

Chapter 7 Management of multi-drug resistant organisms

7.1 Introduction

Multi-drug resistant organisms (MROs) and antimicrobial resistance (AMR) are major and urgent global public health threats. In 2019, AMR was associated with an estimated 4.95 million deaths, disproportionately in low and middle-income countries and an evolving threat that challenges the effectiveness of existing treatments (World Health Organization, 2024c). Patients infected with an MRO often require increased length of stay in hospital and additional diagnostic testing and treatment. Healthcare associated infections (HAIs) with an MRO are an additional cost for the patient and the healthcare system (National Health and Medical Research Council, 2019a).

MROs are defined as microorganisms, predominantly bacteria, that are resistant to one or more classes of antimicrobial agents. Some of the important pathogens for infection prevention and control include but are not limited to:

- Methicillin-resistant *Staphylococcus aureus* (MRSA)
- Vancomycin-resistant *Enterococci* (VRE)
- Carbapenemase-producing Organisms (CPO)
- Carbapenemase-producing *Enterobacterales* (CPE)
- *Candidozyma auris* (*C. auris*)
- Ceftriaxone resistant enteric gram-negative bacilli.

For more information refer to Australian Commission on Safety and Quality in Healthcare [National Alert System for Critical Antimicrobial Resistances \(CARAlert\)](#).

Antimicrobial resistance occurs when bacteria, viruses, fungi, and parasites no longer respond to antimicrobials. As a result, infections become difficult or impossible to treat which increases the risk of disease spread, severe illness, disability, and death. Resistance occurs over time and is accelerated by human activity, mainly the misuse and overuse of antimicrobials to treat, prevent or control infections in humans, animals and plants (World Health Organization, 2023). For information on refer to Australian Government Antimicrobial Resistance – [Surveillance of antimicrobial use and resistance in human health](#).

Tackling AMR in human health necessitates global efforts (World Health Organization, 2024c) focused on several key areas:

- robust infection prevention and control measures
- ensuring equitable access to diagnostics and treatment
- vigilant surveillance to detect emerging trends in AMR
- substantial investment in research and development for the creation of new medicines, diagnostics, and prevention tools.

Infection prevention and control and antimicrobial stewardship (AMS) are important elements in the fight against AMR. AMS is a systematic approach to educate and support healthcare professionals to follow evidence-based guidelines for prescribing and administering antimicrobials (World Health Organization, 2023). Health Organisations are to develop and implement AMS (one of the most cost-effective interventions) to optimise the use of antimicrobials, improve patient outcomes and reduce AMR and HAIs. In addition, application of infection prevention and control principles based on the modes of transmission of microorganisms and knowing how and when to apply is critical. To minimise MRO transmission and infection, health workers are to ensure that infection prevention and control principles, including standard and transmission-based precautions and AMS are

applied. Local risk assessments should be conducted to assess the specific infection prevention measures required for the management of patients that are colonised or have an infection with an MRO.

7.1.1 Summary of MRO prevention strategies

The level of risk and specific type of MROs will differ between facilities, but all health services need to consider the risks of transmission of MROs and implement infection prevention and control strategies according to their specific circumstances. Each local health district/specialty networks should conduct its own risk assessment, identify and manage patients colonised or infected with MROs ([Department of Health Victoria](#)).

An MRO prevention strategy has the following components:

- Surveillance and reporting of MRO acquisition across a facility/network
- Strategies to identify, screen and risk manage potentially infected/colonised patients
- Strategies to reduce the burden of the disease (decolonisation and/or chemoprophylaxis; public health interventions in communities)
- Strategies to reduce person-to-person transmission, including infection prevention and control measures such as standard precautions (hand hygiene, personal protective equipment, cleaning, disinfection) and enhanced infection prevention and control measures (transmission-based precautions, cohort formation, isolation, screening, environmental sampling).

7.2 Risk factors for MRO acquisition

The following are risk factors for MRO acquisition:

- Overseas travel and accessing healthcare outside Australia
- Previous and/or prolonged hospitalisation, including in Australia
- Antimicrobial treatment, particularly prolonged and/or broad-spectrum exposure
- Comorbidities (for example, acquisition of other MROs, chronic wounds, chronic liver disease, immunocompromise including hematopoietic cell transplant, cerebrovascular disease)
- Invasive procedures (exposure to medical devices, ICU admission, mechanical ventilation, dialysis, or endoscopy within the last three months)
- Transfers between healthcare facilities with known outbreaks within Australia.

7.3 Strategies to prevent MRO transmission

Strategies should include implementation of quality improvement strategies, infection prevention and control measures, surveillance, monitoring, auditing and reporting to the appropriate clinical governance body within the organisation. The presence of a quality improvement system is essential to an infection prevention and control program and can effect change and drive continuous improvement in the prevention of infection. For more information refer to NSQHS [Preventing and Controlling Infections Standard](#) and [NSW Aboriginal Health Plan 2024-2034](#).

7.3.1 Standard precautions

Standard precautions are to be applied to the management of all patients and the healthcare environment. For more information on standard precautions refer to Chapter 5 Risk mitigation.

As per the [National Safety and Quality Health Service Standards](#), Health Organisations are to have a process in place to apply standard and transmission-based precautions that are consistent with the [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#).

7.3.2 Transmission-based precautions

Transmission-based precautions are applied in addition to standard precautions. The aim of transmission-based precautions is to reduce further transmission opportunities that may arise due to the specific route of transmission of a particular microorganism (National Health and Medical Research Council, 2019a). A decision to implement transmission-based precautions should be based on the type of microorganism, mode of transmission and patient risk factors including symptoms (wet or dry symptoms), vulnerability and other cognitive or behavioural factors.

Based on patient risk factors, type of MRO and level of contact, the following components of transmission-based precautions are recommended:

- Communication
 - alerts (infection prevention and control flag) in the patient record and other patient information systems
 - communication and education to patients, visitors, family and carers or participants in care
 - signage on the door/entry to patient zone consistent with the alert
 - communication of patient MRO status when care is transferred within or between service providers or facilities.
- Patient management
 - appropriate patient accommodation (single rooms with ensuite where available, or cohorting patients with the same MRO if required (refer to Chapter 6 Transmission-based precautions for more information)
 - minimising patient movement and transfer within and between facilities where practical
 - dedicated patient care equipment where practical
 - use PPE based on risk assessment
 - provision of hand hygiene and personal hygiene opportunities to patients.
- Environment
 - enhanced cleaning and disinfection of the environment and shared equipment (for example, increased cleaning of high-touch areas, use TGA approved with claims against pathogen of concern, 2-step, or 2-in-1 step cleaning and disinfection process).
- Other
 - apply precautions until the patient is discharged or clearance for the target organism has been achieved
 - process for monitoring compliance of components, feedback and any actions required (for example, audits).

7.3.3 Risk assessment on patient placement

Health Organisations should consider patient specific risk factors that may increase the dispersion of microorganisms when deciding on patient placement. The management of MROs in an acute setting may differ from settings where low acuity care is provided, or settings that may be equivalent to home based accommodation (for example, residential aged care facility).

The following patients may require transmission-based precautions:

- inability to maintain personal hygiene
- the presence of discharging wound(s) that cannot be adequately covered
- the presence of diarrhoea or faecal incontinence
- the presence of enterostomies (particularly for enteric organisms such as VRE, CPE/CPO)
- colonisation with MRSA and acute respiratory infection
- catheterised or incontinent patients with MRO colonisation of the urinary tract

- high skin shedding conditions.

Additional considerations should include the cognitive and behavioural status of patients. For example, the presence of delirium, confusion, encephalopathy and/or behaviours that may increase risk of transmission or inability to comply with directions.

