simple hollow item, and neither solid nor porous

Simple hollow items: single-ended open-space items where the ratio of length to diameter of the cavity is ≥1 and ≤5 and where the diameter is ≥ 5 mm **or** double-ended open-space items where the ratio of the length to diameter of the cavity is ≥ 2 and ≤10 and where the diameter is ≥ 5 mm.

I

Iatrogenic: Resulting from the professional activities of health professionals. In the infection prevention and control context, this refers to infections acquired by the patient during the course of treatment

Immunity: The state of being protected from infection

Immunocompromised: A person whose immune system is not functioning well (eg those undergoing chemotherapy, or on antirejection medication or high doses of steroids)

Instrument detergent: A detergent developed for cleaning instruments and equipment

L

Low-level disinfectant: see Disinfectant

N

N95/P2 mask: A high-efficiency filtration mask capable of filtering extremely small particles. Used with airborne precautions

P

P2/N95 mask: A high-efficiency filtration mask capable of filtering extremely small particles. Used with airborne precautions

Particulate filter respirator: (also called filtering face-piece respirator or N95/P2 mask) – see N95/P2 mask

Particles: solid or liquid substances in the form of aggregated molecules or particles. Airborne particulate matter is typically in the size range of 0.01–100 μm diameter

Pathogen: Any disease-causing microorganism

Pathogenic: Having the capability to cause disease

Penetration time (equilibration time): The time taken to heat the centre of a pack to the sterilising temperature from when the steriliser chamber has reached the sterilising temperature

Personal protective equipment: Equipment used as an infection prevention and control measure. Includes the use of gloves, waterproof gown, goggles/face shield, mask and appropriate footwear

Physical distancing: Maintaining distance between people to reduce the risk of contact, droplet and airborne spread of disease.

Procedures, non-exposure-prone: (with respect to blood-borne viruses) procedures in which the healthcare worker's hands and fingers are visible and outside of the body at all times, and which do not involve possible hand injury by sharp instruments or exposure to tissues if the healthcare worker follows routine infection prevention and control procedures (eg routine oral examination with appropriate personal protective equipment, insertion and maintenance of intravenous lines).

Procedures, exposure-prone: (with respect to blood-borne viruses) procedures in which there is an increased risk of transmitting blood-borne viruses between healthcare workers and patients. These include invasive procedures in which there is potential for direct contact between the healthcare worker's skin (typically hands) and sharp objects or surgical instruments (eg needles, fractured bones, teeth).

Process challenge device: A device containing a chemical indicator used as a test of steriliser function

Prion: A microorganism resistant to most cleaning, disinfection and sterilisation techniques. Prions are responsible for Creutzfeldt-Jakob disease.

Q

Qualification: process of checking whether reprocessing is being performed correctly (eg includes physical qualification, microbiological qualification and process qualification)

R

Respiratory etiquette: (also called respiratory hygiene and cough/sneeze etiquette) Public health measures used to reduce the spread of respiratory infections by covering the mouth when coughing or sneezing, using tissues to blow the nose, disposing of tissues into waste, and washing hands after touching the nose

S

Safety data sheets: A document prepared by the manufacturer of a hazardous substance which describes its properties, uses, health hazard information, and precautions for use, safe handling information and first aid information. A safety data sheet can be obtained by contacting the distributor/ manufacturer

Safety factor: Extra time included in the holding time to ensure sterilisation is achieved. It is a precautionary measure and forms 25% of the holding time

Skin disinfection (antisepsis)**:** a process that involves the application of a disinfectant to reduce levels of microorganisms on the skin/mucosa

Skin asepsis: The removal, or elimination, of transient microorganisms from the skin and a reduction in the resident flora

Soil: Any matter that contaminates objects and may protect microorganisms from disinfection or sterilisation (eg blood and other body substances)

Staff: All people who work in or provide care within the practice, including employees and contractors (eg doctors, nurses, receptionists, practice managers, allied health professionals, administrative staff, cleaners including contract cleaners). 'Clinical staff' refers to health professionals (including doctors, nurses, Aboriginal health workers, and allied health care professionals).

