

Multidrug Resistant Organisms Control

Purpose

To set out clear staff guidance for the management of multidrug resistant organisms (MDROs) to minimise risk of transmission to patients, staff and visitors.

Policy

This policy focuses on infection prevention and control measures required in healthcare facilities to minimise MDRO transmission risk.

Applicability

This policy applies to all staff.

Definitions

Antimicrobial Resistance (AMR)	The developed ability of a microorganism to evade an antimicrobial agent that it was originally susceptible to. AMR occurs naturally, but is facilitated by antimicrobial use, and inadequate infection prevention and control.
Antimicrobial Stewardship (AMS)	Antimicrobial stewardship (AMS) involves taking coordinated actions to promote the appropriate use of antimicrobials that will help to conserve their effectiveness. It aims to optimise the use of antimicrobials in the prevention and treatment of infections while minimising the potential harms that may result from their use including AMR, adverse reactions, C. difficile-associated diarrhoea, and excessive health care costs.
Colonisation	The presence and growth of a microorganism on/in a host with the absence of symptoms of clinical disease. A host can be a reservoir for transmission to the environment and other individuals.
Infection	The replication of organisms in/on a host which causes clinical disease. Infections are accompanied by signs and symptoms such as fever and inflammation. An individual who is colonised with an MDRO is at risk of developing infection if their defence mechanisms are compromised (e.g. exposure to antibiotics, impaired skin/mucosal barriers, impaired immune response).
Multidrug-resistant organism (MDRO)	Microorganisms that are resistant to one or more classes of available antimicrobial agents including antibacterial, antiviral, antifungal and antiparasitic medicines.

Roles and Responsibilities

Executive Management Team

The role of the Executive Management Team is to ensure that there is a surveillance system and processes in place for the surveillance of MDRO that meets local and national requirements. They are responsible for ensuring effective, adequate, and appropriate resources are in place for the implementation of this policy.

Infection Prevention and Control Advisory Committee

The role of the Infection Prevention and Control Advisory Committee is to provide strategic guidance and direction for surveillance activities. They are responsible for:

- Ensuring MDRO surveillance reflects changing international epidemiological trends for antimicrobial resistant organisms
- Using data from MDRO surveillance reports to inform strategic planning for future improvements.

Infection Prevention and Control Operational Team

The role of the Infection Prevention and Control Operational Team is to carry out MDRO surveillance activities and ensure timely reporting to clinical areas and other key stakeholders.

They are responsible for:

- Reviewing MDRO cases in the electronic surveillance system (ICNet) on a daily basis.
- Notifying clinical staff of MDRO alert organisms and advising clinical staff on appropriate containment measures and infection prevention and control precautions.
- Ensuring patients with positive MDRO isolates are identified via ICNet and have an alert placed on patient information systems e.g. Health Connect South and SIPICS.
- Investigating suspected incidents of MDRO cross infection and outbreaks.
- Providing written MDRO surveillance reports to relevant clinical staff, IPC committees and other key stakeholders.

Microbiology Department at Canterbury Health Laboratories

The role of the microbiology laboratory is to ensure appropriate tests are available to identify MDRO as well as other potential pathogens such as fungi that are resistant to multiple antimicrobials. They are responsible for ensuring any positive results are communicated promptly to clinical teams and the infection prevention and control team.

Ward Managers / Co-ordinators / Nursing Staff

The role of ward managers / co-ordinators / nursing staff is to apply infection prevention and control policies, guidelines and procedures for MDRO to ensure patient safety and minimise risk of transmission. They are responsible for:

- Ensuring electronic patient records are checked for MDRO on admission e.g. Health Connect South / SIPICs
- Ensuring an MDRO admission risk assessment is completed on admission or upon transfer
- Ensuring patients are screened for MDRO based on admission (or pre-admission or upon transfer) risk assessment and on request e.g. contact tracing
- Ensuring screening/specimens are obtained in a timely fashion
- Ensuring infection prevention and control precautions for MDRO are carried out as per policy.

Consultants and other Medical Staff

The role of consultants and other medical staff is to adhere to infection prevention and control policies, guidelines, and procedures for MDRO to ensure patient safety and minimise risk of transmission. They are responsible for:

- Accessing and following up on any microbiology results for their patients
- Ensuring infection prevention and control precautions for MDRO are carried out as per policy.

