MULTI-RESISTANT ORGANISMS (MRO) ADMISSION SCREENING

PRACTICE GUIDELINE ©

DOCUMENT SUMMARY/KEY POINTS

Infection Prevention and Control Practice Handbook (Jan 2020)

- http://www.cec.health.nsw.gov.au/__data/assets/pdf_file/0010/383239/IPC-Practice-Handbook-2020.PDF#page=124
- The NSW Clinical Excellence Commission produces and maintains the Infection Prevention and Control (IPAC) Practice Handbook. NSW Health organisations are to comply with the recommendations in the Handbook.
- Sections 7.3 and 7.4 of the IPAC Practice Handbook, and Section 9.1 of the Infection Prevention and Control in Healthcare Settlings PD2023_013 outlines Multi-resistant Organisms (MROs) admission screening requirements for healthcare settings.
- **All patients on admission to SCHN (elective, direct or emergency) must be assessed for recent admission (past 12 months) to an overseas hospital or another hospital or residential care with NSW or Interstate**. Patients must be placed in a single room and managed under Contact Precautions until screening results are known.
- Certain risk factors promote the transmission of MROs in healthcare environments.
- **Table 1** on the next page has been adapted from Table 19 in the Practice Handbook for paediatric purposes.
- Admission screening for MROs requires the collection of at least one swab set and/or faecal sample. Refer to **Table 2** for sample requirements.
- SCHN Contacts:
  - CHW Infection Prevention and Control Team: 98450534 or 98452534
  - SCH Infection Prevention and Control Team: 93821876

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1st January 2024	**Review Period**: 3 years
Team Leader:	Clinical Nurse Consultant	**Area/Dept**: Infection Prevention and Control

Date of Publishing: 12 January 2024 12:44 PM Date of Printing: 12 January 2024

CHANGE SUMMARY

- N/A – new document
- **12/01/24** – Minor review. Word/spelling errors corrected.

READ ACKNOWLEDGEMENT

- All clinical managers to be knowledgeable of the policy
- All Clinical staff involved in the treatment of inpatients
- All clinical SCHN staff working in the clinical areas are to read and acknowledge they understand the content of this policy.

TABLE OF CONTENTS

Purpose

The purpose of admission Multi Resistant Organism (MROs) screening for high-risk inpatient groups includes:

- Early identification of positive MRO colonised patients for early implementation of transmission-based precautions to prevent transmission of MROs to other patients, staff, or visitors.
- Pre-emptive antimicrobial therapy to reduce risk of surgical site infection and / or other infection.

Table 1: Specific MRO transmission risks

Adapted from Table 19, CEC HAI Handbook 2020

MRO transmission risk	Is admission screening needed?				
	MRSA	CPE/CRE	VRE	*ESBL*	*Candida auris*
Repatriation from any overseas hospital admitted to an inpatient area	Yes	Yes	Yes	Yes	Yes
Admission overnight (past 12 months) in an overseas hospital or residence in an overseas residential care facility	Yes	Yes	Yes	Yes	Yes
Admission to an extreme risk rated clinical inpatient area, including ICU, NICU, burns, renal dialysis, haematology, oncology and transplant units	Yes	Yes	Yes	Yes	
Transfers from another hospital within Australia or residential care settings. Including across the SCHN Network.	Yes	Yes	Yes	Yes	
Admission to or transfer from a ward in a facility with known prevalence or MRO outbreak	Yes	Yes	Yes	Yes	

- Refer to Table 2 for **specimen collection requirements**
- Refer to appendixes for **specific specimen collection procedures**
  - Appendix 1 – Collection of Nasal Swabs
  - Appendix 2 – Collection of Groin Swabs
  - Appendix 3 – Collection of Rectal Swabs

MRO Screening Process

Identifying patients requiring MRO screening, the Nursing Initial Assessment or Nursing Admission Assessment forms can be used. Following the completion of the admission form and MRO transmission risk is identified; an electronic order will be generated in the patient's eMR and IPAC will be notified via the Multi-patient Task list located in eMR.

Ordering specimens on eMR

At CHW:

- **MRSA:** Culture MRSA swabs (select swab sites)
- **Faeces** (stool or rectal swabs): Infection Control screen – faeces (this screening covers CPE, VRE & ESBL) – (preference at CHW is stool specimen over rectal swabs).
- ***Candida auris*:** Candida auris screen Infection Control.

