OFFICIAL

SA Health

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Methicillin-resistant *Staphylococcus aureus* (MRSA) Infection Prevention and Control (IPC) Clinical Guideline

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Methicillin-resistant Staphylococcus aureus (MRSA) Clinical Guideline

Contents

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1. Title of clinical guideline

Methicillin-resistant Staphylococcus aureus (MRSA) Infection Prevention and Control Clinical Guideline

2. Key points

- Guidance covers inpatient, peri-operative, outpatient, residential, community, and transport settings.
- MRSA can spread between patients and environments.
- Transmission occurs mainly via contact with contaminated hands, equipment, or surfaces.
- Apply standard and contact precautions for MRSA cases.
- Use targeted screening for high-risk patients.
- Record MRSA status in patient/resident records.
- Outbreaks require investigation, contact screening, environmental cleaning, and IPC staff input.
- Notify receiving facilities before patient transfers and include IPC requirements.
- MRSA status must never limit access to care or healthcare facility/residential admission.

3. Clinical Guideline statement

3.1 Purpose of guideline

This clinical guideline outlines exemplar guidance to minimise the risk of the spread/transmission of Methicillin-resistant *Staphylococcus aureus* (MRSA) in healthcare settings, e.g. acute care settings including emergency, outpatient, dialysis units, residential care facilities including nursing homes, hospices, hostels, psychiatric facilities, correctional health, and rehabilitation facilities.

Guidance is also provided for organisations providing healthcare in the community (e.g. home nursing organisations, medical practices, ambulance services) or any place where people colonised or infected with MRSA may receive healthcare.

The Infection Prevention and Control and Healthcare Associated Infection (HAI) Surveillance and Reporting Policy is the parent policy to this Methicillin-resistant *Staphylococcus aureus* (MRSA): Infection Prevention and Control Clinical Guideline.

This guideline provides a standardised approach for identifying, managing, and preventing the spread of MRSA across all SA Health services, while ensuring that patient care and access to healthcare are not compromised.

3.2 Scope of guideline

This clinical guideline applies to all employees and contractors of SA Health; that is all employees and contractors of the Department for Health and Wellbeing (DHW), Local Health Networks (LHNs), including statewide services aligned with those Networks and SA Ambulance Service (SAAS).

4. Background

MRSA is a strain of *S. aureus* resistant to beta-lactam antibiotics, limiting treatment options and increasing the risk of adverse outcomes. While *S. aureus* is commonly found on the skin and in the nasal passages without causing harm, MRSA can cause infections ranging from minor skin conditions to severe, life-threatening diseases.

MRSA is mainly transmitted via direct contact - often through the hands of healthcare workers, or indirectly via contaminated equipment or surfaces. Patients with invasive devices, chronic wounds, compromised immunity, or frequent healthcare exposure are at increased risk.

Effective infection prevention and control (IPC) requires early identification, adherence to standard and transmission-based precautions, environmental cleaning, and clear communication during patient transfers. This guideline provides a standardised framework for MRSA management across SA Health services, aligning with national IPC recommendations.

5. Definitions, acronyms and abbreviations

Definitions

Aircraft	means any vehicle that can travel through the air. This includes all forms of airplanes and helicopters
Colonisation	the presence, growth, and multiplication of micro-organisms without observable signs or symptoms of infection
Fomites	means any inanimate object that can carry and spread infectious agents. This includes medical instruments and patient equipment such as commodes, shower chairs, patient lockers, over way tables that have been contaminated with infectious agent(s).
Healthcare acquired infection	Means infections that are acquired as a direct or indirect result of healthcare.
Infection	invasion of micro-organisms into host tissues with replication of the organisms accompanied by signs or symptoms of illness.
Microscopy, culture and sensitivity (MC&S)	Microscopy, culture and sensitivity (MC&S) is the term often used when sending microbiological samples to the laboratory**.**
Methicillin-resistant *Staphylococcus aureus* (MRSA)	strains of *Staphylococcus aureus* that are resistant to many of the antibiotics commonly used to treat infections. Epidemic strains have a capacity to spread easily from person-person.
Statewide services	Statewide Clinical Support Services, Prison Health, SA Dental Service, BreastScreen SA and any other state-wide services that fall under the governance of the Local Health Networks.
***Staphylococcus aureus* (*S. aureus*)**	a bacterium that is a major cause of community and healthcare related infections. The pathogenic potential of this organism ranges from mild skin infections (e.g. boils) to serious systemic illness such as sepsis, osteomyelitis and endocarditis. It is a common inhabitant of the human body with approximately 20 - 30% of the adult population having persistent or intermittent carriage.

Vancomycin intermediate-resistant S. *aureus* (VISA/hVISA/VRSA)	strains of MRSA that have acquired reduced susceptibility to vancomycin. VISA is a strain with reduced susceptibility to vancomycin. Hetero-vancomycin-intermediate-resistant *Staphylococcus aureus* (hVISA) is a strain of VISA which shows variable resistance to vancomycin in the laboratory, making them difficult to detect. VRSA is MRSA that has acquired complete resistance to vancomycin.