Other Clinical Staff and Employees

The role of other clinical staff and employees is to adhere to infection prevention and control policies, procedures and guidelines for MDRO to ensure patient safety and minimise risk of transmission.

They are responsible for:

- Following guidance of Ward / Unit and Nursing / Medical staff when dealing with patients in transmission-based precautions for MDRO
- Asking the ward/unit nurse in-charge for guidance and clarification for any areas of concern or uncertainty

Mode of transmission

Contact transmission is the primary mode of spread for MDRO. This may be direct contact or indirect contact via contaminated surfaces or equipment, or transient carriage on the hands of healthcare workers.

Preventing MDRO Transmission

A combination of measures is required to control the spread of MDRO including antimicrobial stewardship, admission risk assessment, appropriate screening and infection prevention and control measures. MDRO are of concern because:

- They are resistant to many antibiotics commonly used to treat infection
- patients colonised with an MDRO are at risk of progressing to clinical infection
- eradication may not be possible for colonised patients
- MDRO infection increases patient morbidity and mortality
- second-line antibiotics may be required for treatment that may be less effective and have more side effects
- they act as a reservoir of resistant genes for transmission to other organisms
- they may persist in the environment for long periods (depending on the organism)

MDRO Admission Assessment

All patients are to be assessed every time they present for admission (or pre-admission, day procedures or transfer) for MDRO risk factors.

Risk factors for carriage vary according to the MDRO. Significant risk is associated with:

- Travel to an overseas area with endemic MDRO
- Overseas hospitalisation (especially with an ICU stay)
- Residence in a long-term care facility.

Admission risk assessment includes checking for current MDRO alerts on the patient management system (SIPICS) and Health Connect South.

It is important to ask for previous travel history, hospitalisation history and other risk factors as noted in the *Multidrug Resistant Organisms (MDRO) Admission Assessment Flowchart (Ref 2404773)*. Risk assessment will determine whether a patient requires MDRO screening and which precautions are required.

This assessment is a responsibility of the admitting nurse in all Waitaha Canterbury and Te Tai o Poutini West Coast facilities including inter-hospital transfers.

Checking medical warnings (MDRO alert) on admission

Admitting staff (Ward clerks/nursing staff) are responsible for checking medical warnings about the patient's possible MDRO status:

- Check the patient management system for previous MDRO alerts
- Print the page of any alerts documented.
- Place the alert printout in front of clinical notes for clinical staff.

National medical warning (MDRO alerts) creation

- A medical warning (“MDRO Alert”) will be entered on the Patient Management System, SIPICS by the Infection Prevention and Control specialists based on a MDRO positive result.
- These alerts are visible on Health Connect South & SIPICS under ‘National Medical Warnings’.
- MDRO alerts may only be applied or removed by staff members in the IPC Service.

Common MDRO

Staff information sheets for common MDRO provide key information and guidance.

- *Candida Auris* – Ref 2410220
- CPE (Carbapenemase-producing *Enterobacteriaceae*) – Ref 2410614
- CRAB (Carbapenem-resistant *Acinetobacter baumannii*) – Ref 2406305
- ESBL (Extended-spectrum beta-lactamase) producing *Enterobacteriaceae* – Ref 2410688
- MRSA (Methicillin Resistant *Staphylococcus aureus*) – Ref 2410691
- VRE (Vancomycin-resistant *Enterococci*) – Ref 2410600

Psychological effects of isolation precautions

Patients in isolation for MDRO may suffer from negative psychological effects. The following interventions may help to prevent this:

- Ensure the patient is able to communicate effectively with staff e.g. can access a call bell.
- Provide patients with information about their MDRO and explain the requirements and rationale for any transmission-based precautions (see *Supporting Materials*).
- Encourage visits from family and friends.
- Keep the door or curtains open (at the foot of the bed) for Contact Precautions if the patient prefers.
- Do not restrict the use of a telephone – ensure ward telephone is disinfected after use with an approved disinfectant wipe.

