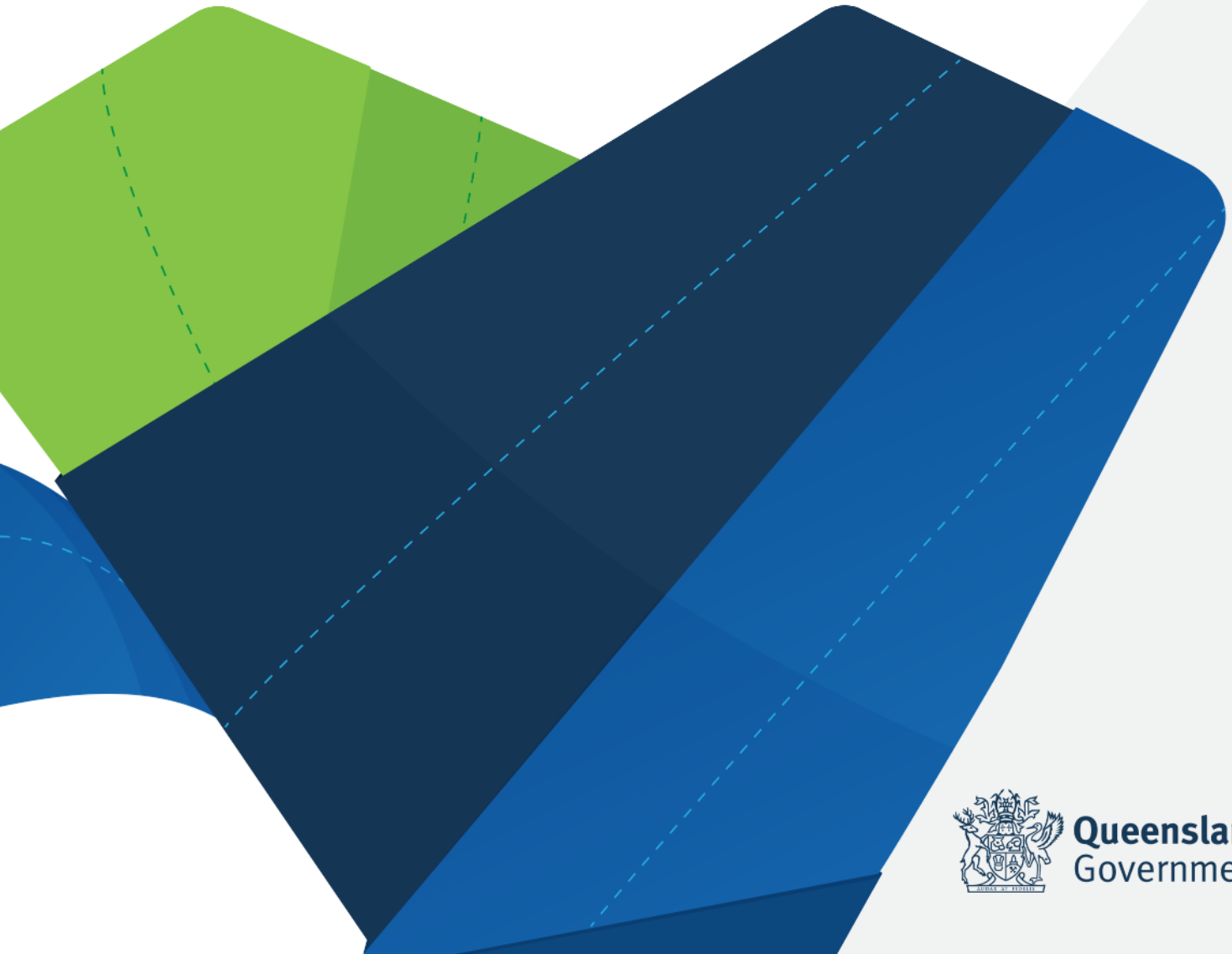
Queensland Health

Management of multi-resistant organisms

Guideline



Queensland Government

1. Purpose

This guideline provides recommendations regarding best practice to support the prevention and management of multi-resistant organisms (MROs) in health care facilities.

2. Scope

This guideline provides information for all Queensland public health system employees (permanent, temporary and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants and volunteers).