Acronyms

ACSQHC	Australian Commission on Safety and Quality in Healthcare
DHW	Department of Health and Wellbeing
EMR	Electronic Medical Record
HCF	Healthcare Facility
ICMS	Infection Control Management system
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
LHN	Local Health Network
MRGN	Multi-resistant Gram-negative bacteria
MSSA	Methicillin-susceptible Staphylococcus aureus
PEG	Percutaneous Endoscopic Gastrostomy (PEG feeding tube)
PPE	Personal protective equipment
OACIS	Open architecture clinical information system
RCF	Residential Care Facilities
SASS	South Australia Ambulance Service
SCSS	Statewide Clinical Support Services
TBP	Transmission-based precautions
VRE	Vancomycin-resistant Enterococcus

6. Clinical guidance

6.1 General principles

National Infection Prevention and Control (IPC) guidelines provide information and guidance to address the risk of spread and/or transmission of MRSA in healthcare facilities (HCFs). These include:

- Implementation of standard and transmission-based precautions (TBP), including hand hygiene as per the 5 Moments for Hand Hygiene, personal protective equipment (PPE) and environmental controls.

- Patient risk-based screening in accordance with current national guidelines.
- Surveillance, data analysis and reporting at the local and state level.
- Antimicrobial stewardship
- Note: At no time should a person's MRSA status interfere with the provision of appropriate, high-quality healthcare. No person in South Australia should be refused admission to any healthcare facility or have their healthcare compromised solely due to being colonised or infected with MRSA. This includes the right to return to their place of residence.

Reservoirs of MRSA

- MRSA can be found in and on a person's nose or throat or on the skin, with no apparent ill effects or symptoms, this can be known as colonisation.
- MRSA can also cause infections and in the care setting, people who may have lowered resistance or who have breaks in their skin due to surgery, indwelling devices, chronic wounds or required treatments, may be more susceptible to either MRSA colonisation or infection.
- Environmental surfaces or fomites (including medical instruments and patient equipment such as commodes, shower chairs, patient lockers, over way tables) that come into contact with staff or patients may also become contaminated.

Mode of transmission

- The most likely modes of transmission of MRSA are:
  - direct contact - by contaminated hands of healthcare personnel or colonised patients.
  - indirect contact - by contact with contaminated medical and patient care equipment or environmental surfaces.

Factors that may increase the risk of transmission of MRSA include:

- People colonised with MRSA have the potential to develop a MRSA related infection.
- Effectiveness and compliance with recommended IPC practices.
- Patient associated factors e.g. uncontrolled diarrhoea or wound discharge not contained by dressings and other factors as per clinical assessment.
- Previous infection or colonisation of MRSA.
- Health conditions resulting in frequent admissions to any healthcare facility and healthcare interventions e.g. prolonged antibiotic treatment.
- Transfers from other acute care facility, particularly one known to have a high prevalence of MRSA.
- Residence in long term care facilities.
- Wounds that have not healed (e.g. burn, surgical incision, chronic wounds).
- A number of co-morbidities.
- Locales or populations with a high prevalence of community strains of MRSA.
- Long-term invasive devices.

Note: Patients identified with MRSA by routine screening and without signs and symptoms of infection, maybe colonised rather than infected, however for interpretation of results, refer to local policies and procedures and clinical advice.

6.2 Surveillance and screening

Routine HCF admission screening of all patients/residents is not currently recommended; however, a selective targeted risk-based surveillance program may be considered by HCFs.

An active selective surveillance program should be in place that takes into account the factors that increase the risk of acquisition and is based on the prevalence of MRSA within the facility. The goal of a MRSA surveillance program includes to minimise the risk of MRSA and to identify patients who are either colonised or infected with MRSA in a timely manner and to enable implementation of transmission-based (contact) precautions. IPC actions aim to minimise the risk of transmission / spread of MRSA and promote patient safety.

Patient consent to screening:

- Patients or residents being tested for MRSA should provide consent and be provided with information explaining the specimen collection process and the significance of the test results. Required documentation should be completed. Refer to local policies and procedures.

Screening on admission

- To assist in the detection of MRSA carriage that may be present on admission, screening of the following patient groups is recommended:
  - Transfers from another acute care facility particularly one known to have a high MRSA prevalence e.g. large metropolitan hospital.
  - Transfers from long term care residential aged care and disability care facilities.
  - Patients with chronic unhealed wounds or broken skin.
  - Patients with indwelling medical devices (i.e. long-term vascular access, indwelling urinary catheter, percutaneous endoscopic gastrostomy feeding tubes, wound drains).
  - Selected pre-operative patients – Prior to joint replacement, cardiothoracic procedures, prosthetic implants e.g. major vascular implants – refer to local policies and procedures.
  - High risk patient groups e.g. ICU/high dependency, spinal and burns units.
  - Other risk groups based on outbreak epidemiology.

Note: Facilities can also undertake local risk assessments to guide local screening approaches e.g. some facilities may choose not to screen patients in certain circumstances, such as:

  - when the patient is expected to be an inpatient for less than 24 hours and there are no other known MRSA risk factors
  - in community and mental health settings where the risks of infection are generally lower.

Local risk assessment and decisions should be made in conjunction with the facilities infection prevention control staff and other relevant clinicians and should be clearly documented. For further information regarding screening in small acute facilities, residential care, community and mental health settings refer to the relevant sections within this document.

