Multi-drug resistant organisms (MDRO) patient guidelines

Outlines the recommended approaches for the admission, care and treatment of patients with MDRO.

Who are these guidelines for?

All SCH employees and specialists who care for patients with or at risk of having multi-drug resistant organisms (MDRO).

Why is this important?

The global threat of microbial resistance is increasing. By employing a standardised approach to MDRO risk assessment and patient screening, we can reduce the risks of spread of antibiotic-resistant organisms in our hospitals.

Contents

Definitions

Term	Definition
Multi-drug resistant organisms (MDRO)	MDRO can be defined in two ways: 1. Organisms that are resistant to several antimicrobial agents to which they would normally be susceptible. 2. Organisms that are resistant to all but one or two antimicrobial classes, regardless of the mechanism of resistance (and

Term	Definition
	often susceptible to only one or two commercially available antibiotics). Such organisms include but are not limited to: • Methicillin-Resistant *Staphylococcus aureus* (MRSA) • Extended Spectrum Beta Lactamase-producing *Enterobacteriaceae* (ESBL) • Vancomycin-Resistant Enterococci (VRE) • Vancomycin Intermediate *Staphylococcus aureus* (VISA) • Carbapenemase-Producing Enterobacteriaciae (CPE) • Carbapenem-Resistant *Acinetobacter baumannii* (CRA) • New-delhi Metallo-beta-lactamase-1 (NDM-1) • Other multi-drug resistant Gram-negative organisms
Colonisation	The presence and multiplication of microorganisms without tissue invasion or damage.
Infection	The state produced by the establishment of an infective agent in or on a suitable host or a disease resulting from infection.

Patient risk assessment and screening

Prior to admission, all patients are assessed for MDRO risk factors.

This will determine if they meet the criteria for further screening and/or the Infection Prevention and Control precautions required if screening results are positive (or awaiting screening results).

Use the Patient MDRO screening and management flowchart.

There are four key risk factors for MDRO:

1. Known/previous MDRO.

2. Admitted to (for > 24 hours and/or had invasive procedure) or worked in a high risk NZ hospital* in last 12 months.

3. Admitted to (for > 24 hours and/or had invasive procedure) or worked in an overseas hospital in the last 12 months.

4. Overseas travel to a high risk country (Indian Subcontinent or South East Asia - refer to MDRO alert report) in the past 12 months.

**obtained via MDRO Cross Transmission Alert.*

NOTE: Not all patients have an identifiable risk but may still have an MDRO – *hence the importance of good Standard Precautions with all patients as these could be spread by close contact.*

These risk factors are identified from:

- Patient admission health questionnaire
- Current MDRO alerts on the patient management system
- Monthly MDRO alert report from the IPCN
- Ministry of Health updates

MDRO cross transmission alert

This is created within the network and distributed to all hospital IPCNs; the information is sourced from IPCN linkages with regional Infection Prevention and Control colleagues (Te Whatu Ora, other healthcare facilities).

The IPCN shares the MDRO outbreak alert report with clinical areas and medical specialists. The reports should include where cross transmission has occurred or emerging resistant organisms have been identified.

MDRO screening and management resources

The following flowcharts and resources provide guidance on screening and management processes aimed at preventing and minimising the spread of MDRO.

MDRO patient information leaflet

MDRO cross transmission alert template

CPE clinical information leaflet

CPE patient information leaflet

Patient MDRO screening and management flowchart

Care of a patient with a known/previous or at risk of having MDRO (colonisation or infection)

- There is no need to rescreen previously confirmed MDRO patients.
- If patients at risk of MDRO are identified pre-admission and screening results are not available at time of admission, Contact Precautions are needed.
- It is the responsibility of medical specialists to provide patients with the results of any MDRO screening. Patient education about MDRO can be undertaken by nursing staff, IPC link staff or the IPCN.
- Consult with clinical microbiologist before commencing antimicrobial treatment as not all patients with MDRO require additional antibiotics.