3. Related documents

Standards, procedures, guidelines

- Queensland Health Guideline for Management of outbreaks of communicable disease in health facilities
- Queensland Health Guideline for Bare Below the Elbows
- Queensland Health Guideline for Surveillance of healthcare associated infections
- Recommendations for the control of carbapenemase-producing Enterobacteriaceae (CPE): A guide for acute care health facilities
- Australian Guidelines for the Prevention and Control of Infection in Healthcare
- Queensland Health Environmental Cleaning Guidelines
- Hand Hygiene Australia Manual

4. Guideline for management of multi-resistant organisms

Multi-resistant organisms (MROs) are micro-organisms (usually bacteria) that are not susceptible to multiple classes of antimicrobial agents. MROs result in increased morbidity and mortality and prolonged hospital stays, and many are readily transmitted in the healthcare environment.

This guideline provides general recommendations on strategies to control MROs. More specific advice relating to the control of carbapenemase-producing *Enterobacteriaceae* can be found in the Recommendations for the control of carbapenemase-producing *Enterobacteriaceae* (CPE): A guide for acute care health facilities.

The prevention and control of MROs involves a coordinated approach making use of multiple strategies. There are core strategies that should be employed by all health services and

organism- or resistance mechanism-specific strategies that should be employed based on an assessment of risk for each MRO in each health service setting.

4.1 Core strategies for the prevention and control of MROs

The core strategies that form the basis for prevention and control of MROs include: governance and management; antimicrobial stewardship; monitoring; strategies to prevent transmission including standard precautions (e.g. hand hygiene, environmental cleaning) and transmission-based precautions (e.g. isolation, use of additional personal protective equipment, additional cleaning of the environment and client equipment).

4.1.1 Governance and management

In order to successfully prevent and control MROs, health services should have effective infection prevention and control programs in place. A governance framework that allocates executive responsibility is important for an effective program.

4.1.2 Strategies to prevent transmission of infection

4.1.2.1 Hand hygiene

Health services should have hand hygiene programs in place in line with the recommendations of Hand Hygiene Australia, the Australian Guidelines for the Prevention and Control of Infection in Healthcare and the requirements of the National Safety and Quality Health Service Standards.

4.1.2.2 Standard and transmission-based precautions

Standard precautions apply to the management of all clients and the healthcare environment. It is essential that standard precautions are applied at all times. For further information on standard precautions, consult the Australian Guidelines for the Prevention and Control of Infection in Healthcare.

Transmission-based precautions are applied in addition to standard precautions to clients suspected or confirmed to be infected or colonised with agents transmitted by the contact, droplet or airborne route.

Transmission-based contact precautions are used when there is a risk of direct or indirect contact transmission of infectious agents.

In the acute care setting, the following transmission-based precautions measures should be utilised in addition to standard precautions for the management of clients with MROs:

- allocation of single rooms with unshared ensuite or cohorting
- appropriate use of personal protective equipment (PPE) (including gloves, aprons or gowns, masks and protective eye wear/face shield)
- enhanced cleaning and disinfecting of the environment and equipment (e.g. using a 2 step, or 2-in-1 cleaning and disinfection process) and use of dedicated equipment

- minimised transfer within and between facilities and communication of client status when care is transferred between service providers or facilities.

Transmission-based precautions signage should identify the isolation room and include the necessary precautions to be adopted. Transmission-based precautions signage is available from:

https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-infection-control-guidelines/

4.1.2.3 Personal protective equipment (PPE)

Aprons

- aprons should be used in the care of clients with an MRO for client care activities involving minimal client contact. For activities involving extensive client contact, staff should wear a gown (see gowns section)
- aprons should be worn as single-use items, for one procedure or episode of care and should be discarded into waste after use
- aprons should be removed in the area where the episode of care takes place

Gowns

- the gown should include full coverage of arms and body front, from neck to mid-thigh or below if staff will be performing care activities involving extensive contact. (Extensive contact is described as direct contact with the areas not covered by an apron, for example, contact with staff forearms. Examples of extensive contact are providing cares such as dressing large or complex wounds; hygiene cares for incontinent clients; hygiene cares or pressure area care when a client is fully dependent; urinary catheter cares).
- a gown is to be put on prior to entering the client environment
- gowns should be worn as single-use items, for one procedure or episode of care and should be discarded into waste after use
- gowns should be removed in the area where the episode of care takes place