For further information on screening refer to *Appendix 1 – MRSA Screening Flowchart*

Pre-operative screening for MRSA

- To minimise the risks associated with MRSA surgical site infections, patients undergoing selected surgical procedures (including some surgeries that involve implantable or prosthetic devices) may be considered for pre-operative screening such as:
  - cardio-thoracic surgery
  - major orthopaedic surgery e.g. joint replacement
  - major vascular surgery
  - surgery where the patient has a history of MRSA.
- In these instances, it may also be desirable to screen for all types of *Staphylococcus aureus* both MRSA and methicillin-*susceptible Staphylococcus aureus* (MSSA). The aim of such screening would be to assist the clinical care team assess the need for decolonisation procedures and/or suitable antibiotic prophylaxis prior to surgery. (Refer to Decolonisation on page 10).

On-going surveillance in acute care facilities

- Performing regularly scheduled MRSA surveillance patient screening can be considered for high-risk patients such as those in:
  - intensive care units
  - burns units
  - renal and dialysis units
  - locations of known increased or high MRSA prevalence.

In these areas it is suggested that screening of all patients be in consultation with the IPC team, infectious diseases unit or other clinical care team advice. MRSA screening can include on admission and at regular intervals e.g. weekly, until discharge from the ward / unit.

For surveillance purposes, it is not recommended to continue to undertake regular MRSA screening of a patient who on admission or during the admission returns a positive MRSA screening test result. Refer to local clinician advice for screening and testing requirements.

Note: The patient should be provided with information explaining the specimen collection process and the significance of the test results. Obtain verbal consent prior to the collection of any swabs and ensure this has been documented.

Screening methods

- Recommended screening specimens can include:
  - Multiple sites including one from the nose and another mucosal surface.
  - Screening swab sites can include anterior nares (nose), skin lesions and wounds, sites of catheters, catheter urine, ostomy sites, groin/ perineum, tracheostomy and other skin breaks in all patients, and sputum from patients with a productive cough.
  - Where maximum sensitivity is required, consideration should be given to adding a throat swab.
  - The umbilicus should be sampled in all neonates.

Collection of specimens

- Correct method for specimen collection is important, this includes:
  - Follow LHN, SCSS and manufacturer's and/or laboratory instructions for specimen collection (e.g. swab or fluid sample) this can include:

  - Prior to taking wound swabs, clean away surface debris and exudate with saline or other recommended as per wound instructions.
  - Wound swabs should be placed in transport medium.
- Swabs should be clearly labelled as per LHN/SCSS requirement, including the site of collection.
- The pathology request form or EMR request should include relevant information including “MRSA screen”.
- The surveillance screening specimen(s) and the request form should be sent to the laboratory as soon as possible.
- If a swab or specimen is not taken for surveillance screening reasons and has been ordered by a clinician and taken for clinical reasons, the request form or EMR request should include microscopy, culture and sensitivity (MC&S).

6.3 Clearance

Screening of patients for MRSA clearance and the discontinuation of TBP for MRSA may be undertaken by individual facilities based on local risk and clinical assessment. Such screening should be outlined in a documented clearance protocol. The decision to discontinue TBP should always be made in conjunction with infection prevention and control and appropriate clinical staff of the facility.

> Patients may be considered to be “clear” of MRSA colonisation at the time of testing if as per current national infection control guidelines the following criteria are met:

- more than **three months** have elapsed since the last positive specimen
- all wounds are healed (some settings will have patients that always have chronic wounds, making clearance difficult; in these circumstances discussion with the IPC team and/or Infectious Diseases Physician is recommended)
- no indwelling devices are present (however, consider a risk assessment and consult with the Infection Control team or Infectious Diseases Physician for patients with permanent indwelling devices)
- no exposure to MRSA specific antibiotic therapy **in the past three months** (if unsure, seek medical advice from the patient’s/resident’s medical practitioner)
- no exposure to antiseptic body washes for at least two weeks prior to screening
- consecutive sets of **negative screening swabs** (from sites referred to in collection of specimens in Surveillance and Screening Section above) on two separate occasions.

Note: The above criteria constitute an example of recommended requirements for MRSA clearance; however, individual institutions may apply alternative criteria according to their patient population and risk assessment.

Note: Do not continue to screen for MRSA clearance during the admission if a positive result is returned.

Patients who return negative swabs may still have undetectable numbers of the organism present. This may explain why subsequent MRSA test cultures can return MRSA positive results following negative results, especially if the patient has had recent antibiotic treatment. Clearance swabs provide information regarding the patient’s MRSA status at the time of testing only and repeat testing may still be necessary on subsequent admissions, especially to a high-risk clinical unit or surgery.

6.4 Decolonisation

Staphylococcus aureus decolonisation treatment therapy can be defined as the administration of topical antimicrobial or antiseptic agents, with or without systemic antimicrobial therapy, to *Staphylococcus aureus* colonised persons for the purpose of eradicating or suppressing carriage.

Although there is no proven long-term effectiveness of decolonisation strategies and there are potential reported risks in increasing mupirocin resistance, decolonisation is strongly recommended in certain circumstances including pre-operatively for some surgeries that involve implantable or prosthetic devices such as:

- cardio-thoracic surgery
- major orthopaedic surgery, i.e. joint replacement
- major vascular surgery
- there can be two parts to a decolonisation program:
    - Body Wash: The use of a Chlorhexidine 2-4% (or other antibacterial agent such as Triclosan if allergy to Chlorhexidine) body and hair wash may be recommended in place of normal soap/shampoo, used once a day for 5 days prior to surgery and again on the day of surgery.
    - Nasal Ointment: Mupirocin nasal ointment (antibiotic cream), twice a day for 5 days prior to surgery.