Based on the risk assessment patients can:

- be cohorted with other patients with the same MRO or managed with standard precautions in consultation with infection prevention and control team and documented. Patients with different MROs are not to be cohorted
- visit hospital courtyards and public areas within hospital grounds
- use gym and therapy areas, ensuring hand hygiene before and after contact with gym equipment. Reusable equipment to be cleaned after every patient use. For specific advice on some MROs, such as CPE/CPO or *C. auris*, contact infection prevention control for advice
- MRSA colonised patients with risk factors for transmission (above) can be considered for MRSA load reduction.

In non-acute care settings, MRO patients without any risk factors for cross transmission may participate in group activities as required. Hand hygiene with alcohol-based hand rub prior to group activities or upon leaving their room location is recommended for all residents/patients whether they are known to have MRO colonisation or not. All equipment must be cleaned and disinfected before and after use.

Refer to figure 19 Patient placement guide for MRSA and figure 20 Patient placement guide for VRE below for more information (adapted from [Bed Management Toolkit for infectious diseases and multi-resistant organisms, 2022, Government of South Australia](#)).

Figure 19 Patient placement guide for MRSA

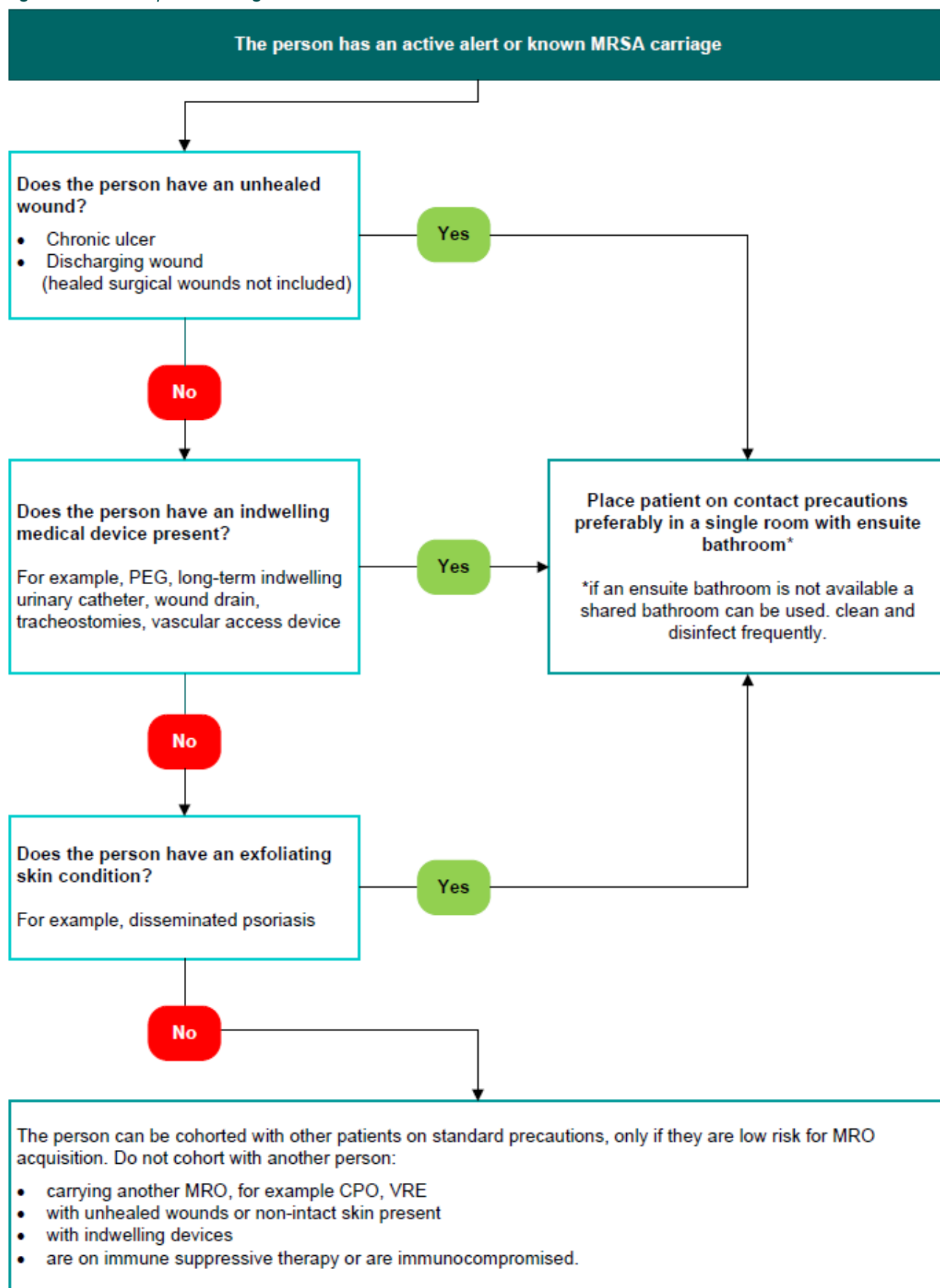
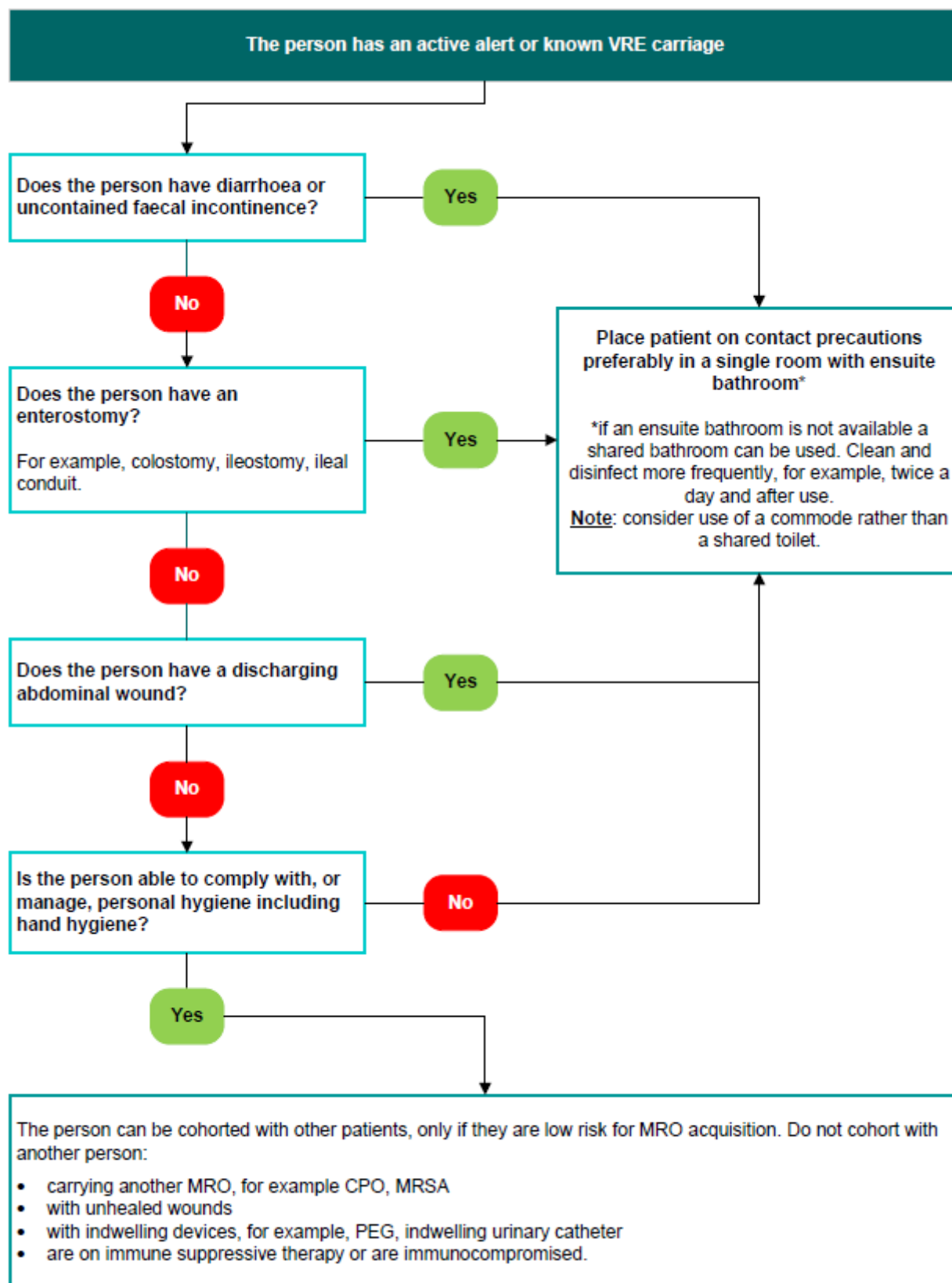