Gloves

- perform hand hygiene and wear clean non-sterile gloves prior to entering the client's environment
- gloves should be worn as single-use items
- gloves should be changed and hand hygiene performed between different care/treatment activities for the same client
- remove gloves and perform hand hygiene upon exiting the client's environment

Visitors of clients on contact precautions

- all visitors should be directed to perform hand hygiene prior to contact with the client's environment and upon exiting the client's environment
- PPE is not required unless the visitor is providing direct care
- visitors intending on visiting more than one client should be directed to visit the client with an MRO last or to wear a plastic apron in the client's environment

- during outbreaks/periods of increased prevalence, local procedures should be reviewed and visitor precautions altered as necessary by the infection prevention and control team

4.1.2.4 Isolation

The following recommendations are dependent on availability of rooms, the health service's resources and local risk assessment.

Acute settings

- a single room is recommended for clients who require transmission-based precautions. Rooms with unshared ensuites are preferred

  When a single room is not available, consultation with the health service's infection prevention and control practitioner is recommended to assess the various risks associated with alternative accommodation options such as cohorting (see definition of terms).

- keep bedside charts outside the room
- ensure transmission-based precautions signs are clearly displayed

Sub-acute and residential care settings

A local risk assessment should be made as per section 4.2 Organism specific approach. If the local risk assessment outcome is that isolation and transmission-based precautions are required, the following recommendations may be applied:

- a single room is recommended for clients who require transmission-based precautions. Rooms with unshared ensuites are preferred

  When a single room is not available, consultation with the health service's infection prevention and control practitioner is recommended to assess the various risks associated with alternative accommodation options such as cohorting (see definition of terms).

- keep bedside charts outside the room
- ensure transmission-based precautions signs are clearly displayed
- clients should be permitted to participate in group meals and activities if draining wounds are covered, bodily fluids are contained and the clients are directed to perform hand hygiene as per standard precautions.

Ambulatory therapy settings (for example, renal dialysis unit, oncology day therapy unit)

A local risk assessment should be made as per section 4.2 Organism specific approach. If the local risk assessment outcome is that isolation and transmission-based precautions are required, the following recommendations may be applied: clients do not require segregation in the waiting room

- the preferred placement of clients in these units is single room accommodation
- PPE for contact precautions should be used as per section 4.1.2.3
- where single room accommodation is not available, provide treatment in an area with as few adjacent stations as possible (for example, at the end or corner of the unit)

- ensure alcohol-based hand rub is available at the point of care
- clinical equipment and items such as examination couches/treatment chairs should be cleaned between clients as per the section: Environmental Cleaning
- remove excess stock from treatment areas prior to providing care.

Outpatient settings/General practice-like settings/Community-based clinics

A local risk assessment should be made as per section 4.2 Organism specific approach. If the local risk assessment outcome is that isolation and transmission-based precautions are required, the following recommendations may be applied:

- clients do not require segregation in the waiting room
- PPE for contact precautions is only recommended when physical examinations/procedures are being undertaken
- clinical equipment and items such as examination couches/treatment chairs should be cleaned between clients as per section: Environmental cleaning
- remove excess stock from procedure rooms prior to providing care.

4.1.2.5 Environmental cleaning and management of care equipment

It is recommended that all rooms and non-critical medical devices used for clients with an MRO are physically cleaned and disinfected using a 1000 ppm available chlorine solution or impregnated wipe. The process should involve either:

- a physical clean using a combined detergent and 1000ppm available chlorine solution or impregnated wipe (2-in-1 clean), i.e. a combined detergent/available chlorine solution or impregnated wipe could be used if this process involves mechanical/manual cleaning
- a physical clean using detergent, followed by a chemical disinfectant (2-step clean), i.e. clean with detergent or detergent impregnated wipe, then clean with 1000ppm available chlorine solution or impregnated wipe.

Products used to clean and disinfect medical devices are regulated by the Therapeutic Goods Administration and must be included in the Australian Register of Therapeutic Goods as a Class I or Class IIb accessories to medical devices.

Daily cleaning of a client room

Minimum frequencies for routine cleaning are outlined in the Queensland Health – Environmental Cleaning Guidelines. All client surrounds and frequently touched surfaces (such as bedrails, trolleys, bedside commodes, doorknobs, light switches, tap handles and ensuite facilities) should be cleaned and disinfected daily as a minimum.