LHN and SCSS should provide the patient with information. Refer to exemplar the Staphylococcus aureus decolonisation consumer fact sheet for further information and also specific local policy and procedures.

6.5 Communication of results

When the laboratory testing confirms the isolation of a MRSA from a patient (infected or colonised), key personnel should be notified as soon as possible, to ensure that appropriate IPC actions and patient information is initiated including TBP. Key people for communication of results include:

- the medical practitioner responsible for the care of the patient
- infection prevention and control (IPC) staff
- the team leader and primary nurse of patient
- the bed manager/ duty nurse manager
- other personnel as may be specified in the facility's MRSA procedure
- the patient should be informed of their results by their clinician or delegate.

Note: Where IPC staff are responsible for receiving and actioning MRSA test results and the notification occurs outside the normal working hours of the IPC unit hours of operation, there should be a system in place to ensure results are communicated and actioned as soon as possible.

Recommended actions in response to a positive MRSA test result include:

- Alerting of MRSA status on patient records, including:
    - The electronic and/ or paper medical record (including EMR, OACIS and ICIMS) including information on the resistance category, specimen site and any other relevant infection control information.
    - When a decision has been made to discontinue TBP, the IPC alert can be retired/removed. Ensure that reasons for discontinuation of TBP are documented. Future risk assessment and screening should be undertaken in accordance with the Surveillance and Screening Section of this document.

6.6 Transfer of patients between facilities

Patients with MRSA should not be refused admission or transfer to any healthcare facility based on their MRSA results and the following actions are recommended:

- Clinical staff arranging the transfer should notify the receiving health facility before transfer of a patient with MRSA, to ensure appropriate bed management and TBP.
- Medical/nursing documents accompanying the patient should clearly state details relating to the patient's MRSA test results and be communicated verbally during the clinical handover process.
- If the transfer is being arranged and conducted by a healthcare provider, e.g. SA Ambulance Service, handover and transfer information should include the required IPC precautions.
- Transport via clinic car or taxi usually requires standard precautions provided all discharging wounds are covered and any incontinence issues have been addressed. If clinical care is required refer to local policy and procedures.
- If a receiving facility cultures a MRSA from a patient within 48 hours of transfer, they should advise the transferring institution of the positive result.

6.7 Outbreak management

An outbreak is defined as an increase in the number of cases (colonisations or infections) above the number normally occurring in a particular healthcare setting over a defined period of time. In a hospital setting, this may be indicated by a cluster of cases, including two or more epidemiologically linked cases, occurring in the same bay, ward, or clinical service over a short period of time, e.g. one week.

If an outbreak is suspected, this will require the implementation of a number of possible actions to assist with the investigation, such as contact screening, environmental testing, additional cleaning and strain typing etc.

The LHN Infection Prevention and Control Unit and or other relevant staff should liaise with the local Clinical Microbiologist/Infectious Diseases Consultant and senior nursing/ medical personnel.

Identification of any potential contacts or other cases may require screening of patients who had contact at any time after admission of the first identified positive case. It is acknowledged that in some healthcare settings, where routine screening of patients is not commonly undertaken, identification of the index patient may be difficult because of the potential spread of the organism before it is detected.

For further guidance on suggested actions and investigations refer to the Australian Guidelines for the Prevention and Control of Infection in Healthcare, section 3.4 – Management of multi-resistant organisms and outbreak situations. The Infection Control Service of the Department for Health and Wellbeing can be contacted for assistance.

6.8 Management of patients with MRSA in inpatient areas of acute healthcare facilities

Standard and transmission-based precautions

- All patients regardless of their infectious status require the implementation of standard precautions. Refer to www.sahealth.sa.gov.au/infectionprevention
- TBP – (Contact) are recommended for patients/residents identified with MRSA.

Note: In addition to standard precautions and TBP (contact), TBP (Droplet) may be indicated for patients known to have respiratory infection of colonisation with MRSA.

It is recommended that healthcare facilities adopt a risk management approach when formulating strategies and local policies and procedures to respond and manage MRSA within a health facility with limited side-rooms.

Containment of MRSA in acute healthcare facilities includes the implementation of infection prevention control measures, this can include targeted education sessions for staff.

The organisation's alert mechanism for MRSA should be implemented. Facilities are encouraged to develop, in conjunction with their laboratory services, a flow chart or protocol for staff to follow to facilitate internal notification processes.

Patient placement

- For patients with a MRSA alert or positive test result, a single room with ensuite facilities or dedicated bathroom is desirable; but if these facilities are not available and a shared bathroom is to be used, refer to local risk assessment procedures to guide shared use and environmental controls.
- If there are limited facilities for isolation, via a risk assessment, prioritise isolating those patients with conditions that may represent an increased risk for MRSA transmission, e.g. presence of chronic wounds or exfoliative skin conditions, or patients with poor hygiene practices.
- Cohorting of patients with MRSA is not generally recommended.
- For further guidance refer to Appendix 3 - Bed management guide for patients in acute care facilities.