At SCH:

- **MRSA:** MRSA screen
- **Faeces** (stool and rectal swabs): MRO rectal swab/stool specimen
- ***Candida auris:*** C. auris screening swabs

Table 2: Guide to specimen collection requirements

Adapted from Table 20, CEC IPAC Practice Handbook 2020

Microorganism	Specimen/s Required
MRSA	Nose (both nares) + throat (posterior oropharynx), groin perineum/umbilicus of the neonate, axilla, any moist surgical wounds, any areas of inflamed skin
CPE/CRE	Faeces or rectal* and any wound, ulcer, transcutaneous exit site(s) or urine (if indwelling or suprapubic catheter is present)
VRE	Faeces or Rectal* (preferred) and wound, ulcer, transcutaneous exit site(s) or urine (if indwelling or suprapubic catheter is present)
Candida auris	Bilateral axilla and groin, for neonate's add umbilicus.
Other Gram negatives e.g. ESBL	Faeces or rectal* and any wound, ulcer, transcutaneous exit site(s) or urine (if indwelling or suprapubic catheter is present)
Clostridium difficile	If diarrhoea is present. Faecal sample (**only loose stool** will be tested)

** There must be faeces visible on the rectal swab.*
***Note:** neutropenic patients must not have rectal swabs collected*

- See appendixes for **specific specimen collection procedures**
  - Appendix 1 – Collection of Nasal Swabs
  - Appendix 2 – Collection of Groin Swabs
  - Appendix 3 – Collection of Rectal Swabs

Definitions

Alert	Enabling of a communication warning flag that indicates current colonisation or infection in a patient's clinical records (see "Flagging", "De-flagging")
Antimicrobial Stewardship (AMS)	An ongoing effort by a health service organisation to optimise antimicrobial use in order to improve patient outcomes, ensure cost-effective therapy and reduce adverse sequelae of antimicrobial use, including antimicrobial resistance.
Candida auris	Candida auris is a species of fungus that grows as yeast. It is one of the few species of the genus Candida which cause candidiasis in humans. Often, candidiasis is acquired in hospitals by patients with weakened immune systems. It can cause serious bloodstream infections, currently one in 3 people will die who acquire an infection.
Colonisation	Detection of an organism from a site (usually skin, throat, nose or perineum, and/or chronic ulcers) that shows no sign of invasive infection.
Contact Precautions	A type of transmission-based precautions used to interrupt the transmission of infectious agents that are spread by direct or indirect contact with the patient or the patient's environment.
Endogenous	Originating from within or on the body
Enterobacteriaceae	*Enterobacteriaceae* are the largest family of gram-negative bacteria causing human infection. Common pathogens include *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae* and *Proteus species*. *Enterobacteriaceae* colonise the normal human gastrointestinal tract, generally without causing disease. However, can also cause common infections, including urinary tract, abdominal and bloodstream infections.[2]
Flag	Enabling of an Infectious Risk Alert that indicates current colonisation or infection in a patient's clinical records (see "Alert", De-Flagged")
Infection	Infection is the invasion of a host organism's bodily tissues by microorganisms and their subsequent multiplication, resulting in disease-causing symptoms and the reaction of host tissues to these organisms and the toxins they produce.
IPAC	Infection Prevention and Control
MRO	Multi-Resistant Organism

References

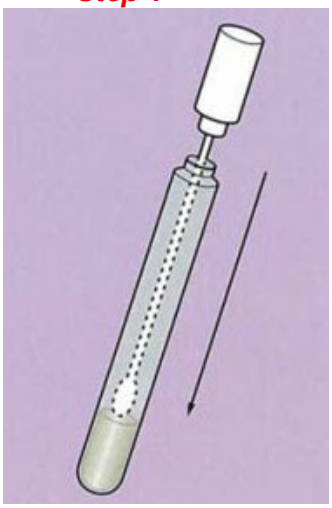
1. Australian Commission on Safety and Quality in Health Care (ACSQHC) Preventing and Controlling Healthcare Associated Infection Standard. (accessed 26/10/23)
2. Australian Commission on Safety and Quality in Health Care. Recommendations for the control of carbapenemase-producing Enterobacteriaceae (CPE). A guide for acute care health facilities. 2021. Accessed 26/10/23)
3. Clinical Excellence Commission (2020), Infection prevention and control practice handbook. Principles for NSW public health organisations. (accessed 26/10/23)
4. NHMRC - National: Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019). (accessed 26/10/23).
5. NSW Ministry of Health GL2019_012 Surveillance & Response for Carbapenemase-Producing Enterobacterales (CPE) in NSW Health Facilities (accessed 26/10/23)
6. Paediatric Improvement Collaborative Clinical Practical Guideline, COVID-19 Swabbing (accessed 26/10/23).