Care equipment

Non-critical medical devices (e.g. electronic thermometers, sphygmomanometers, glucometers, hoists, pat slides) may transmit MROs if devices are shared between clients. To reduce the risk of transmission, disposable or dedicated equipment is preferred. Equipment that is unable to be dedicated should be cleaned and disinfected after use, allowed to dry and stored clean.

Discharge cleaning of client rooms

Cleaning should not commence until all the personal effects have been removed from the room. Non- disposable privacy curtains and window curtains, if present, should be removed for laundering prior to cleaning commencing. Disposable curtains, if present, should be replaced as per manufacturer's guidance and local schedule.

The room and all care equipment remaining in the room should be physically cleaned. All furniture, care equipment items, horizontal surfaces, frequently touched surfaces (e.g. light switches and call buttons) and bathroom/toilet/shower area should be thoroughly cleaned and disinfected. All consumables that are unable to be cleaned should be discarded.

Cleaning of ambulatory/clinic areas

Waiting areas do not require cleaning and disinfection that is in addition to the routine cleaning and disinfection practices for the area.

4.1.2.6 Monitoring (screening for surveillance purposes)

Health services should have a program of screening of clients for MROs in place based on local risks of transmission. Further information can also be found in section 4.2.1 Targeted screening programs.

4.1.2.7 Antimicrobial stewardship

Inappropriate use of antibiotics provides favourable conditions for resistant bacteria to emerge, multiply and persist, therefore there is a need to optimise the way antibiotics are used and prescribed. As resistance is increasing the development of new antimicrobial agents is declining so it is critical that the antimicrobials that are still effective are used wisely and judiciously. Health services should ensure that they have a local antimicrobial stewardship program in place to encourage appropriate prescribing and prudent use of antibiotics. Further information about antimicrobial stewardship can be found on the Queensland Health Antimicrobial Stewardship web page and the Australian Commission on Safety and Quality in Health Care Antimicrobial Stewardship Initiative web page.

4.2 Organism-specific approach

For recommendations regarding resistance mechanism-specific strategies for control of CPE refer to: Recommendations for the control of carbapenemase-producing *Enterobacteriaceae* (CPE): A guide for acute care health facilities.

Organism- or resistance mechanism-specific strategies make use of knowledge of the epidemiology of specific MROs in order to reduce the risk of transmission and outbreaks. These strategies include targeted screening and identification, management of cases and screening and management of contacts.

In acute care facilities, it is recommended at a minimum to implement organism- or resistance mechanism-specific programs for the following: MRSA, VRE, CPE, Multi-resistant *Acinetobacter spp.* and Multi-resistant *Pseudomonas aeruginosa*. Such programs should include management of cases under transmission-based precautions, targeted screening programs and enhanced environmental cleaning and disinfection.

There is conflicting evidence available on the merits of including ESBL-producing organisms in a targeted resistance mechanism-specific approach. It is recommended that acute and high-risk health services assess local epidemiology and perform an assessment of risk to determine the requirements of the local approach for ESBL-producers. An important factor to consider is that current laboratory procedures utilise the tests for ESBL-producers to detect carbapenem resistant organisms; this is an important step to determining if CPE are present.

The assessment of risk should include the expertise of infection prevention and control practitioners, infectious diseases physicians and medical microbiologists. It is further recommended that infection prevention and control programs maintain awareness for increased numbers of infections with ESBL- producers in order to monitor for outbreaks. In the event of increased numbers, the local approach should be re-assessed.

For other health services that are not usually considered high risk for MRO infection (e.g. residential aged care, outpatient settings, community-based settings), the decision to implement an organism- or resistance mechanism-specific program other than for CPE should be made per health service based on factors including local epidemiology, risk of transmission and risk of infection.

Different combinations of strategies may be used for different health services, and the appropriate strategy may be a risk assessment approach that is applied to each individual client with an MRO colonisation or infection. For example, in residential aged care, use of isolation and contact precautions may not be required routinely for management of residents who are colonised with an MRO, but these measures may be put in place when a risk assessment indicates they are required. For example, a resident who currently has an infection with an MRO, or a resident colonised with an MRO who has trouble with hygiene behaviours. In general practice-like settings and community-based clinics, isolation is not normally required for patients with an MRO; however, use of contact precautions may be indicated when performing a procedure on a patient with an MRO, particularly if there is an infection present.