Figure 20 Patient placement guide for VRE



7.3.4 Visitors

Visitors should comply with hand hygiene requirements. Visitors to patients with an MRO should be discouraged from visiting any other patient on the same day.

Visitation should be strictly monitored until the risk is clarified. Local procedures in consultation with infection prevention and control and infectious diseases should be developed for where a parent or a carer needs to remain with the patient (due to age, cultural reasons, end of life, dementia, mental health reasons).

Visitors are not routinely required to use PPE, unless exposure to body substances is anticipated. If visitors are required to wear PPE, education must be provided on hand hygiene as well as donning, doffing and disposal of PPE.

Depending on the age of the visitor and patient's condition, a visitation risk assessment should be made in consultation with local infection prevention and control team along with open communication with stakeholders involved. The risk assessment should consider the following:

- **Infants** – Babies aged less than one year do not have fully developed immune systems. Visitation should be based on a risk assessment and discussion with relevant healthcare professionals
- **Toddlers** – If visiting should be accompanied by an adult to ensure that both the patient and the child are kept safe
- **Children aged 3 to 6 years** – Children in this age group should always visit with an adult and be always supervised.

7.4 Antimicrobial stewardship

Effective antimicrobial stewardship (AMS) promotes the appropriate use of antimicrobials, improves patient outcomes, and reduces the risk of developing antimicrobial resistance (AMR). Along with infection prevention and control, hand hygiene and surveillance, AMS is a key strategy in preventing AMR and decreasing preventable infections ([ACSQH Antimicrobial Stewardship](#)). AMS governance involves establishing systems within Healthcare Organisations to ensure the safe and appropriate use of antimicrobials. This is a crucial aspect of clinical governance and is guided by national / clinical standards. Key elements include leadership, accountability, policies, and resources. Effective AMS governance is essential for improving patient outcomes, reducing harm, and preventing antimicrobial resistance. Senior management, pharmacy and medical staff must provide leadership and support for AMS programs.

NSW Health Organisations are required to have an AMS program, policy and antimicrobial formulary restrictions that support a continuous improvement strategy to reduce inappropriate antimicrobial use and the emergence of AMR. These requirements are outlined in the National Safety and Quality Health Service (NSQHS) Standard for [National Standards Preventing and Controlling Infections](#).

The use of antimicrobial agents to prevent and treat infections must be considered judiciously, using the six essential strategies for effective antimicrobial stewardship:

1. Providing access to and implementation of clinical guidelines consistent with current evidence and [Therapeutic Guidelines](#). Selection of antimicrobials based on local antibiograms which reflect susceptibility patterns.
2. Ensure a formal referral service is in place for antimicrobial advice when clinically indicated or if required for use of restricted antimicrobials.
3. Review of antimicrobial prescribing with intervention and direct feedback to prescribers.

4. Implementation of point-of-care interventions to target inappropriate prescribing of antimicrobial use (for example, intravenous to oral switch, and dose optimisation).
5. Monitor performance of antimicrobial prescribing by collecting and reporting unit or ward-specific data, auditing antimicrobial use, and using the [National Quality Use of Medicines Indicators for Australian Hospitals](#).
6. Ensure the clinical microbiology laboratory uses selective reporting of susceptibility testing results that is consistent with current endorsed [Therapeutic Guidelines](#) on antimicrobial usage and provides infectious diseases and infection prevention and control practitioners with access to susceptibility results.

The AMS Clinical Care Standard provides guidance to clinicians and health service managers on delivering appropriate care when prescribing antimicrobials. The AMS Clinical Care Standard includes [eight quality statements](#) and a [set of indicators](#) for safe and appropriate care.

Investment in education, relationships with other Health Organisations, and the provision of support networks for health workers may assist continuous improvement strategies for AMS. The effectiveness of the program should be reviewed periodically by the multidisciplinary committee that oversees AMS within the organisation. For more information refer to CEC [Antimicrobial Stewardship](#), [NSQHS Standard for Preventing and Controlling Infections](#) and the [Antimicrobial Stewardship Clinical Care Standard](#).

7.5 Environmental cleaning and disinfection for MROs

Environmental reservoirs for MROs are an important factor in HAI transmission. Environmental cleaning is essential in decreasing the spread of microorganisms, including MROs. Routine environmental cleaning should include cleaning of the patient environment daily, this includes frequently touched areas, surfaces and patient care equipment.

The use of disinfectants is recommended as part of terminal cleaning following an MRO or infectious disease. Routine daily cleaning and terminal cleaning are recommended for patients managed under transmission-based precautions. While employing a cleaning program the following should be considered:

- frequently touched surfaces in high-risk and extreme risk units should be cleaned at least twice daily
- for cleaning to be effective, audits of cleaning schedules and cleaning need to be undertaken regularly, with prompt feedback to key stakeholders including report to infection prevention and control committees, patient safety and work health and safety
- prompt corrective action arising out of audits as required to be escalated and reviewed at relevant committees
- functional areas and cleaning schedules should be reviewed yearly to ensure all extreme risks and high risks are cleaned adequately
- a review of the cleaning program should be conducted every 2 years to include audit schedule, audits, corrective actions, and training of environmental services staff
- provide education, documentation and competencies for all staff who attend to discharge cleans.

For more information refer to NSW Health [Cleaning of the Healthcare Environment](#) and [Standard operating procedures](#).

The wet environment which includes faucets/taps, sinks, toilets and plumbing infrastructure within the healthcare environment presents unique challenges to infection prevention and control. Wet surfaces provide the solid-liquid interface that enables biofilm formation (Donlan, 2002). Biofilms

have been proven to harbor MROs. Waste material disposed into sinks and drains potentially provides the nutrients necessary for the formation and maintenance of biofilms which function as a reservoir for resistant organisms (Grabowski et al., 2018). As such it is crucial that environmental contamination and subsequent transmission of MROs are prevented by optimal infection prevention and control measures such as:

- dedicate clinical hand washing sinks for hand hygiene purposes only
- regular cleaning and disinfection of the environment including sinks, faucets/taps, toilets
- perform a risk assessment of all water systems and water-containing equipment
- avoid in-hospital decorative water features (water walls, reflecting pools, fountains, water bubblers)
- preventative maintenance program and schedule for all bowl and pan washer disinfectors and hand washing sink drains
- preventative maintenance for handwashing sinks should be assessed, and local processes should be followed for high-risk settings including haematology, oncology, ICUs, burns units or where outbreaks have occurred.