Appendix 1 – Collection of Nasal Swabs for MRSA

PATIENT MUST NOT COLLECT THEIR OWN SPECIMENS

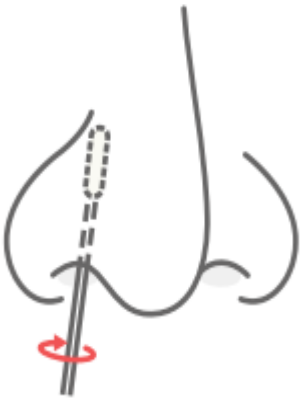
1. Explain procedure to patient / parent/carer and obtain verbal consent (where appropriate)
2. Perform hand hygiene and don PPE (disposable gloves and apron / gown)
3. Pre-moisten the swab (blue top)
4. Using the same swab, hold with a pencil grip and insert horizontally (with child in sitting position) into one nostril parallel to the palate. Insert to the following depth for age range or until resistance is met:
   - <2 years - 1 cm
   - 2-6 years - 1.5 cm
   - 6-12 years - 2 cm
   - >12 years - 2-3 cm
5. Rotate swab 5 times against the nasal wall. Follow same method for other nostril.
6. Insert swab into the transport medium (pathology tube) and label tube with patient identification
7. Place pathology tube with swab into pathology specimen bag.
8. Send swab in bag and pathology request promptly to the microbiology laboratory
9. Remove PPE, perform hand hygiene
10. Label specimen and pathology request form correctly. Send to pathology
11. Document collection of specimen in patient's healthcare record (eMR)

Step 1

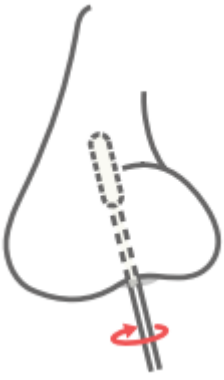


Tip: *Pre-moisten the swab using gel medium in the pathology tube*

Step 2



Step 3



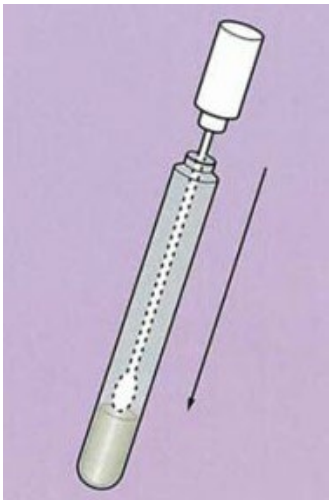
Use the one (1) same swab in both nostrils

Appendix 2 – Collection of Groin Swabs for MRSA

PATIENT MUST NOT COLLECT THEIR OWN SPECIMENS

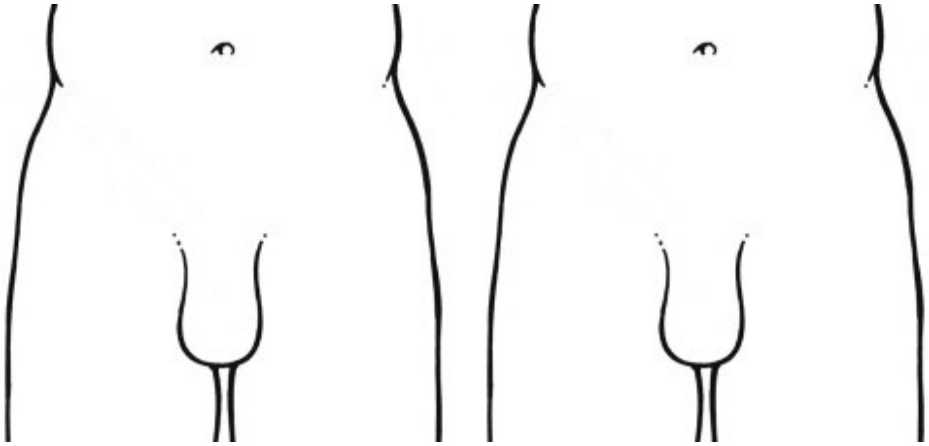
1. Explain procedure to patient / parent/carer and obtain verbal consent (where appropriate)
2. Perform hand hygiene.
3. Ask or assist patient to expose both groins
4. Perform hand hygiene and don PPE (disposable gloves and apron / gown)
5. Pre-moisten the swab (blue top)
6. Swab each groin area a minimum of **5 times using the same swab:**
   - Swab must be inserted along the groin crease / skin fold towards the genitals
   - Gently slide and rotate (at the same time) x 5 times the swab in the groin crease/skin fold
7. *Repeat the process in the 2nd groin area using the same swab*
8. Insert swab into the transport medium (pathology tube) and label tube with patient identification
9. Place pathology tube and bag with swab into pathology specimen bag.
10. Send swab and pathology request promptly to the microbiology laboratory
11. Remove PPE, perform hand hygiene
12. Document collection of specimen in patient's healthcare record (eMR)