4.2.1 Targeted screening programs

As a minimum standard to reduce the risk of transmission of MROs, the approach to screening outlined in Table 1 is recommended. Local epidemiology of MROs may necessitate targeted screening in addition to the below.

Table 1: Screening of MROs

Organism	Suggested Targeted Screening	Frequency of Screening	Screening Sites
MRSA	• Interhospital transfers • Transfers from long-term care facilities • Clients who are known to have previously been infected or	Screen on admission	Nose and groin

	colonised with MRSA who meet the clearance criteria • Clients with chronic wounds Clients from locales or populations where community-acquired strains of MRSA are prevalent[1] • High risk units: – Intensive care unit – High dependency unit – Spinal unit – Burns unit – Clients with planned prosthetic surgery (joint replacement, cardio-thoracic surgery).	In high risk units, screen on admission, weekly thereafter and on discharge	Clinical specimens (wounds, catheter urine, respiratory, other as clinically indicated)
VRE	• High risk inpatient units: – Intensive care unit – Nephrology/renal unit – Haematology/ oncology unit – Solid organ transplant unit • Inter-hospital transfers • High risk ambulatory units – Dialysis clients – Ambulatory haematology/ oncology clients • People who are identified as a VRE contact during their hospitalisation and have not been shown to have post-contact negative cultures	In these high-risk units or client populations, screen on admission (whether this be admission from the emergency department/community, transfer from another unit within the facility, or inter-hospital transfer), weekly thereafter and then on discharge. In ambulatory haemodialysis units or ambulatory haematology/oncology units, screen every 3 months. For contacts of VRE positive clients, consider collecting two screening samples one week apart. A minimum of	Stool samples or rectal swabs are generally considered a sensitive method for detection of VRE.

		one screening sample should be collected.	
CPE	For specific advice regarding screening strategies for CPE, refer to the Recommendations for the control of carbapenemase-producing *Enterobacteriaceae* (CPE): A guide for acute care health facilities As a minimum, screen: • Admissions from high risk settings (e.g. all clients who have received treatment in an overseas hospital in the previous 12 months) • Contacts of confirmed cases • Inter-hospital transfers from facilities with known ongoing transmission or outbreak of CPE • High-risk units on admission, for example: – Intensive care – Haematology/oncology – Burns – Solid-organ transplant – Haemodialysis – Gastroenterology/gastrointestinal surgery – Aged care (in the context of a risk assessment) • Repeated prevalence surveys in the context of established local transmission or CPE endemic	Screen high-risk units and high-risk clients on admission Consider weekly screening of high-risk units or other units in the context of local transmission or endemic CPE	Rectal swabs or stool samples. Urine from catheterised clients. Wounds, aspirates from tubes or drains as indicated should also be considered.
Multi-resistant *Acinetobacter spp.* and Multi-resistant *Pseudomonas aeruginosa*	• High risk units: – Intensive care unit – Solid-organ transplant unit – Specialty centres (e.g. burns, neurosurgery)	Screen on admission, weekly thereafter and on discharge	Rectal, Groin Clinical specimens (wounds, catheter urine, respiratory, other as

			clinically indicated)
ESBL-producing organisms	Infection prevention and control practitioners, infectious diseases physicians and medical microbiologists should assess local epidemiology and perform an assessment of risk to determine local screening requirements for ESBL.		Rectal, Groin Clinical specimens (wounds, catheter urine, respiratory, other as clinically indicated)

4.2.2 Identification, screening and management of contacts

Identification of contacts

A contact may be defined as a person who has shared a room, bathroom or toilet facilities with a confirmed MRO case for more than 24 hours.

Screening of contacts

The purpose of screening of contacts of clients with an MRO is to ascertain whether transmission of the MRO has occurred. Screening of contacts may be undertaken in collaboration with the infection prevention and control team when an MRO is newly acquired or when the client with the MRO has not been isolated/managed under transmission-based precautions for another reason.

Specific advice regarding recommended screening to be undertaken for contacts of clients with CPE can be found in the Recommendations for the control of carbapenemase-producing Enterobacteriaceae (CPE): A guide for acute care health facilities.