7.6 *Clostridioides difficile* infection

Clostridioides difficile (or *C. difficile*) is not an MRO, however given that the risks associated with *C. difficile* infection are like MROs, *C. difficile* will also be considered within the scope of this section.

Clostridioides difficile is an anaerobic, spore-forming, gram-positive bacterium typically associated with gastrointestinal disease. *C. difficile* spores are resistant to many disinfectants and antimicrobial agents used in healthcare settings. *C. difficile* may produce toxins that cause mild to severe gastrointestinal symptoms. *Clostridioides difficile* infection (CDI) or associated diarrhoea is often linked to prolonged and unnecessary use of antimicrobial therapy.

C. difficile is also common in the natural environment and in healthcare environments, and it can be spread between individuals through direct or indirect contact.

Table 36 Recommended measures for the prevention and control of CDI

Patient placement	Symptomatic cases are considered infectious until 48 hours after the last episode of diarrhoea. The duration of asymptomatic carriage and presumed ongoing shedding is unclear. Placement of patients with <i>C. difficile</i> infection should be based on risk assessment (patient with diarrhoea from <i>C. difficile</i> infection is infectious while symptoms persist) followed by prioritisation of the seriousness of the infection and any competing patient needs (does the patient have factors that would increase the risk of transmission?). Single room with ensuite is preferred while patient has diarrhoea. If there are a limited number of single rooms, it is recommended that patients with faecal incontinence or severe diarrhoea be prioritised to reduce the likelihood of transmission to other patients, and the individual should not share a room or bay with an immunocompromised individual and must have a dedicated toilet or commode. Confirmed cases (based on microbiological results) may cohort, if necessary, with other patients with <i>C. difficile</i> infection but take into consideration other isolation requirements such as MROs.
---------------------------------	--

Always apply standard precautions	Hand hygiene as per the NHHI Hand Hygiene requirements. Hand washing is required for any unprotected exposure (for example, touching the patient or their environment without gloves on) or direct soiling of the hands, then thorough washing with soap and water should be performed. Alcohol-based hand rubs can be used after removal of gloves if hands are not visibly soiled. Clean equipment and the environment using a cleaning agent, detergent and sporicidal agent or buffered sodium chloride, chlorine dioxide or activated hydrogen peroxide (see table 37). Patients with CDI shed large numbers of spores in their faeces which can cause widespread contamination of the environment and can lead to transmission. Clean and disinfect all horizontal surfaces and all frequently touched surfaces within the patient area, including toilet, bathroom, ensuite, daily and on discharge or transfer. Shared patient equipment must be cleaned and disinfected after each use.
Apply contact precautions in addition to standard precautions	Contact precautions (in addition to standard precautions) should remain in place for at least 48 hours after diarrhoea has completely resolved. Health workers providing care involving extensive patient contact should wear a single-use long-sleeved gown or apron (based on risk assessment) and gloves. Contact precautions should be re-instituted if diarrhoea reoccurs.
Education	Provide health workers with education on CDI prevention and management. Provide relevant clinical staff with education on antibiotic prescribing, standard and transmission-based precautions. Audit and provide feedback on hand hygiene compliance, cleaning and disinfection and appropriate PPE use.
Patients and visitor education	Provide information on CDI prevention and management strategies. Educate patients and visitors on the importance of hand hygiene. Advise visitors who are assisting in patient care to wear appropriate PPE and how to don and doff safely.

For more information on management of patients with CDI refer to [Monitoring Clostridioides difficile infection \(CDI\) in Australia](#), Australian Commission on Safety and Quality in Healthcare- [Australian Guidelines for the Prevention and Control of Infection in Healthcare and Infection prevention and control](#), CEC Infection prevention and control Practice Handbook Chapter 6 Transmission based precautions and [C. Diff resources](#).

See table 37 below for required concentrations and contact times for sporicidal efficacy for the agents commonly used in healthcare. Follow manufactures instructions and local procedures when selecting these agents.

Table 37 Sporidical cleaning agents – concentrations and contact times

Agent	Concentration	Minimum contact time	Sporidical efficacy	Key notes
Sodium hypochlorite	5000 ppm (0.5%)	10 minutes	≥6 log reduction (meets TGA/ARTG)	Prepare fresh daily; unstable; 1000 ppm (0.1%) for 5–10 min achieves ~4 log only.
Sodium hypochlorite	1000 ppm (0.1%)	5–10 minutes	~4 log reduction (not TGA/ARTG claim)	May be acceptable for routine cleaning; not for full sporidical claim.
Chlorine dioxide	1000–2000 ppm (per label)	5–10 minutes	≥6 log reduction (per manufacturer)	Use as per manufacturer's instructions and ARTG listing.
Activated hydrogen peroxide	0.5–1.4% (per label)	5–10 minutes	≥6 log reduction (per manufacturer)	Use as per manufacturer's instructions and ARTG listing.

Additional Notes:

Only products listed on the ARTG as “sporidical” can be promoted for this use.

For *C. difficile*, ensure clear communication to cleaning staff when sporidical cleaning is required, especially if it differs from routine cleaning methods.

Always follow local infection prevention guidelines and manufacturer instructions for dilution, application, and safety.

Storage and Stability:

Sodium hypochlorite (bleach) solutions are unstable and lose potency rapidly, especially when diluted, exposed to light, heat, or air.

- Prepare diluted sodium hypochlorite solutions fresh daily.
- Store in a closed, opaque container at room temperature, away from direct sunlight and heat sources.
- Do not use solutions older than 24 hours unless the manufacturer provides validated stability data for longer storage.
- Label all prepared solutions with the date and time of preparation and expiry.
- Check for visible changes (for example, loss of chlorine smell, discoloration); discard if present.

Other Agents

Chlorine dioxide and activated hydrogen peroxide:

- Follow the manufacturer's instructions for storage and shelf-life.
- Many commercial products are more stable but still require protection from light and heat.
- Do not use beyond the expiry date on the packaging.

Where the chosen sporicidal agent or method for environmental cleaning and disinfection differs from the standard cleaning or disinfection methods used within the Health Organisation, the Health Organisation must have clear procedures in place to communicate the requirement for sporicidal disinfection (both routine and terminal) to environmental services staff. This ensures that all health workers are aware of when and how to implement sporicidal cleaning protocols, reducing the risk of transmission and ensuring compliance with infection prevention standards.

7.7 Screening and surveillance

Before implementing a screening and surveillance program Health Organisations need to consider factors such as the local prevalence of specific MROs, the likelihood a patient may be colonised with a MRO, the type of facility, the consequences of transmission and available resources for screening and how to manage the identified MRO status of the patient.

MRO surveillance strategies should include collection, analysis, reporting, and use of surveillance data to help identify and respond promptly to identified infection risks. Screening results, as well as any results obtained through diagnostic testing, should be used to inform subsequent infection prevention and control actions.

As part of risk identification, any MRO positive pathology report should clearly indicate the presence of a specific MRO. If unclear on the interpretation of pathology results or required infection prevention and control action, clinicians should promptly raise queries with the local clinical microbiology service or infection prevention and control unit for interpretation and guidance.

Preoperative screening for *Staphylococcus aureus* including MRSA and methicillin sensitive *Staphylococcus aureus* (MSSA) is recommended for select elective procedures such as:

- Open cardiac and valve procedures
- Shoulder, hip, or knee joint total arthroplasties (primary or revision)
- Aortic procedures (stent and open)
- Lower limb vascular reconstructions (bypass, endarterectomy)
- Iliac stents (covered stents)
- Haemodialysis catheter insertions.

The decision on this approach should be based on risk assessment, local prevalence and cost benefit analysis.