Family/Whānau advice (visitors)

Visitors are not normally required to wear PPE (some exceptions apply) but staff should inform them to:

- Wash their hands or use alcohol-based hand rub (ABHR) after visiting the patient.
- Visit other patients prior to visiting the patient in isolation.
- Family members of MDRO positive patients who are visiting or rooming-in must adhere to strict hand hygiene when exiting the patient’s room or providing personal cares e.g. changing nappies or continence products, assisting with gastrostomy tubes or stoma etc.
- Child siblings of MDRO positive patients are not excluded from play areas but should be fully dressed and able to clean their hands.
- Family members must clean their hands after exiting the room and prior to accessing shared ward spaces e.g. milk room, beverage area, expressing room.

MDRO decolonisation

- While decolonisation is not possible for patients with MDRO such as ESBL producers, VRE or CPE, prior to elective surgery, consideration of a topical treatment short term to reduce bacterial load may be considered.
- MRSA Topical Decolonisation Treatment (Ref 2410623) for MRSA positive patients can be effective for decolonisation. If considered clinically appropriate, MRSA decolonisation in pregnancy should be initiated as close to delivery date as possible.

- If antibiotic prophylaxis is required, the patient's colonisation status should be considered to ensure appropriate antibiotics are prescribed. A Clinical Microbiologist or Infectious Diseases physician will be able to advise.

MDRO positive patients requiring surgery

- There is no need to place patients with an MDRO last on the list as standard operating theatre precautions should prevent cross infection as long as they are followed.
 - Patient should bathe and change into theatre gown as close as practical to scheduled procedure time.
 - It is ideal to minimise number of staff in theatre and reduce number of staff in direct contact with patient and surroundings.
 - Decontaminate electronic equipment with 2-in-1 cleaning and disinfectant wipes e.g. Clinell.
 - Change bacterial/viral filter on single-use anaesthetic circuits between each patient.
 - Follow usual theatre protocols for management of waste, linen and instruments
- The use of a disinfectant is required for the cleaning of the theatre after operating on a patient with MDRO. In addition, the PACU patient area and any shared equipment should be cleaned and disinfected after the patient leaves the area.
- Transport and Operating Theatre staff must be informed of the patient's MDRO status.
- Observing the 5 Moments for Hand Hygiene (Ref 2401089) is expected.

Transportation to other departments within the hospital

When transporting patients to other departments for investigations, the orderly staff should be advised of the isolation requirements before collecting the patient. The receiving department must also be advised of the MDRO status and the precautions required.

- Encourage or assist the patient to perform hand hygiene prior to leaving the room.
- On exiting the isolation room, orderlies must remove any PPE that has been used within the isolation room and then perform hand hygiene.
- The orderly does not require PPE during transportation as good hand hygiene is sufficient.
- Once the patient has been delivered to the department, orderlies must again perform hand hygiene.
- Cleaning and disinfection is required for any shared equipment used during transport of patient e.g. oximeter.
- Standard Precautions are sufficient during transport to the mortuary.
- If patients require treatment in support facilities such as physiotherapy or swimming, discuss infection prevention and control precautions required with the IPC service.

Care of the seriously ill or terminally ill patients with MDRO

In individual cases, under the advice of an ID Physician or IPC Specialist, specific variances may be made in the management of known MDRO positive patients who are seriously or terminally ill. They will take into account holistic aspects of care and patient specific needs weighed against transmission risk factors.

Discharge/transfer to community facilities including residential care

- Known MDRO positive patients should be discharged promptly from hospital as soon as their clinical condition allows.
- The medical discharge letter should inform the GP of MDRO colonisation or active infection and any treatment that has been given.
- Other health care agencies involved in the patient's care should be informed, e.g. CREST, District Nurse Services.

- If the MDRO is newly identified in a patient transferring to a long-term care or aged residential care facility, the clinical staff at the facility must be informed, preferably in advance of the patient discharge.
- MDRO colonisation or infection is not a contraindication to the transfer of a patient to a residential care facility.
- If carbapenemase producing *Enterobacteriaceae* (CPE) or Carbapenem-resistant *Acinetobacter baumannii* (CRAB) positive patients are to be transferred to a residential care facility:
 - An IPC management plan should be in place beforehand.
 - Before discharge into the community, the patient's primary health care provider and the public health unit needs to be informed of the patient's status.
 - The patient and any relevant care giver(s) should be provided with relevant information on how to manage the CPE/CRAB colonisation or infection.
 - The IPC Service may provide outreach advice to the residential care facility if required.