VRE/CPE/ESBL

- Decolonisation of patients with VRE, CPE and ESBL is not recommended
- Care for patients in Contact Precautions (see Transmission based (isolation) precautions) **UNLESS** risk assessed as low risk as follows:

Risk assessment
ESBL patients with confirmed ESBL *E. coli* (which is not commonly transmissible in healthcare settings) may be considered low risk and cared for using Standard Precautions **IF** they**:**
1. Are continent of faeces and urine 2. Do **not** have any invasive or indwelling devices on admission

MRSA

- For patients with history of MRSA, use of the full anti-staph bundle (ASB) is recommended (three applications of skin/nose treatment prior to surgery). Refer to Guidelines for use of the anti-staphylococcal bundle of care.
- Care for in Contact Precautions (see Transmission based (isolation) precautions) unless risk assessed as low risk as follows:

Risk assessment
Patients with a history of MRSA may be considered low risk and cared for using Standard Precautions **IF** they:

Risk assessment
1. **Do not** have pre-existing SKIN CONDITIONS 2. **Do not** have any invasive or indwelling devices on admission ***AND*** 3. Have completed the ASB bundle pre admission* (Exception: if admitted for endoscopy procedure only)
*If there is no time to complete the full ASB (3 applications) before admission, care for patient in Contact Precautions until this is completed during admission. Continue daily treatment until discharge.
Notes: 1. Overnight patients should continue to have ASB daily during their inpatient stay to further reduce risks of infection or spread to others. 2. For patients with a history of any *Staphylococcal infections* (**not** MRSA) use of the full anti-staph bundle is recommended, but contact precautions are **not** required.

Full/Alternative topical treatment

For RECENT OR NEWLY DIAGNOSED cases of confirmed MRSA and where there is an increased risk of post-operative infection (eg orthopaedic surgery), an attempt at decolonisation is possible using the following topical regime before admission:

NASAL	Mupirocin (Bactroban) or antiseptic (Betadine ointment if no allergies to iodine are identified) to the anterior nares twice a day.
BODY WASH*	Use of antiseptic washes for daily showers using an appropriate antiseptic (Chlorhexidine 4% or Povidone iodine in detergent solution).
HAIR	Hair washing twice weekly using the antiseptic wash (avoiding contact with eyes/ears/nose).
INFECTED SKIN LESIONS/WOUNDS	Consult a medical microbiologist if antibiotics are considered.
LENGTH OF TREATMENT	Recommended length of treatment is usually 5-7 days; it is recommended to continue to apply during inpatient period to reduce skin colonisation.

*Caution needed in paediatric patients or adults with chlorhexidine or betadine sensitivities.

Outbreak management

Refer to:

Outbreak management guidelines

For information on cleaning of the room and patient equipment, refer to: Transmission based (isolation) precautions.

Monitoring and reporting

The Infection Prevention and Control Nurse will receive a daily-automated report with the status of patients in the hospital that have been identified as MDRO risk.

A monthly automated report will also be received by each hospital IPCN.

References

- Ministry of Health (2019) Infection Prevention and Control and management of Carbapenemase-producing Enterobacteriaceae (CPE)
- Ministry of Health Guidelines for the Control of Methicilin Resistant *Staphylococcus aureus*in New Zealand (2002)
- Ministry of Health Guidelines for the Control of Multidrug resistant organisms in New Zealand (2007)
- Centre for Disease Control and Prevention (CDC): Facility Guidance for Control of Carbapenem-Resistant *Enterobacteriaeceae*(CRE) November 2015 Update
- Healthcare Infection Control Practices Advisory Committee (HICPAC) Management of Multidrug resistant organisms in Healthcare Settings (2006)

CONTENT CONTROL

Published Date: **30 Mar 2023**
Version: **3**
Site: **Network**

Content Owner: **Jane Barnett**
Authorised By: **Chief of Quality & Risk**

WATCH THIS CONTENT