A major risk factor for acquiring an MRO is overseas travel, especially when medical care or treatment in a healthcare facility is involved. A risk assessment should be conducted at admission to identify people who require screening for specific MROs.

7.7.1 MRO screening

Screening for MROs should align with mandatory clinical indicators at a minimum. There are three categories of MRO screening programs:

Hospital admission screening, organism specific and/or specific area/ward-based screening (for example, extreme risk or high-risk area screening). See Table 38 for more.

Table 38 Risk factors and requirements for admission screening

MRO transmission risk	Is admission screening needed?			
	MRSA	CPE	VRE	<i>C. auris</i>
Any direct overseas hospital transfer	Yes	Yes	Yes	Yes
Received healthcare overseas in the preceding 12 months inpatient or outpatient or residence in an overseas RACF	No	Yes	No	Yes
Admission to an extreme risk rated clinical inpatient area, such as ICU, burns, renal dialysis, haematology, oncology and transplant units	Yes*	Yes*	Yes*	Yes**
Transfers from units in other NSW hospitals or residential care settings	Depends on local infection rate			
Receiving or transferring facility (for example, NICU) with known prevalence or MRO outbreak	Depends on local infection rate			
Presence of a chronic wound or invasive device	Depends on local infection rate			
Other MRO Gram negatives	Depends on local infection rate			

*According to local risk assessment and priorities.

** Any epidemiological link to a known case.

Also refer to the Guidelines on [Surveillance and response for Carbapenemase-producing Enterobacterales \(CPE\) in NSW Health Facilities](#) and [Management and Control of Candida auris in NSW Health Facilities](#).

Admission screening for MROs requires the collection of at least one swab set. Swab set requirements are included in Table 39 Guide to swab set requirements. Seek advice from your local microbiology/laboratory service prior to sampling.

Table 39 Guide to swab set requirements

Microorganism	Specimen(s) required
CPE/CPO	Faeces (preferred) or rectal* and wound, ulcer, transcutaneous exit site(s) or urine (if indwelling or suprapubic catheter is present)
VRE	Faeces (preferred) or rectal* and wound, ulcer, transcutaneous exit site(s) or urine (if indwelling or suprapubic catheter is present)
MRSA	Nose + perineum and wound, ulcer, transcutaneous exit site(s) ± throat
<i>C. auris</i>	Bilateral axilla and groin, transcutaneous exit sites, urine (if indwelling device or suprapubic catheter present)

C. diff	If diarrhoea is present, faecal sample (only loose stool will be tested)
MRAB**	Faeces (preferred) or rectal* and throat or sputum ± wound, ulcer, transcutaneous exit site(s) or urine (if indwelling or suprapubic catheter is present)

*There must be faeces visible on the rectal swab.

**Multi-drug resistant *Acinetobacter Baumannii* based on local prevalence.

Additional note:

MRSA: Pre-moistening of swabs is not required, as evidence shows no improvement in microorganism recovery or sensitivity.

C. auris: Satisfactory recovery is achieved using swabs with transport media.

Key Collection Sites: The success of microorganism recovery is primarily dependent on sampling from the axillae and groin, which may be combined into a single swab.

7.7.2 Ongoing MRO screening in extreme risk areas

Ongoing MRO screening may be necessary in clinical areas including dialysis units, haematology units, oncology units, NICUs and ICUs where there may be a risk of transmission and potential consequences. Screening programs may extend to mum/parent if a neonate is positive. Generally, if a neonate is MRO positive, the parent/s would be considered to also be MRO positive. In the opposite situation, if a parent has known colonisation with an MRO, the neonate would be considered to also be colonised with the same MRO.

Screening should be guided by the same principles as those indicated for admission screening and local infection prevention risk assessments and emerging concerns.

Where a patient is confirmed to be colonised or infected with a MRO, no further surveillance screening (except for clearance screening in the relevant timeframe) is required for that MRO.

7.7.3 MRO screening in non-extreme risk areas

Routine MRO screening should only be done before defined surgical procedures (for example, joint replacement, cardiac bypass). Outside of extreme risk areas, routine MRO screening is not recommended but may be required based on local prevalence, risk assessment, part of contact tracing or in response to an outbreak.

Extended-spectrum beta lactamase-producing organisms are known as ESBLs. Overall, the risk of healthcare associated transmission of ESBLs in adult patients appears to be low and patients colonised or infected with these organisms are to be managed with standard precautions. There is insufficient evidence to apply this advice to the management of children and babies, patients in extreme risk areas (for example transplant units, burns units or neonatal intensive care) or adults in long term care with ESBL colonisation or infection.

For managing ESBL colonisation Health Organisations should conduct a risk assessment based on:

- local prevalence
- mode of transmission
- patient risk factors
- existing standard precautions strategies already in place at a local level, such as, hand hygiene, cleaning of shared equipment and healthcare environment, cleaning audits meeting compliance, and so forth
- risk factors for adverse outcomes resulting from an HAI in other patients in the area or room being considered for patient-placement
- availability of single-patient rooms.

For more information refer to [CDC's Core Infection prevention and control Practices for Safe Healthcare Delivery in All Settings](#), [CDC Infection Control Summary of Recommendations](#) and Practice Handbook Chapter 6 Transmission based precautions.

7.7.4 MRO screening prior to solid organ donation

The transmission of infection from solid organ donor to recipient during solid organ transplant is a rare event (Lumbreras et al., 2001, Cerutti et al., 2006, White et al., 2019). Transmission to the organ recipient is more likely to occur if the donor presents with symptomatic illness at the time of the procedure (Lumbreras et al., 2001) and a MRO is involved.

Blood cultures should be collected and screened if the donor is febrile. Screening should be done by the facility where the donor is receiving care. Results are to be made available to the facilities caring for intended organ recipients as soon as practically possible.

Transplant teams and infectious diseases physicians should consider the following when interpreting donor screening results:

- for donors positive for MRSA and VRE:
 - colonisation with MRSA or VRE, in the absence of infection, does not preclude organ donation
 - Any infection of the potential allograft precludes organ donation
- for donors positive for CPE:
 - donor can be a candidate for organ donation if infection is still sensitive to carbapenem (such as, resistance gene is not expressed)
- if the donor's medical team has determined that the donor has deep-seated MRSA, VRE or CPE infection that does not affect the potential allograft, then the donor's medical team should consult with the transplant team regarding:
 - the viability of treating the donor with appropriate antimicrobial therapy prior to transplant
 - the need to initiate appropriate antimicrobial prophylaxis to the recipient perioperatively
- Blood stream infection may preclude organ donation. Consult with Infectious Diseases.

Guidance for MRO screening in transplant recipients where donor is identified to have an MRO, particularly in the instance of enteric organisms should be at the discretion of treating team and infectious diseases. For more information refer to [Transplantation Society of Australia and New Zealand](#) and [Therapeutic Goods Administration Understanding donor screening rules for human cell or tissue products](#).

7.7.5 MRO screening prior to faecal transplant donation

The use of faecal microbiota transplantation (FMT) has been reported for a variety of indications including severe, refractory, or relapsing *Clostridioides difficile* infection (CDI), and other non-infectious indications. Health Organisations performing FMT should have comprehensive protocols for screening donors. For more information refer to the Therapeutic Goods Administration [Supplying faecal microbiota transplant \(FMT\) products as biologicals](#).

7.7.6 Health worker MRO screening

Routine screening of health workers for MRO colonisation is not recommended. However, in exceptional circumstances in extreme risk areas screening may be considered in consultation with

local infection prevention and control and infectious diseases (ID) team. Health workers who are identified, via screening or diagnostic testing, as being colonised with an MRO should be referred to staff health or infection prevention and control/ID for assessment, treatment, and management, as per local protocols.