Screening of contacts of clients with VRE is recommended for acute and high-risk settings.

Decisions about screening of contacts of MRSA, multi-resistant gram negative organisms (MRGN) (other than CPE) and ESBLs should be made by local infection prevention and control programs based on local patterns of transmission and population risk factors.

Screening of contacts in residential aged care or community settings is not normally recommended.

Isolation of contacts

Screening the contacts of clients with MROs should be undertaken in accordance with the section on screening, and in acute inpatient settings one of the following options should be employed for the management of contacts, taking into account the availability of beds and isolation facilities and the risk of transmission:

- Isolate contacts in a single room with a dedicated ensuite until pathology results are available.

- Cohort contacts in multi-bed bays with restriction of admission to unoccupied beds pending screening results.
- In health services where the lack of availability of beds and isolation facilities makes compliance with the above options unachievable, the infection prevention and control practitioner should undertake an assessment of the risk of transmission of MRO associated with not isolating contacts pending screening results.

4.2.3 Other issues

4.2.3.1 Prioritisation of isolation

When there are limited facilities for isolation of clients with an MRO that requires transmission-based precautions, competing factors will need to be considered and a risk assessment undertaken by the infection prevention and control program to determine prioritisation, taking local and global trends into account.

Please Note:

- geographic separation of VRE and MRSA clients is desirable
- cohorts should be created based on clinical diagnosis, microbiologic confirmation when available, epidemiology and mode of transmission of the infectious agent
- it is not always appropriate to cohort clients with the same MRO species if they have a different resistance mechanism or phenotype
- prioritisation for MRO isolation should also consider:
  - risk factors of clients
    - current or recent (within 48 hrs) incontinence of faeces or urine
    - presence of indwelling devices such as urinary catheter
    - open or draining wound/s
    - compromised hygiene practices
    - enterostomies
    - coincident respiratory infection (MRSA only)
    - relative vulnerability of client population (e.g. ICU, transplant, renal, burns units)
  - risk factor of the significant organism
    - relative persistence of the organism on environmental surfaces
    - pathogenicity and transmissibility given other risk factors
    - outbreak situation
  - risk assessment of the healthcare environment

4.2.3.2 Clearance of MROs

A health service may decide to institute a program of screening clients with MRO colonisation to determine whether the MRO has been ‘cleared’ (the client is no longer colonised with the MRO). Clearance should be undertaken in consultation with the infection prevention and control team. A client who has been cleared of MRO colonisation who subsequently returns a positive culture from either a clinical isolate or a screening specimen

should be considered to be MRO colonised again. The process for clearance should then be recommenced as below.

The following criteria should be satisfied prior to certifying that a client has cleared an MRO:

MRSA, MRGN and ESBL producing organisms (other than CPE)

- More than three months elapsed time from the last positive specimen
- All wounds are healed, no indwelling medical devices present
- No exposure to any antibiotic or antiseptic body wash for at least two weeks prior to screening
- In the case of MRSA, no exposure to specific anti-MRSA antibiotic therapy in the past three months
- Consecutive negative screens from screening sites (refer to Table 1 for required screening sites) on two separate occasions. The screening swabs must be separated by a minimum period of one week. The period over which these swabs are collected should not be less than a week, but may be over a period of months
- Health services may consider using the evaluation of a single set of screening swabs with a broth amplification technique for clearance of clients. This process should be based on local factors and agreements with local laboratories.

VRE

Some clients with VRE may appear to 'clear' VRE with time but may relapse with the use of antibiotic therapy. In instances when clearance of VRE is to be undertaken, an assessment of the risk should be performed. The following information should be used to inform the assessment of risk. Client groups with the highest risk of infection with VRE are:

- Haemodialysis clients
- Oncology/haematology clients
- Solid organ transplant clients
- Intensive care unit clients.

Client groups with the highest risk of long-term carriage of VRE and recurrence/relapse of carriage of VRE are:

- renal/haemodialysis clients and long-term acute care clients
- those that have had antimicrobial therapy administered recently, particularly if administered within one month.

The following strategies may assist in managing the risk:

- exclude renal/haemodialysis clients and long-term acute care clients from clearance of VRE
- exclude clients being housed in high-risk units from clearance screening.