Note: Small acute hospitals, for example those that do not perform high risk surgery such as joint replacement, cardiothoracic surgery, cardiac implants or vascular surgery, should perform a risk assessment for placement of the patient if a single room is not available. (Refer to Section 6.9 Management of patients with MRSA in small acute healthcare facilities.)

Personal protective equipment (PPE)

Gloves

- The use of gloves (sterile or non-sterile dependent on the task being performed) is recommended as per standard precautions and when direct contact with either the patient or the patient's environment is anticipated. The use of gloves does not negate the need for hand hygiene, when gloves are worn hand hygiene should be performed as per the 5 moments for hand hygiene.
- Correct glove use includes performing of hand hygiene before and after glove use, changing gloves between episodes of care on same patient, and on leaving the patient room area and

as per the 5 moments for hand hygiene.

Gowns or aprons

- The choice of gown or apron can be based on a local risk assessment, including consideration of the procedure being undertaken and the risk of exposure of the healthcare worker. If an apron is used, it is important to ensure that wrists and forearms are included in the hand hygiene procedure.

Patient equipment

- Ensure that only required amounts of equipment and supplies are taken into the room.
- Dedicate the use of non-critical items (e.g. stethoscope, sphygmomanometer etc.) to a single patient, where possible.
- Patients can use communal phones; however, ensure that the patient performs hand hygiene using alcohol-based hand rub prior to using the phone and that the phone is decontaminated using a combined detergent disinfectant solution or wipe prior to returning to general use.
- Store patient charts and medical records outside of the patient's room.
- Mobile computers for EMR i.e. Workstations on Wheels, should be cleaned after use as per local procedures and manufacturer's instructions on leaving the patient room.

Cleaning

Cleaning should be performed according to local policies and procedures. Exemplar cleaning guidance is available in the *SA Health Cleaning Standard.* Key points include:

- Use a Therapeutic Goods Administration (TGA) listed or registered hospital grade disinfectant (preferably with label claims against MRSA) for routine cleaning of the patient environment.
- If using sodium hypochlorite for environmental cleaning and disinfection, refer to manufacturer's instructions and also exemplar information in the SA Health Fact Sheet for healthcare professionals *Guide to dilution for chlorine-based disinfectant solutions.*
- Pay particular attention to all frequently touched surfaces, such as bedrails, commodes, toilet, hand basins and taps.
- Ensure that all cleaning equipment and solutions are changed after cleaning the room and before moving to the next patient area/room.
- Decontaminate all patient equipment using detergent and disinfectant solution or combined detergent and disinfectant wipe(s) prior to use on or by another patient.
- The room may be re-used once cleaning and disinfection has been completed and all surfaces are dry.

Infection control signage

- TBP signage which includes PPE guidance, can be placed outside of the patient's room.

Exemplar signage can be accessed: Australian Commission on Safety and Quality in Healthcare Transmission-Based Precaution Signage.

Movement of patients within the hospital

- A patient's MRSA status should not compromise patient management and care.
- Patients with MRSA do not have to remain in their room and may go outside their isolation room for diagnostic testing and other activities. It is recommended that any lesions/wounds are covered, and exudate contained.
- Request the patient not to visit other patients during their hospital admission.
- Encourage the patient to perform hand hygiene before leaving their room.
- Staff accompanying patients can wear PPE if direct patient care is anticipated and should perform hand hygiene as per the 5 moments for hand hygiene.

Visitors

- Generally, there is no requirement for visitors to wear PPE, however there may be certain situations where PPE may be considered e.g. when a visitor is providing direct care and intends to visit another patient in the same facility.
- Advise visitors to perform hand hygiene prior to leaving the room. The patient's clothing may be taken home in a plastic bag for washing using a normal wash cycle.
- Provide a SA Health MRSA Consumer fact sheet.

Consumer education

- Patients should be provided with information by their healthcare provider.
- Provide patients with information about how to minimise the risk of MRSA transmission whilst in hospital, and once discharged.
- Refer to the exemplar information SA Health MRSA Consumer fact sheet.

Staff colonised or infected with MRSA

- Staff who are colonised or infected with MRSA should not be discriminated against.
- Staff who become aware of their MRSA positive status are under no legal obligation to inform their employer.
- All staff should be aware of their responsibilities for safe practice in accordance with relevant standards and guidelines.

6.9 Management of patients with MRSA in small acute healthcare facilities

An exemplar *SA Health Bed Management Toolkit: For infectious disease and multi-resistant organisms* is available to assist staff risk assess and determine placement of patients with MRSA infection/colonisation. Also refer to *Appendix 3: Small Healthcare facility bed management flow chart* and local policies and procedures.

6.10 Management of patients with MRSA in the peri-operative setting

Standard and TBP apply and also refer to local policies, guidelines and procedures specific to this setting.