7.7.7 Microbial genomics

Microbial genomics or whole genome sequencing (WGS) is the study and application of genome sequencing technologies to characterise and analyse microorganisms. It is a powerful and critical tool for the investigation and management of infectious diseases including MROs in enhancing national and international surveillance and response to infectious diseases. The use of sequencing data has shown to form the basis of robust disease surveillance through rapid pathogen detection identification, and monitoring that ultimately links to information on clinical, demographic, and exposure details ([National Microbial Genomics Framework for Public Health 2025–2027](#)). To achieve maximal health impact, genomic data must be linked to epidemiological and clinical data and that results from genomic data are rapidly disseminated back to 'end users' or even directly accessible. The integration of existing epidemiological networks will enable:

- detection and rapid response to disease outbreaks/cluster
- rapid detection and characterisation of emerging pathogens or new mechanisms of antibiotic resistance.
- proactive and coordinated gathering and sharing of information.

Furthermore, WGS will enable the identification of priority organisms for real-time diagnostics, supporting timely outbreak investigation. Consultation with the Infectious Diseases Service and the Medical Microbiologist with infection prevention and control input of the facility is recommended. Additional guidance can be sought from the CEC as part of the incident management team in the event of an outbreak.

7.7.8 MRO clearance screening

After acquisition of an MRO, patients may be colonised for many months with the same organism. Several observational studies show that colonisation with CPE or ESBL declines over time without intervention (Campos-Madueno et al., 2023, Bonnet et al., 2023). For active decolonisation, the most robust evidence is for MRSA, with insufficient evidence to support routine decolonisation strategies for other MROs (Brehony et al., 2021). However, in high prevalence settings in non-acute care, universal chlorhexidine bathing and intranasal iodophor reduced colonisation with VRE and ESBL (Gussin et al., 2024).

For individual patients, there are some general principles that can be considered for MRO clearance screening. Any clearance program within a health facility requires a risk assessment and consultation with infection prevention and control, infectious diseases and/or microbiology.

There are several key principles. At least 12 months have elapsed since the MRO was last identified in either a screening or diagnostic specimen; and at the time of rescreening, the patient must not have received antibiotics active against the MRO for at least the previous 2 weeks for gram-negative organisms and 12 weeks for *Staphylococcus aureus*. Clearance screening swabs should be done as described in Table 42 and may be performed after re-admission or as an outpatient.

A patient who has been cleared of MRO who subsequently returns a positive culture from either a clinical isolate or a screening specimen should be considered MRO colonised or infected again. For more information refer to Table 42 Recommended clearance program for multi-resistant organisms.

Note: Currently patients colonised with *C. auris* are considered to have life-long colonisation. Patients whose last positive CPE result was more than 12 months prior should have a risk assessment conducted to determine if they may still pose a risk of being colonised.

7.7.9 Audit and validation of screening programs

Health Organisations are to support clinical unit level programs that facilitate quality and safety improvement and performance audit. Where possible and practical Health Organisations are to:

- consider point prevalence survey of the MRO screening program to test the compliance rate of the screening program
- consider single or periodic point prevalence surveys to validate the screening programs in high-risk units
- Recommendation – annual review within facility.

7.8 Alerting and removing alerts

The management of MRO alerts within the Single Digital Patient Record (SDPR) must be overseen by the local infection prevention and control unit or their designated delegate. The process of alerting or removing an MRO flag in a patient's health record is governed by strict protocols to ensure patient safety and prevent transmission.

Minimum requirements for initiating or removing alerts apply across both inpatient and community settings and include comprehensive screening based on risk factors such as recent hospitalisation (domestic or overseas), admission to high-risk clinical areas, or transfer from facilities with known MRO prevalence. Specimen collection must follow defined procedures for each organism, including MRSA, VRE, CPE/CPO, ESBL, and *C. auris*, with documentation and alerting integrated into the SDPR via electronic medical record workflows. For more information refer to Table 40 Requirements for adding and removing MRO alerts in patient record.

The following factors are to be considered when deciding to alert or removing an alert:

- an MRO alert should be removed only if the patient meets the criteria for MRO clearance (see Table 42 Recommended clearance program for multi-resistant organisms)
- if a patient is cleared of an MRO, there is still potential for a patient to recolonise with an MRO, including the previous strain of MRO. If recolonisation is detected, MRO flags should be reinstated
- it is a local decision to use flags or alerts to identify patients with CDI. If alerts are used, the Health Organisation may consider removing alerts on these patients 48 hours after the return of a normal stool pattern. For more information refer to the Australian Commission on Safety and Quality in Healthcare [Surveillance of Clostridioides difficile infection](#).

Table 40 Requirements for adding and removing MRO alerts

MRO	Alerting	Removing alerts
MRSA	Yes	Yes
<i>C. auris</i>	Yes	No
CPE	Yes	Determine locally*
VRE	Determine locally*	Determine locally*

* Determine based on local prevalence.

7.9 MRSA load reduction and decolonisation

For some patients, reducing the colonisation burden of MRSA reduces the risk of post-operative infection with MRSA. Patients undergoing cardiac, or joint replacement surgery and have a positive MRSA screen should be offered MRSA decolonisation. Other patients that may benefit from decolonisation are those who have recurrent skin and soft tissue infections with MRSA. To achieve this, clinicians should consider the feasibility of pre-operative load reduction or decolonisation. In the short term, pre-operative load reduction can be considered for some procedures (See section 7.7 Screening and surveillance for more details) whereas decolonisation should be used to reduce the risk of recurrent skin infection.

Table 41 Example of a preoperative MRSA load reduction (to be undertaken in the hospital or home environment)

Pre-operative load reduction for adults positive for MRSA	
Duration: Five days prior to surgery and continue after surgery if required. Ideally the full regimen should be completed prior to surgery. If this is not possible, administer as many doses as possible pre-operatively then complete the regimen post-operatively as needed.	
Hair and body	Use antimicrobial body wash (2% aqueous chlorhexidine or 1% Triclosan) when showering. Leave body wash in place for at least 3 minutes before rinsing well. After shower, dry with clean towel or use daily application of non-rinse aqueous 2% chlorhexidine wipes. Towels should be changed daily.
Nostrils	Treat with 2% mupirocin, two-three times daily (if resistance to mupirocin demonstrated, seek specialist ID advice). Apply inside nostril with cotton bud or swab (no further than 2cm deep) and then discard cotton bud. Repeat with new cotton bud or swab for the other nostril. Press nose with thumb and forefinger, spread in the nostril using a circular motion.
Treatment for fomites and inanimate objects	
Bed linen	Linen should be changed daily.
Personal clothing	Clean clothing, underwear and socks should be worn after showering.
Frequently touched surfaces	In hospital -Wipe surfaces such as bed rails, door handles and bedside equipment daily using a clean and disinfectant wipe used in the facility. Discard the wipe after use. At home – wipe surfaces such as benches in kitchen areas and bathrooms and door handles daily using a clean cloth and detergent

Source: Adapted from Hunter New England Local Health District, Policy Compliance Procedure – Management of Multi-resistant Organisms and Clostridium difficile (2014) and HICSIG – Healthcare Infection Control Special Interest Group. Patient MRSA preoperative local reduction instructions (2015).