In addition to an assessment of the risk, the following criteria should be fulfilled prior to commencing the process of VRE clearance:

- at least 6 months since the last positive VRE specimen
- a period of at least 6 months free from the following:

- hospitalisation (acute episode)
- antimicrobial therapy
- invasive devices.

Clearance screening should be undertaken according to the following:

- three consecutive negative stool samples or rectal swabs separated by a minimum period of one week per negative specimen.

CPE

Specific advice for clearance screening for clients with CPE can be found in the Recommendations for the control of carbapenemase-producing *Enterobacteriaceae* (CPE): A guide for acute care health facilities.

A cautious approach is required to undertake clearance screening for CPE. It is recommended that a health service only consider clearance screening for CPE if the sustainability of maintaining contact precautions for increasing case numbers and impact on client care and client flow are significant issues.

If clearance screening for CPE is undertaken, clients who have been cleared should be re-screened on re-admission.

4.2.3.3 Surveillance

All acute and high-risk health services should undertake surveillance of MROs in accordance with the Queensland Health Guideline for the Surveillance of Healthcare Associated Infection accessed at: http://www.health.qld.gov.au/qhpolicy/docs/gdl/qh-gdl-321-7-1.pdf

Infection prevention and control staff should review surveillance data on a regular basis to determine if there has been an increase in cases, or transmission between cases. If an increase in cases or transmission is identified, infection prevention and control staff should consider outbreak control measures including intensifying active screening. Infection prevention and control staff in smaller health services that see a small number of cases should consider one clinical isolate or infection significant enough to warrant further investigation.

4.2.3.4 Colonised staff

Routine or outbreak screening of staff should not be undertaken. There may be circumstances when a healthcare worker has been identified as being colonised or infected with an MRO in the course of receiving health care, either at their own facility or elsewhere. If a healthcare worker is identified as colonised with a MRO, advice should be sought from an appropriate infection prevention and control or infectious diseases professional, on an individual basis, to assess the risk of transmission to clients when the healthcare worker returns to work.

4.3 Outbreak management

For advice on management of outbreaks refer to the Queensland Health Guideline for the Management of Outbreaks of Communicable Diseases in Health Facilities available from:

https://www.health.qld.gov.au/data/assets/pdf_file/0025/444508/management-outbreaks.pdf

For specific advice on the management of outbreaks of CPE refer to Recommendations for the control of carbapenemase-producing *Enterobacteriaceae* (CPE): A guide for acute care health facilities.

Appendix: Additional resources

Healthcare associated infection consumer factsheet

http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cd33_hai_brochure_131106.pdf

MRSA

Consumer factsheet:
http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cd33_mrsa_brochure_131106.pdf

VRE

Consumer factsheet:
http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cd33_vre_brochure_131106.pdf

CPE

Information sheet for clients, visitors and care at home:
https://www.safetyandquality.gov.au/publications/cre-client-information-sheet/

Information sheet for clinicians:

https://www.safetyandquality.gov.au/publications/cre-clinician-information-sheet/

CDC Facility Guidance for Control of Carbapenemase-resistant Enterobacteriaceae (CRE)
https://www.cdc.gov/hai/organisms/cre/cre-toolkit/index.html

USA Agency for Healthcare Research and Quality: CRE Control and Prevention Toolkit:
http://www.ahrq.gov/cretoolkit

Signage for transmission-based precautions

https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-infection-control-guidelines/