Step 1



Tip: *Pre-moisten the swab using gel medium in the pathology tube*

Step 2 ***Step 3***

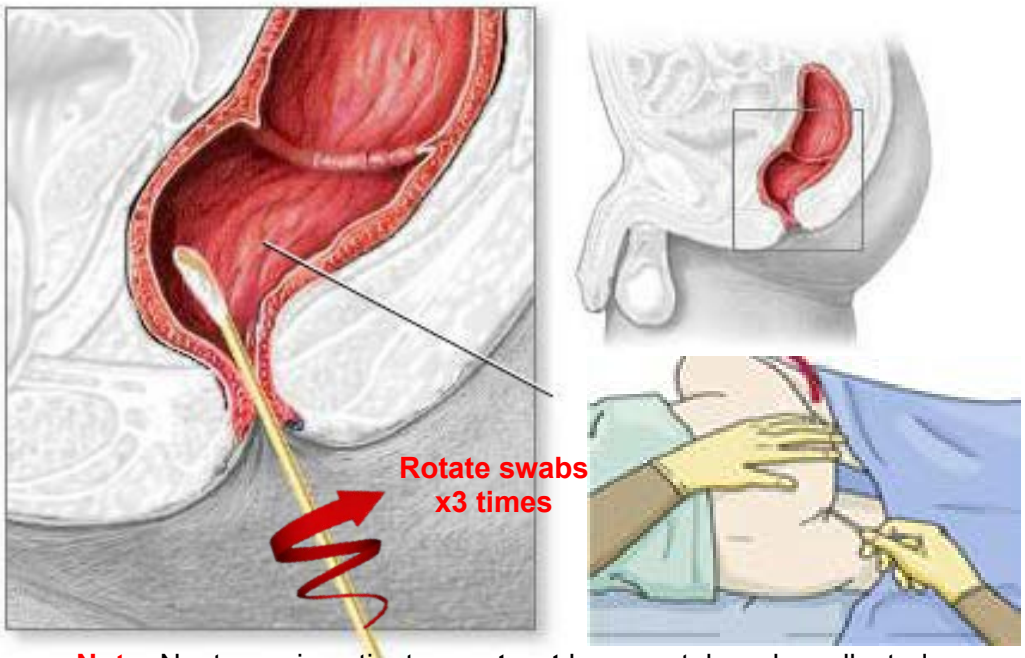


Use the one (1) same swab in both groin areas

Appendix 3 – Collection of Rectal Swab/Stool for MROs

Preference is for stool sample collection: Neutropenic patients must not have rectal swabs collected.

1. Explain procedure to patient/parent carer and obtain verbal consent (where appropriate)
2. Perform hand hygiene
3. Position patient comfortably on their side (left lateral position) with upper knee slight bent towards chest
4. Perform hand hygiene and don PPE (disposable gloves & apron / gown)
5. Pre-moisten the swab (blue top) using gel medium in pathology tube
6. Insert swab into rectum just beyond the anal sphincter (or into stoma if patient has colostomy etc.)
7. Rotate the swab carefully 3 times
8. Gently remove the swab, turning the swab slowly as you remove it. **Check the swab is visibly soiled with faecal material**.
9. Insert swab into the transport medium (pathology tube) and label tube with patient identification
10. Place pathology tube with swab into pathology specimen bag.
11. Send swab, bag and pathology request promptly to the microbiology laboratory
12. Remove PPE, perform hand hygiene
13. Label specimen & pathology request form correctly. Send to pathology.
14. Document specimen collection in patient's healthcare record (eMR)



Note: Neutropenic patients **must not** have rectal swabs collected.
Ensure swab is visibly soiled (i.e. there is faecal matter on the swab stick)