Table 42 Recommended clearance program for multi-resistant organisms

Organism	Action to take	Criteria	Duration	Comments
<i>C. auris</i>	Patients are not cleared and continue to be managed under transmission-based precautions	There is not sufficient available evidence to guide clearance screening	Entire and subsequent admissions	Current evidence suggests that patients remain colonised for many months
CPE	Based on infection prevention and control risk assessment	Patients with no risk factors who are readmitted to a hospital more than 12 months since a positive result of CPE colonisation.	Patient colonised with CPE cannot be considered cleared within 12 months of a positive result	CPE clearance must be locally confirmed with infection prevention and control, ID and where possible microbiologist
ESBL	This guidance applies to paediatric population	Clearance is possible but depends on: A case-by-case risk assessment by Infection prevention and control team based on antibiotic usage, presence of medical devices such as drains, catheters, or other invasive devices and presence of underlying health conditions such as chronic illnesses may delay clearance.	Generally, three consecutive negative screening swabs, taken at least 48 hours apart, to confirm clearance of ESBL colonisation, however health facilities are to consult with Infectious Diseases on any specific requirements	Clearance is more likely in patients with no underlying immunosuppression or chronic conditions. Even after clearance, infection prevention and control precautions may still be applied during hospital readmission depending on risk assessment.
MRSA	Based on infection prevention and control risk assessment	Clearance could be considered if all the following are present: More than 3 months elapsed time from the last positive specimen	At least two negative swab sets, collected from the same body sites, on the same day at different times	Some facilities may apply clearance program for selected group of patients (for example, prior to high-

		• All wounds healed, no indwelling medical devices present • No exposure to any antibiotic or antiseptic body wash for at least 2 weeks prior to screening • No exposure to specific anti-MRSA antibiotic therapy in the past 3 months.	or on separate days (such as, the two swabs sets are “separated by time”).	risk elective cardiac or prosthetic implant surgery) along with decolonisation
VRE	Based on infection prevention and control risk assessment	VRE clearance is deemed possible when ALL of the following criteria are met: • Any infection caused by VRE has resolved • More than three months have elapsed since the last positive specimen • The patient must have ceased all antibiotics (intravenous or oral) for at least two weeks before specimens are collected • A period of at least 6 months free from hospitalisation (acute episode) and any invasive/indwelling devices • Not admitted to an extreme risk area.	Three consecutive negative stool samples or rectal swabs separated by a minimum period of one week per negative specimen. Clearance can also be considered in a patient who has a history of a single positive VRE faecal, or rectal culture followed by multiple negative cultures over a period of 6 months or more.	Clearance for most VRE colonised patients is not recommended as it is often not sustained. VRE colonisation may persist for prolonged periods (years) and screening cultures may not detect low-level colonisation, so negative rectal or stool cultures may not reflect true clearance.

7.9.1 MRSA decolonisation for ongoing carriage

MRSA decolonisation should be limited to colonised patients who have completed treatment for a symptomatic MRSA infection but remain at risk of recurrent symptomatic infection. Decolonisation for MRSA may not be effective if the individual (or other household members if decolonisation is being carried out at home) has an active chronic skin condition or is unwilling or unable to participate in the regimen.

MRSA decolonisation should be considered if **all** the following criteria are met:

- no antibiotics or antiseptics have been used in the preceding 2 weeks
- the isolate is susceptible to the decolonisation regimen
- there are no invasive devices present
- all wounds or ulcers have healed
- there are no exfoliative skin conditions
- there is capacity to follow a MRSA decolonisation regimen
- treatment for MRSA infection has been completed, and decolonisation is expected to prevent recurrent infection.

An example regimen is included in Table 43 Example of MRSA load reduction.

Current evidence indicates that MRSA decolonisation regimens have variable efficacy for long term elimination of MRSA and efficacy is dependent on several patient factors, including readmission to hospital. Information should be provided to patients and their carers regarding the expected efficacy of MRSA decolonisation prior to the commencement of any regimen. Where patients and/or carers are to carry out a MRSA decolonisation regimen, clear instructions should be provided to these individuals by the treating clinician.

After the decolonisation regimen is completed, the individual should be screened to determine if MRSA clearance has been achieved.

Screening procedures can be worked up locally but at a minimum should address:

- the time-points for screening
- the specimen type(s) required
- the involvement of primary care follow-up
- alternative strategies to be employed if decolonisation attempts are unsuccessful
- if a health worker, workforce management during and after decolonisation.

Repeated decolonisation attempts can lead to the emergence of resistance to the antimicrobial agents used in the regimen. Therefore, further advice from a microbiologist or an infectious diseases physician should be sought if MRSA colonisation persists after two attempts at decolonisation.

Table 43 Example of MRSA load reduction for ongoing carriage

Preparation of the individual
- Remove all body piercings for several days prior to commencing decolonisation regime and keep piercings out for the duration of decolonisation. Where piercings cannot be removed, the area around and underneath of any item must be carefully cleaned as much as possible. - Clean earrings and other piercing elements with soap and water and store dry.
Preparation of the household
- Replace old toothbrushes, razors, opened roll-on deodorant, skin adhesive tapes, skin creams and solutions, pumice stones, sponges, make up brushes, creams and implements. - Discard or hot wash all fluffy toys. - Discard magazines, newspapers and other clutter. - Wash hairbrushes and combs, nail files, plastic toys, and clippers in the dishwasher or discard. - Change bedsheets, pillowcases and towels each day of the treatment. - Wear clean clothing after shower. - Clean frequently touched surfaces each day using a clean cloth (disposable) and detergent, discard the cloth after use. - Ensure all members of the household have their own towels.
Treatment for adults positive for MRSA (and their household contacts)
- Hair and body: Use 1% Triclosan OR 2% aqueous chlorhexidine daily for 5 days. Apply to skin for at least three minutes and then rinse off. Avoid use of other soaps and body washes during this time. Usual shampoo and conditioners are suitable for use. - Nostrils: Treat with 2% mupirocin, twice daily for a week. Apply inside nostril with cotton bud or swab. Discard cotton bud after use. Repeat with new cotton bud or swab for the other nostril. Spread in nostril by squeezing nose with thumb and forefinger and rubbing together in a circular motion. If the colonising MRSA strain is mupirocin resistant, seek further advice from a microbiologist or infectious diseases physician. - Dentures: Remove dentures early evening and clean with mild soap and water or denture paste. Immerse in a denture cleaning solution every night for 1 hour or as long as prescribed. - Ask patient to keep a record of treatment application and bring this information with them when attending the hospital, regardless of whether they completed the 5 days of treatment.
Treatment for non-preterm neonates positive for MRSA
- Body: Treat with 1% chlorhexidine cream daily from day 1 (day of birth) until day 3. - Wipe with water then apply by lightly smearing chlorhexidine cream. - Body: Treat with mild soap and chlorhexidine on alternate days after day 4. - Wash with mild soap and then apply by lightly smearing chlorhexidine cream.

Treatment for household items

- Disinfect reused personal items with antibacterial wipes several times during the decolonisation period.
- Clean and disinfect the shower floor and/or bathtub daily with a sodium hypochlorite solution/bleach-based cleanser.
- On days 2 and 5 of treatment, clean the house well (especially the bedrooms and bathrooms). Clean dust off all surfaces then vacuum clean floor surfaces and soft furnishings. Wipe over all frequently touched surfaces with detergent wipes. Wash vinyl/leather covered furniture with warm soapy water and dry with a clean towel.

Pets

- Dogs and other companion animals can be colonised with the same strains of *S. aureus* without showing any signs of infection.
- Wash animal bedding in hot wash with laundry detergent and dry in the sun or replace.
- Wash the animal at least once with an antiseptic solution.

Source: HICSIG - Healthcare Infection Control Special Interest Group. Patient MRSA preoperative local reduction instructions (2015). Hunter New England Health Pathways. Recurrent Staphylococcal Infections. [Online] 2015.