Prevention and control of infection in residential and community aged care

https://www.nhmrc.gov.au/guidelines-publications/d1034

Therapeutic Goods Administration regulation of disinfectants and sterilants

https://www.tga.gov.au/disinfectants-sterilants-regulation-basics

5. Definitions of terms used in the guideline

Term	Definition/Explanation/Details	Source
Cohorting	Placing together in the same room patients who are infected or colonised with the same pathogen and are suitable roommates.	National Health and Medical Research Council (2010) Australian Guidelines for the Prevention and Control of Infection In Healthcare https://www.nhmrc.gov.au/book/australian-guidelines-prevention-and-control-infection-healthcare-2010/glossary Access date: 21/07/2017
Colonisation	The sustained presence of replicating infectious agents on or in the body without the production of an immune response or disease.	National Health and Medical Research Council (2010) Australian Guidelines for the Prevention and Control of Infection In Healthcare https://www.nhmrc.gov.au/book/australian-guidelines-prevention-and-control-infection-healthcare-2010/glossary Access date: 21/07/2017
Extended-spectrum beta-lactamase producers (ESBLs)	Bacteria that produce enzymes called extended-spectrum beta-lactamases (ESBLs) are resistant to many penicillin and cephalosporin antibiotics and often to other types of antibiotic.	Extended-spectrum beta-lactamases (ESBLs): guidance, data, analysis (2014) Health emergency planning and infectious diseases. https://www.gov.uk/government/collections/extended-spectrum-beta-lactamases-esbls-guidance-data-analysis Access date 21/07/2017
Methicillin Resistant *Staphylococcus aureus* (MRSA)	Strains of *Staphylococcus aureus* that are resistant to many of the antibiotics commonly used to treat infections. Epidemic strains also have a capacity to spread easily from person-to-person.	National Health and Medical Research Council (2010) Australian Guidelines for the Prevention and Control of Infection In Healthcare https://www.nhmrc.gov.au/book/australian- guidelines-prevention-and-control-infection- healthcare-2010/glossary . Access date 21/07/2017
Multi-resistant Gram-Negative	Gram-negative bacteria are resistant to multiple drugs and are increasingly	Centres for Disease Control and Prevention (2011) Gram-negative Bacteria Infections in Healthcare

Organisms (MRGN)	resistant to most available antibiotics. These bacteria have built-in abilities to find new ways to be resistant and can pass along genetic materials that allow other bacteria to become drug resistant as well.	Settings https://www.cdc.gov/hai/organisms/gram-negative-bacteria.html Access date 21/07/2017
Multi-resistant organisms/multi-drug resistant organisms (MROs)	In general, bacteria that are resistant to one or more classes of antimicrobial agents and usually are resistant to all but one or two commercially available antimicrobial agents.	National Health and Medical Research Council (2010) Australian Guidelines for the Prevention and Control of Infection In Healthcare https://www.nhmrc.gov.au/book/australian-guidelines-prevention-and-control-infection- healthcare-2010/glossary. Access date 21/07/2017
Vancomycin Resistant *Enterococci* (VRE)	Enterococci are Gram-positive bacteria that are naturally present in the intestinal tract of all people. Vancomycin is an antibiotic to which some strains of enterococci have become resistant. These resistant strains are referred to as VRE and are frequently resistant to other antibiotics generally used to treat enterococcal infections.	National Health and Medical Research Council (2010) Australian Guidelines for the Prevention and Control of Infection in Healthcare https://www.nhmrc.gov.au/book/australian-guidelines-prevention-and-control-infection-healthcare-2010/glossary. Access date 21/07/2017
Carbapenemase producing *Enterobacteriacea e* (CPE)	CPE are members of the *Enterobacteriaceae* that are resistant to carbapenems, a class of 'last resort' antibiotics for treating serious infections. *Enterobacteriaceae* are the largest family of gram-negative bacteria causing human infection. This family includes common pathogens such as *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae* and *Proteus* species.	Australian Commission on Safety and Quality in Health Care. (2017) Recommendations for the control of carbapenemase-producing Enterobacteriaceae (CPE). A guide for acute care health facilities. Available from: https://www.safetyandquality.gov.au/publications/recommendations-for-the-control-of- carbapenemase-producing-enterobacteriaceae/ Access date: 21/07/2017

	Enterobacteriaceae colonise the normal human gastrointestinal tract, generally without causing disease. However, they can also cause common infections, including urinary tract infection, abdominal infection and bloodstream infection.	

6. Document approval details

Document custodian

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Approval officer

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Approval date: 20/11/2017

7. Version control

Version	Date	Prepared by	Comments / reason for update
Guideline 1.0	13/06/2012		
Guideline 2.0	25/08/2014	Mareeka Gray	
Guideline 3.0	20/11/2017	Matthew McQuilty/Rebecca Adams	Updated version of Australian Commission on Safety and Quality in Healthcare's Recommendations for the control of carbapenemase-producing Enterobacteriaceae (CPE) May 2017. General update and revision also undertaken.

Guideline 3.1	23/10/2021	Kendall Church	Updated on WWW.