Additional IPC guidance for this setting includes:

- Pre-theatre
  - Ensure that all patients, regardless of infectious status, shower or bathe and put on a clean theatre gown as close as possible to the scheduled procedure time.
  - If the patient is an inpatient, change the bed linen as close as possible to the scheduled procedure time.
  - Clean bed rails and frequently touched surfaces of the bed with detergent and disinfectant solution or wipes prior to transport to the operating theatre.
  - Patients may wait in a "holding area" provided standard precautions are adhered to; if close physical contact (i.e. physical examination) is anticipated gloves and a long-sleeved gown are required with strict attention to hand hygiene.
- Theatre environment
  - Staff involved in close physical patient contact (e.g. transferring patient from bed/barouche to operating room table) should wear a long-sleeved gown and gloves over theatre clothes. These should then be discarded or placed in a linen trolley if reusable immediately after patient contact and hand hygiene should be performed.
  - All routine theatre equipment is to remain in the operating room.
  - Patient case notes (paper or electronic) should be available in the theatre. Gloves should be removed, and hand hygiene performed before and after documentation.
  - Designate a "contact" and "non-contact" staff member to decrease the number of staff having direct contact with the patient (Refer to *Appendix 2*).
  - Electronic equipment, e.g. anaesthetic equipment, should be decontaminated by wiping over with a detergent disinfectant solution or wipe according to the manufacturer's instructions.
  - There are no special requirements for the management of waste, linen and instruments used in the theatre environment. These items should be managed according to standard precautions and instruments according to AS 5369:2023 - Reprocessing of reusable medical devices and other devices in health and non-health related facilities.

Note: There is no special requirement to place the patient at the end of the operating list, since routine cleaning procedures between patients are sufficient to prevent transmission.

- Post-theatre (recovery)
  - Patients with a multi-resistant organism to recover in a designated area.
  - Staff involved in close physical patient contact e.g., transferring patient from barouche to bed, should wear appropriate PPE e.g. a long-sleeved gown and gloves over theatre clothes. These should then be doffed and discarded or placed in a linen trolley if reusable immediately after patient contact and hand hygiene should be performed.

- When the patient is transferred from the perioperative setting clean all surfaces and patient care equipment in the patient zone with an appropriate detergent/disinfectant.
- Patient privacy curtains do not require changing unless visibly soiled.

6.11 Management of patients with MRSA in outpatient settings – outpatient clinics, emergency, radiology, dental, primary care

Standard and TBP apply and also refer to local policies, guidelines and procedures specific to this setting.

Additional IPC guidance for this setting includes:

- All patients, regardless of infectious status, should perform hand hygiene on admission to the area.
- Patients can sit in the waiting area providing all discharging wounds are covered with a clean dressing and there are no visible signs of faecal soiling.
- PPE is recommended for close physical contact (e.g. wound care or assistance with enterostomies and/or toileting).

6.12 Management of patients with MRSA in dialysis centres

Standard and TBP apply and also refer to local policies and procedures specific to haemodialysis settings.

Additional IPC guidance for this setting includes:

- MRSA colonisation should not prevent inpatient or outpatient treatment in dialysis centres.

6.13 Management of patients with MRSA in community home healthcare

Standard and TBP apply and also refer to local policies, guidelines and procedures specific to this setting. Community healthcare settings can include healthcare provided in a person's home environment.

Additional IPC guidance includes:

- Only take required items and equipment into the home.
- General waste generated in the care of the patient (excluding sharps) may be discarded in the household waste. For disposal of clinical or medical waste, including sharps/needles, refer to local policy and procedures.

6.14 Management of patients with MRSA in ambulance services and aeromedical transport services

Standard and TBP apply and also refer to local policies, guidelines and procedures specific to this setting.

6.15 Management of patients with MRSA in residential care facilities

Standard and TBP apply and also refer to local policies, guidelines and procedures specific to this setting.

The term residential care facility (RCF), as used in this document, applies to a diverse group of residential settings ranging from aged or disability care settings, residential mental health facilities and long-term rehabilitation settings. Isolation or restriction of residents to their room as part of TBP in this setting may require risk assessment and/or modification.

Note: A person should not be refused admission to any residential care facility on the basis of MRSA colonisation or infection.

For further information refer to The Aged Care Infection Prevention and Control Guide | Australian Commission on Safety and Quality in Healthcare.

Additional IPC guidance for this setting includes:

Residents of RCFs may require frequent hospitalisation, in which case they may transfer pathogens between RCFs and healthcare facilities in which they receive care.

> Risk Factors for MRSA acquisition and transmission in RCFs may include:
  - previous hospitalisation
  - preceding antimicrobial therapy
  - presence of unhealed or chronic wounds e.g. leg ulcers
  - presence of invasive devices (i.e. indwelling urinary catheters, intravascular devices)
  - shedding skin conditions e.g. exfoliative dermatitis
  - impaired cognition that leads to behaviours that increase the risk of transmission.

> Screening

Current evidence as per the Australian Guidelines for the Prevention and Control in Healthcare does not support routine screening for MRSA in residential aged care settings.

There may be exceptions when screening is appropriate for an individual resident's management or in the investigation of a facility outbreak. This should occur as part of the facility infection prevention and control program and support should be sought from a specialist infection control professional, infectious disease physician, microbiologist or clinical care delegate.

> Principles of management

Strict adherence to standard precautions, i.e. hand hygiene, cleaning shared patient equipment and environmental cleaning, for **ALL** residents should assist in minimising cross-transmission risks.