Ambulance and inter-hospital shuttle transfers

- Hand hygiene must be undertaken before and after contact with MDRO positive patients as per 5 Moments for Hand Hygiene (Ref 2401089)
- Standard Precautions are implemented by Ambulance staff for MDRO transfers.
- Any bedding used for the transfer must be changed.
- Cleaning and disinfection of bed/wheelchair after use as per policy. (Additional cleaning of the rest of the ambulance is not usually required after transporting a MDRO positive patient).
- Ambulance Services should be notified in advance if the patient is considered high risk of transmission of the MDRO to other ambulance patients e.g. a discharging lesion which cannot be enclosed by an impermeable dressing, or widespread colonised skin lesions.
- See Inter-hospital transport of patients (Ref 2404054)

Supporting materials

Controlled Documents

Information for Staff (Specific MDRO)

- *Candida Auris* Staff Information – Ref 2410220
- CRAB (Carbapenem resistant *Acinetobacter baumannii*) Staff Information – Ref 2406305
- CPE (Carbapenemase-producing *Enterobacteriaceae*) – Ref 2410614
- ESBL (Extended-spectrum beta-lactamase) producing *Enterobacteriaceae* – Ref 2410688
- MRSA (Methicillin Resistant *Staphylococcus aureus*) – Ref 2410691
- MDRO (Multidrug Resistant Organisms) Admission Assessment Flowchart Ref 2404773.
- VRE (Vancomycin-resistant *Enterococci*) Staff Information – Ref 2410600

Information for Staff (Other resources)

- Hydrotherapy pool Staff Information Sheet – Ref 2410551
- Transmission Based Precautions Isolation Guidelines - Ref 2400389

Information for Patients, Parent/Caregivers and Whānau (Specific MDRO)

- *Candida auris* Patient Information Leaflet Ref 2410221
- CRAB (Carbapenem resistant *Acinetobacter baumannii*) Patient Information – Ref 2406304
- CPE (Carbapenemase-producing *Enterobacteriaceae*) Patient Information – Ref 2410613
- ESBL (Extended Spectrum Beta Lactams) Parent Information – Ref 2406243

- MRSA (Methicillin Resistant Staphylococcus aureus) Parent Information – Ref 2404537
- MRSA testing – Ref 2405731
- MRSA Topical Decolonisation Treatment – Ref 2410623
- MDRO (Multidrug Resistant Organisms) Patient Information – Ref 2406243
- MDRO Patient Information (Te Reo) – Ref 2406243
- Vancomycin-resistant *Enterococci* (VRE) Patient Information – Ref 2410600

Information for Patients, Parent/Caregivers and Whānau (Other resources)

- My isolation plan - Ref 2410052
- *Why am I in isolation?* - Ref 2402202
- *Why am I in isolation?* (Te Reo) - Ref 2410030

References

- Ministry of Health (2018). Infection prevention and control and management of Carbapenemase-producing Enterobacteriaceae.
<https://www.health.govt.nz/system/files/documents/publications/infection-prevention-control-management-carbapenemase-producing-enterobacteriaceae-dec18.pdf>
- Wilson A.P.R., Livermore D.M., Otter J.A., Warren R.E., Jenks P., Enoch D.A., Newsholme W., Oppenheim B., Leanord A., McNulty C., Tanner G., Bennett S., Cann M., Bostock J., Collins E., Peckitt S., Ritchie L., Fry C., Hawkey P. (2016). Prevention and control of multi-drug-resistant gram-negative bacteria: recommendations from a Joint Working Party. *Journal of Hospital Infection* 92 S1- S44. <http://dx.doi.org/10.1016/j.jhin.2015.08.007>
- Ministry of Health (2007). Guidelines for the Control of Multi-drug resistant Organisms in New Zealand. Ministry of Health, Wellington.
- Ministry of Health (2002). Guidelines for the Control of Methicillin-resistant Staphylococcus aureus in New Zealand. Ministry of Health, Wellington.
- ESR Public Health Surveillance <http://www.surv.esr.cri.nz/antimicrobial/esbl.php>