Standard precautions: The range of methods and practices used by health professionals to prevent infection transmission, based on the assumption that all blood and body substances are potentially infectious

Standards, The: The Royal Australian College of General Practitioners. Standards for general practices. 5th edition. East Melbourne, Vic: RACGP, 2020

Sterile: The absence of protozoa, spores, mycobacteria, fungi, Gram-positive and Gram-negative bacteria, chlamydia, Rickettsia, mycoplasma and viruses

Sterilisation: A validated process used to render a product free from all forms of viable microorganisms. The nature of microbial death is described by an exponential function, and although the probability can be reduced to a very low number, it can never be reduced to zero

Sterilisation time: The total time of the sterilisation stage after the sterilising chamber has reached the sterilising temperature (penetration time plus holding time)

T

The Standards: The Royal Australian College of General Practitioners. Standards for general practices. 5th edition. East Melbourne, Vic: RACGP, 2020

Time at temperature testing: Testing performed to check that the correct temperature is maintained within the challenge pack for the entire sterilisation cycle. It is performed during validation and can be extended to check penetration and drying times

Transmission-based precautions: Precautions taken by health professionals, in addition to standard precautions, against a particular mode of transmission. They include droplet precautions, airborne precautions and contact precautions and involve the use of personal protective equipment, isolation and other measures

V

Validation: A documented procedure for obtaining, recording and interpreting the results of testing of sterilisers required to establish that a process consistently yields sterile products

---

References

1. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2019). Version 11.12 Updated March 2022. Canberra: National Health and Medical Research Council; 2019 [Accessed 29 September 2022].

Links

National

Communicable Diseases Network Australia

Australian Government Department of Health and Aged Care communicable diseases topic links

Australian Commission on Safety and Quality in Health Care

Australian Government Department of Health and Aged Care: Health Emergency Preparedness and Response

Australian Government Department of Health and Aged Care: Australian Health Management Plan for Pandemic Influenza

RACGP Managing pandemic influenza in general practice and related resources (‘pandemic flu kit’)

RACGP Emergencies and pandemics

Australian Government Department of Health and Aged Care: COVID-19 management guidelines for primary care providers

States and territories

Australian Capital Territory

Disease Surveillance Unit

Northern Territory

Public Health Unit disease control information

Public Health Unit disease control contacts

New South Wales

Infectious diseases information for GPs

Contact details for Public Health Units

Phone number for redirection to local public health unit: 1300 066 055

Blood and body fluid exposure hotline 1800 804 823

HIV Post Exposure Prophylaxis Hotline

Queensland

Contact information for public health units

South Australia

Notifiable disease reporting

Communicable Disease Control Branch: 1300 232 272

Tasmania

Diseases notifiable by medical practitioners

Communicable Diseases Prevention Unit: 1800 671 738

Victoria

Information on healthcare-associated infection prevention

Information on infectious diseases

Communicable diseases Section: 1300 651 160

Western Australia

Links for information for health professionals on communicable diseases

International

World Health Organisation

Relevant standards

Current Australian and New Zealand standards

AS ISO 31000 Risk management – Guidelines

AS/NZS IEC 31010:2020: Risk management – Risk assessment techniques

AS 1071 – Placement and presentation of hand hygiene materials in relation to the basin in healthcare settings

AS/NZS1715:2009 – Selection, use and maintenance of respiratory equipment

AS 23907 Sharps injury protection — Requirements and test methods — Sharps containers

AS/NZS 3825 Procedures and devices for the removal and disposal of scalpel blades from scalpel handles

AS/NZS 4261 Reusable containers for the collection of sharp items used in human and animal medical applications

AS/NZS 4261 AMDT 1 Reusable containers for the collection of sharp items used in human and animal medical applications

AS 3816 – Management of clinical and related wastes

AS/NZS 4146 – Laundry practice

AS/NZS 3733 – Textile floor coverings – cleaning

AS 5369 – Reprocessing of reusable medical devices and other devices in health and non-health related facilities

ISO 17665-1:2006 – Sterilization of health care products

AS 1668.1 – The use of ventilation and air conditioning in buildings

AS 1668.2 – Mechanical ventilation in buildings

AS 1071 – Placement and presentation of hand hygiene materials in relation to the basin in healthcare settings

ISO 17664-1 – Processing of health care products

International standards

European Standard EN 1500 – hygienic handrub

European Standard CEN-EN 12791 – surgical hand disinfection

Acknowledgements

The RACGP acknowledges the Australian Primary Health Care Nurses Association (APNA) as partners in the development of the *Infection Prevention and Control Guidelines*. The RACGP also gratefully acknowledges the generous contribution from members of the RACGP Technical Working Group – Infection prevention and control guidelines:

- Ms Jane Bollen (Chair)
- Ms Sara Drew
- Ms Madeline Jammal
- Ms Margaret Jennings
- Ms Denise Lyons
- Dr Robert Menz
- Ms Megan Reilly
- Dr Abhishek Verma

Other contributors

The RACGP also gratefully acknowledges others who contributed to this guideline, including Shanthi Gardiner, Policy and Advocacy Manager at APNA, Steve Lines, Operations Manager at STS Health, and all those who contributed to previous editions of this guideline, including members of the former RACGP Infection Prevention and Control Standards Steering Committee.