> Resident placement
  - RCF can undertake a local risk assessment regarding resident room placement.
  - Single rooms are recommended for residents with conditions that may facilitate transmission e.g. draining wounds unable to be contained.
  - If single rooms are not available, a local risk assessment may be indicated, this may include assessing the risk of transmission and other residents who are considered to share the same room (who are at low risk of acquisition, i.e. no unhealed wounds, not on antibiotic therapy, no indwelling invasive devices, not immunosuppressed).
  - In rehabilitation settings or facilities providing therapy then ALL residents/patients should perform hand hygiene before entering a gym or therapy room. High touch surfaces on all equipment such as handrails, should be wiped over with a detergent and disinfectant solution or combined detergent and disinfectant wipe(s) between patient/resident use.

> Routine cleaning

  - When MRSA infection or colonisation is known to be present, routine cleaning should be intensified. This may include the addition of a TGA approved hospital grade disinfectant (preferably with label claims against MRSA) OR a chlorine-based product (diluted to 1,000 ppm as per Guide to dilution for chlorine-based disinfectant solutions) paying particular attention to all frequently touched surfaces such as bedrails, door handles, commodes, bathroom, toilet, hand basins and taps.
  - Further information can be found in the SA Health Cleaning Standard.
  - Detergent solution may be used on all other environmental surfaces in the room, including the floor.
- Antimicrobial Stewardship (AMS)
  - Multi-resistant organisms can pose a significant risk for residents in RCFs.
  - Antimicrobial stewardship in aged care is important to improve the safe and appropriate use of antimicrobials and decrease the risk of antimicrobial resistance for older people. Policies and procedures should be in place to promote judicious antimicrobial use, particularly of broad-spectrum antibiotics, in order to limit the increase and spread of n-resistant micro-organisms such as MRSA within RCFs.
  - Refer to the ACSQHC information regarding asymptomatic bacteriuria: reducing inappropriate antimicrobial prescribing for aged care facility residents.
  - Further information is also available via the Australian Commission on Safety and Quality in Healthcare – Antimicrobial Stewardship.

7. Associated policies / guidelines / clinical guidelines / resources

- Australian Guidelines for the Prevention and Control of Infection in Healthcare
- Cleaning Standard for South Australian Healthcare facilities
- Piewngam, Pipat et al. Staphylococcus aureus colonisation and strategies for decolonisation, The Lancet Microbe, Volume 5, Issue 6, e606 - e618 (June 2024)
- SA Health Bed Management Toolkit
- SA Health Guide to dilution for chlorine-based disinfectant solutions
- SA Health Hand Hygiene Clinical Guideline
- SA Health Hand Hygiene in the healthcare environment webpage
- SA Health Infection Prevention and Control and Healthcare Associated Infection (HAI) Surveillance and Reporting Policy
- SA Health MRSA Consumer fact sheet
- SA Health *Staphylococcus aureus* patient decolonisation fact sheet
- The Aged Care Infection Prevention and Control Guide | Australian Commission on Safety and Quality in Healthcare
- The 5 Moments for Hand Hygiene in aged care - fact sheet | Australian Commission on Safety and Quality in Healthcare
- Yiek, WK., Tromp, M., Strik-Albers, R. et al. Success rates of MRSA decolonization and factors associated with failure. Antimicrob Resist Infect Control **11**, 143 (2022)

8. Appendices

- MRSA screening flowsheet
- Contact and non-contact zones for control of MRSA in the peri-operative setting
- Small healthcare facility bed management flow chart
- Consumer Fact Sheet – Staphylococcus aureus patient decolonisation
- Consumer Fact Sheet – Methicillin-resistant Staphylococcus aureus (MRSA)

9. Document Ownership and History

Developed by: Infection Control Service, Communicable Disease Control Branch, Public Health Division

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Endorsed by: Content endorsed by South Australian Infection Reference Group

Date endorsed: 02/12/2025

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CG number: CG098

CG history: Is this a new clinical guideline (V1)? **N**

Does this clinical guideline amend or update and existing clinical guideline? **Y**

If so, which version? **V4.0**

Does this clinical guideline replace another clinical guideline with a different title? **N**

If so, which clinical guideline (title)? N/A

Approval Date	Version	Who approved New/Revised Version	Reason for Change
18/12/2025	V4.0	Clinical Guideline Domain Custodian	Placed into new template, full review with subject matter experts
25/09/20	V3.1	Director Communicable Disease Control Branch	Amended to regional LHN terminology
25/05/20	V3.0	Director Communicable Disease Control Branch	Updated national and SA Health References
16/05/16	V2.4	SA Health Safety & Quality Strategic Governance Committee	Minor alteration to Appendix 1
23/06/15	V2.3	SA Health Safety & Quality Strategic Governance Committee	Minor updates and insertion into new guideline template
20/11/14	V2.2	SA Health Safety & Quality Strategic Governance Committee	Convert to the clinical guideline template
16/04/14	V2.1	SA Health Safety & Quality Strategic Governance Committee	Minor alteration
10/12/13	V2.0	SA Health Safety & Quality Strategic Governance Committee	Revised
30/04/05	V1.0	Director Communicable Disease Control Branch	Original version approved

Appendix 1 MRSA screening flow chart

Previous history

Does the patient have a previous history of MRSA?

NO YES

No screening required*

* However, if the patient has not had any MRSA positive results in the last 3 months, consider if they are suitable for clearance (see 6.3)

ICU or burns unit

Is the patient being admitted to an ICU or burns unit?

NO YES

Screen patient:

- on admission & weekly until discharge

Frequent admission or acute transfer

- Has the patient been transferred from another acute care facility?