7.10 Communication about MROs

Each Health Organisation is to ensure that clinicians inform and communicate with patients and their carers affected by MRO colonisation or infection and establish an understanding of the necessary infection prevention and control precautions required. For more information refer National Standards - [Partnering with Consumers Standard](#).

Where screening or clinical diagnostic testing has indicated MRO colonisation or infection, the treating medical officer, or their delegate, is to advise the patient of this result. This includes providing the opportunity to discuss and determine an appropriate management plan and address any concerns the patient, or their carer, may have about MRO colonisation and its potential impact on their health and wellbeing.

The Health Organisation should ensure that MRO colonised or patients with infection are provided with easy-to-understand written and verbal information on the MRO. At a minimum, this should contain the following information:

- What is an MRO?
- What MRO does the patient have?
- What is the difference between colonisation and infection?
- How is the MRO transmitted between individuals or from the environment?
- How long will the MRO be carried?
- How can the patient assist in limiting the spread of the MRO?
- Can the MRO be treated?
- Are other individuals being at risk of getting the MRO from the patient?

- What infection prevention and control precautions are required as an inpatient, such as transmission-based precautions, visitor policies and any movement restrictions for patient and health workers?
- What infection prevention and control precautions are required after discharge (such as, at home)?
- What information should the patient share about their MRO colonisation and/or infection (for example, other healthcare providers including transport agencies)?

Refer to Australian Commission on Safety and Quality in Health Care [Infection prevention and control resources for consumers](#) for patient information brochures. Where a Health Organisation has specific local MRO concerns, the Health Organisation may prefer to publish and distribute their own patient information. In the event of an outbreak or increasing endemicity, a Health Organisation must provide rapid response communication and feedback to affected patients and their carers.

If a patient is discharged home before the MRO result is known, as per the Open Disclosure policy directive, there should be a local procedure to ensure communication with the patient - generally the treating team. This should be documented in their notes as they will be flagged when/if they come into hospital again. MRO colonisation should also be included in any discharge or referral information for patients GP practice or referring specialist or clinics as part of communications provided by clinicians.

7.10.1 Transporting a patient with an MRO

The transport of a patient within a hospital, between hospitals or place of residence is not to be delayed by MRO colonisation or infection and should be guided by clinical need and urgency.

Transport agencies are to, as a minimum, exercise standard precautions and, where possible, contact precautions during the transfer and transport of a patient with an MRO based on risk assessment. If this is not possible, refer to local procedures and/or seek advice from the local infection prevention and control team for alternative arrangements.

It is critical that the transport agency adheres to all elements of standard precautions, particularly hand hygiene and environmental cleaning, and implements measures to increase the spatial distance if multiloading between patients during transport.

The facility booking transport must notify the transport agency and receiving Health Organisation of the patient's status and type of MRO prior. If an MRO is identified after the transfer, the booking facility is responsible for informing the receiving Health Organisation of this new information. The receiving facility is responsible for conveying this new information to the patient and their family or carer.

Patients should be offered products to wash/clean their hands enroute and good hand hygiene practises encouraged and promoted.

The following general principles should be followed while transporting a patient with a known MRO status:

- Patient transport should not be delayed because of MRO status
- Patient can be multiloaded (transported with another patient) provided:
 - Patient Transport Service employees maintain standard precautions and, where possible, contact precautions during the transport if required
 - After risk assessment of patient's symptoms, for example, patients with low risk of organism dispersal

- Can be transported with a non-infectious patient after risk assessment conducted
- Patients perform hand hygiene with an alcohol-based hand rub when they enter and leave the transport vehicle.

7.11 Outbreak management

The detection, prevention and management of MRO require a coordinated approach in any Health Organisation, and especially in facilities with patients requiring complex and chronic care. Local transmission or an outbreak is defined as two or more cases of an MRO that are genetically related.

This may be from patient-to-patient, or environment-to-patient. If local transmission is suspected or confirmed, action should be taken immediately to prevent further transmission. Confirmation by whole genome sequencing should not delay outbreak management. Each Health Organisation must have written procedures that address outbreak management for common communicable infections and MROs.

Refer to Surveillance and Response to Carbapenemase-Producing Enterobacterales in NSW Health Facilities, [Management and Control of Candida auris in NSW Health facilities](#) and [Triggers for escalation following detection of infection outbreaks or clusters](#) guidelines for more information. Additionally, the outbreak management principles outlined in Chapter 8 Outbreak management, should be adhered to if an MRO outbreak occurs.

Note: The detection is poor when cohort screening is performed soon after exposure to a positive cohort. In some circumstances (for example, outbreaks), a second sample collection may need to be considered at a later point to improve case detection.

7.12 Precautions for non-acute inpatient settings

The precautions required to prevent MRO transmission in these settings should be based on a risk assessment which should address the following questions:

- are invasive procedures performed?
- is direct physical contact with blood, body substances, tissue, infectious materials, or surfaces/equipment anticipated?
- do patients have open wounds, invasive devices or immunocompromised?

Additional factors such as duration of appointment, age, setting, patient's/client's compliance with infection prevention and control requirements, faecal or urinary incontinence, available resources or outbreak incidents may impact on the level of risk and should be considered when conducting a risk assessment.

Hand hygiene is to be adhered to by all health workers who have contact with patients and/or their surroundings. All patients/clients and carers should be encouraged to perform hand hygiene when they attend community health outpatient clinics to minimise environmental contamination.

Standard precautions are adequate for activities where health worker contact with the patient is minimal.

Non-critical reusable/shared clinical equipment should be cleaned with a neutral detergent and disinfection should be based on risk assessment.

Any equipment that is taken into multiple client's homes should be cleaned and dry before returning to the car and used at the next client's homes (such as the baby scales or length measurer that the baby lays on).

In case of loan equipment used for patients with an MROs, those items are to be reprocessed as per local procedures before re-distribution.

Frequently touched surfaces are to be cleaned between patients/clients with neutral detergent. Disinfection with an approved disinfectant (or dual purpose) may be required in circumstance where blood or body substance exposure anticipated.

The cleaning and disinfection process should be as per local protocols and be based on the risk assessment.

Refer to Figure 21 for additional advice on risk assessing for MRO transmission in community settings.

Figure 21 Risk assessing for MRO transmission in community settings

LOW RISK

- Non-invasive procedures and activities are performed
- No direct physical contact with blood, body substances, tissue, infectious materials or surfaces/equipment is anticipated
- At risk or MRO patients/clients/families may be seen by the service

- Implement standard precautions
- Clean shared equipment and frequently touched surfaces between patients
- Routine daily cleaning of clinics

MODERATE RISK

- Minor invasive clinical procedures may be performed. For example, venepuncture or intramuscular injections
- Direct contact with blood, body substances, tissue, infectious materials or surfaces/equipment may occur
- At risk or MRO patients/clients/families may be seen by the service

- Implement standard precautions
- Implement transmission-based precautions based on risk assessment during invasive procedures
- Clean frequently touched surfaces
- Ensure clinic layout minimises environmental contamination and facilitates effective cleaning
- Routine daily cleaning of clinics - consider terminal cleaning for outbreaks

HIGH RISK

- Invasive procedures are routinely performed
- Direct contact with blood, body substances, tissue, infectious materials or surfaces/equipment is anticipated
- At risk or MRO patients/clients/families are regularly seen by the service

- Implement standard precautions
- Implement transmission-based precautions based on risk assessment
- Clean and disinfect shared patient care equipment such as examination bed or trolley, bladder scanner, BP machine
- The clinic room should be cleaned and disinfected on a regular basis
- Clean frequently touched surfaces
- Ensure clinic layout minimises environmental contamination and facilitates effective cleaning.
- Consider terminal cleaning for outbreaks