The RACGP would also like to thank the practices, surveyors and individuals that provided feedback on previous editions of the Infection prevention and control standards for general practices and other office-based and community-based practices. The feedback received has assisted in the development of the *Infection Prevention and Control Guidelines*.

The RACGP would also like to thank Ms Jenni Harman, Director at Meducation, for her technical writing and development of content in the *Infection Prevention and Control Guidelines*.

The development of the *Infection Prevention and Control Guidelines* would not have been possible without funding from the Australian Government Department of Health and Aged Care.

Disclaimer

The Royal Australian College of General Practitioners *Infection prevention and control guidelines for general practices and other office-based and community-based practices* (5th edition) (the *Infection Prevention and Control Guidelines*) is a guide to assist health professionals and other staff implementing procedures involving infection prevention and control. In using the *Infection Prevention and Control Guidelines*, please note the following. The *Infection Prevention and Control*

Guidelines ordinarily conform with Australian standards and authoritative texts on the subject. However the *Infection Prevention and Control Guidelines* in some instances depart from Australian standards and other authoritative texts where it is considered that the standards they impose, for example upon a hospital environment, are out of proportion to tangible risks in medical practice generally. The *Infection Prevention and Control Guidelines* were reviewed by experts in the fields of infection prevention and control, infectious diseases, microbiology and general practice who the RACGP believed to be reputable and reliable. While the *Infection Prevention and Control Guidelines* were current at the date of first publication, the RACGP recognises the changing and evolving nature of infection prevention and control and does not guarantee this publication is or will remain accurate, current or complete. The *Infection Prevention and Control Guidelines* are not, and are not intended to be, an exhaustive and comprehensive text on the subject. Instead, the information is intended for use as a guide of a general nature only. The *Infection Prevention and Control Guidelines* may or may not be relevant to particular practices or circumstances. Whilst the text is primarily directed to health professionals, it is not to be regarded as professional advice and must not be considered a substitute for seeking professional advice. Persons implementing any processes identified in the *Infection Prevention and Control Guidelines* must exercise their own independent skill or judgement or seek appropriate professional advice relevant to their own particular circumstances when so doing. Care and common sense should be exercised in applying the *Infection Prevention and Control Guidelines* to a practice. Compliance with these *Infection Prevention and Control Guidelines* does not guarantee the discharge of any duty of care owed to patients or others coming into contact with the health professional and the premises from which the health professional operates. To the extent permitted by law, the RACGP does not make any warranties of any kind, express or implied (including as to fitness of purpose or otherwise), nor it does it guarantee the satisfaction of relevant laws (including duties or privacy laws), and it excludes all liability to anyone in relation to the *Infection Prevention and Control Guidelines*. Such excluded liability includes that for loss or damage (including indirect, special or consequential damages), cost or expense incurred or arising by reason of any person using or relying on the information contained in the publications, whether caused by reason of any error, any act or omission (whether negligent or not), or any inaccuracy or misrepresentation in the information in each publication. While this publication was made possible with funding support from the Australian Government Department of Health and Aged Care, the Commonwealth of Australia does not accept any legal responsibility for any injury, loss or damage suffered as a result of the use, reliance upon, or interpretation of the information contained in the *Infection Prevention and Control Guidelines*.

Recommended citation

The Royal Australian College of General Practitioners. Infection prevention and control guidelines for general practices and other office-based and community-based practices. 5th edn. East Melbourne, Vic; RACGP: 2022. The Royal Australian College of General Practitioners 100 Wellington Parade East Melbourne VIC 3002 Australia T 03 8699 0414 F 03 8699 0400 www.racgp.org.au ISBN 978-0-86906-383-5 © The Royal Australian College of General Practitioners, 2022 We acknowledge the Traditional Custodians of the lands and seas on which we work and live, and pay our respects to Elders, past, present and future.