OR

- Has the patient had frequent* hospital admissions within the last 12 months?
- **As per clinical and local risk assessment*

NO YES

Long term facility transfer

Has the patient been transferred from a long term care facility, e.g. aged care, disability, rehabilitation?

NO YES

Screen patient:

- Screen nose (+perineum/groin*)
- Unhealed wounds
- Indwelling medical device

* *Refer guideline recommendations (dependent upon laboratory testing*

Community strains

Does the patient come from a locale or population with a high prevalence of community strains e.g. does the person identify as Aboriginal or Torres Strait Islander?

NO YES

Chronic wound

Does the patient have a chronic wound, e.g. ulcer?

NO YES

Indwelling medical device

Does the patient have an indwelling medical device e.g. IDC, PEG, VAD?

NO YES

Medical procedures

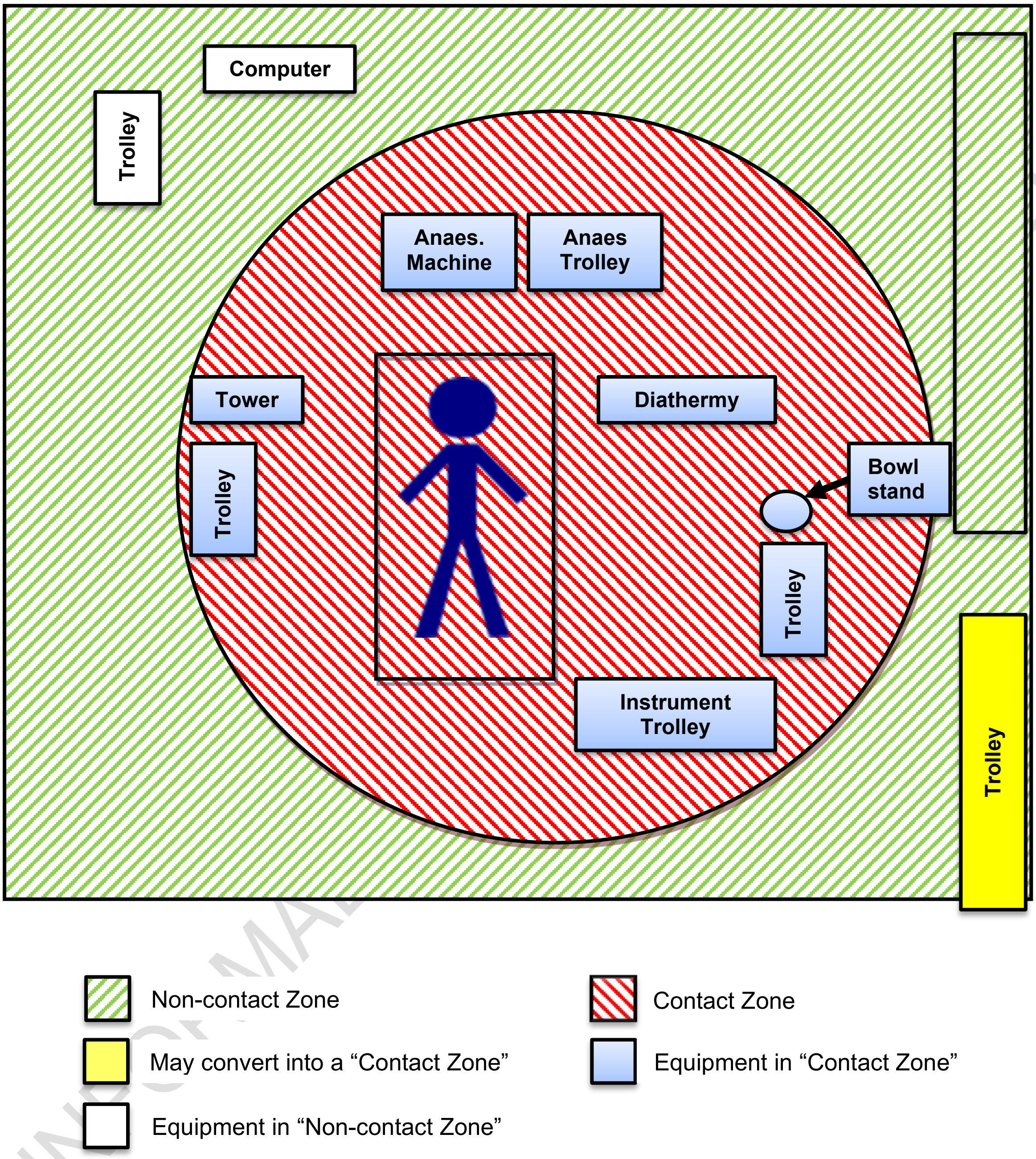
Is the patient scheduled for any of the following procedures?

- joint replacement
- cardiothoracic surgery
- vascular graft

YES NO

No screening required

Appendix 2 Contact and non-contact zones for control of MROs in the peri-operative setting



Appendix 3 Small Healthcare facility bed management flow chart

For patients identified with MRSA or VRE requiring admission or transfer to small hospitals (includes residential aged care or rehabilitation beds) OR hospitals that do not perform high risk surgery such as joint replacement, cardiothoracic, cardiac implant or vascular surgery.