



Preoperative Staphylococcus Aureus Screening for High Risk Surgery Procedure

1. Aim

WA Country Health Service (WACHS) Midwest health services strive to prevent hospital acquired surgical site infections (HA-SSI) and recommends screening of patients for carriage and/or colonisation with Staphylococcal Aureus (SA) prior to surgery. SA refers to both methicillin-susceptible SA [MSSA] and methicillin-resistant SA [MRSA]. SA is a pathogenic organism that can cause significant infection when it enters the body through broken skin and causes a wide range of clinical disease. Significant morbidity and mortality risks are associated with postoperative SA infection.

Preoperative screening of patients is indicated to identify SA carriers to enable targeted decolonisation, and the appropriate choice of prophylaxis in an effort to prevent post-operative SSI's

2. Risks

Surgical procedures where post-operative infection has high risk consequences as below:

- Major elective orthopaedic surgery with insertion of prosthesis (elective admissions for total hip replacement and total knee replacement)
- Vascular surgery including implants of grafts, fistula and peritoneal dialysis catheter insertion.

3. Roles and Responsibilities

The surgical team in conjunction with the pre admission nurse is responsible for preoperative screening and prescription of decolonisation/suppression regimens. Ideally this should be performed at least one week pre-operatively to allow for 5 days of treatment if indicated.

The WACHS Midwest Infection Control department will provide consultation when required.

Clinical microbiology or infectious diseases services may also be required for consultation in specific circumstances.

3.1 Collection of Swabs for MRSA screening

Collect specimens for culture from the following sites:

- Nose swab: anterior nares (gently rotate the swab 2-3 times over the mucosal surface - use the same swab for both nares)
- Any wounds, ulcers or skin lesions.

Moisten the swab with sterile water, collect specimen and insert into transport medium.

Complete the request form, request "Pre-operative SA screen including MRSA" and send the specimens to the microbiology laboratory at room temperature.

Ensure the treating surgical team and Infection Control is copied into the results.

3.2 Results

Primary responsibility for checking results and informing patients is with the surgical team. The Infection Control nurse is to contact the surgeon, theatre manager and theatre clerk when they become aware of a SA positive patient. The Infection Control nurse is to liaise with the surgical team regarding commencement of decolonisation.

3.3 Decolonisation regimen

If SA is isolated then the attending doctor should prescribe the following in an attempt to decolonise the patient of Staphylococcus aureus prior to surgery.

- **Chlorhexidine 4% or triclosan 1%:**
Wash the entire body surface once daily for five (5) days. Use approximately 25ml of the same solution to shampoo hair on day one (1), three (3) and five (5). Conditioner can be applied after shampooing.
- **2% Mupirocin**
Apply inside both nostrils, twice daily, for five (5) days.
A "double match head" quantity of ointment is applied inside each nostril with a cotton bud; spread the ointment around the nasal vestibule by squeezing the nose between thumb and forefinger, and rubbing them together.
- **Chlorhexidine mouthwash:**
The use of a chlorhexidine mouthwash solution as a throat gargle can be considered for those health care workers (HCWs) with throat carriage. Dentures should be disinfected by immersion in solution for one (1) hour every night or by soaking overnight in a denture cleaning product e.g. Steradent™, Polident™ for the five (5) days.

When possible, decolonisation/suppression therapy should be timed to be completed the night prior to surgery. If this is not possible it will need to continue for the appropriate amount of days post operatively to ensure completion.

In some circumstances where decolonisation treatment commences in the weeks prior to surgery, a set of swabs should be taken one week after decolonisation is completed to determine initial efficacy of the decolonisation

3.4 Positive results and antibiotic prophylaxis

If the person remains positive, repeated decolonisation should be considered.

SA positive patients will also require antibiotics for surgical prophylaxis according to the eTG complete Therapeutic Guidelines as below:

MRSA colonisation

- vancomycin (adult and child) 15 mg/kg IV, started 30 to 120 minutes before surgical incision (recommended rate 10 mg/min), then consider repeating the dose after 12 hours.

MSSA (methicillin sensitive staphylococcus aureus)

- cephazolin 2 g (child: 30 mg/kg up to 2 g) IV, within the 60 minutes (ideally 15 to 30 minutes) before surgical incision.

3.5 Negative results and validity

There is no national guidance on the duration of the validity of SA screening and the results. This is left to local interpretation and dependent on risk classification by Infection Control personnel. High and low risk groups are defined as per the Operational Circular 0478/13 Prevention and Control of Methicillin-resistant Staphylococcus aureus (MRSA) in Western Australian Healthcare Facilities.

For high risk groups

- Negative screening results are valid no longer than 3 weeks prior to admission treatment.

For low risk groups

- Negative screening results are valid within 3 months of admission /treatment.

Infection Control will assess risk factors for each case on an individual basis to determine the duration of results validity.

3.6 Clearance of MRSA carriers

Clearance is only applicable to carriers of MRSA. Clearance status can only be obtained three months after the last known positive result and if the person has not used any topical antiseptics during the past week and is not on antibiotics at the time of screening. Patients who have completed decolonisation and have determined initial efficacy of the treatment are to be given a follow up pathology form for screening to confirm clearance.

MRSA clearance swabs are achieved by the collection of two sets of nasal and throat swabs, and other sites as applicable (invasive devices, wounds).

- The two sets of swabs can be collected consecutively.
- On receipt of two sets of negative clearance screening results, micro-alerts can be removed.

Refer to Operational Directive [OD 0478/13 Infection Prevention and Control of Methicillin-resistant Staphylococcus aureus \(MRSA\) in Western Australian Healthcare Facilities](#) for further information.

4. Definitions

As per Operational Directive OD 0478/13 Prevention and Control of Methicillin-resistant Staphylococcus aureus (MRSA) in Western Australian Healthcare Facilities

Decolonisation	The process of eradicating or reducing asymptomatic carriage of MRSA by the use of topical and / or systemic antimicrobial agents
HA-MRSA	Distinct strains identified by molecular typing that are known to be highly transmissible within and between healthcare facilities and cause outbreaks.
SSI Infection	Surgical site infection from the invasion of bacteria into tissues with replication of the organism. Infection is characterised by isolation of the organism accompanied by clinical signs of illness such as fever, inflammation or pus formation
Micro-alert	A generic term used to refer to a flag applied to the medical record number in the electronic patient management system (TOPAS / WebPAS) to identify carriers of multi-resistant organisms.
MRSA	Healthcare associated isolates of Staphylococcus aureus that are resistant to methicillin and consequently all other beta-lactam antibiotics e.g. flucloxacillin, amoxicillin/clavulanate and all cephalosporins
MRSA-positive	Any person who has had MRSA isolated from any body site
Screening	A process to identify people at risk of being colonised with a particular microorganism and obtaining appropriate specimens.

5. Compliance

Failure to comply with this procedure may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the [Employment Policy Framework](#) issued pursuant to section 26 of the [Health Services Act 2016](#) (HSA) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies is mandatory.

6. Records Management

All WACHS medical records must be stored in an appropriate environment to ensure ease of access, preservation and security of information as per:

[Health Record Management Policy](#)

7. Evaluation

Monitoring of compliance with this document is to be carried out by the WACHS Midwest Infection Control department on a monthly basis via the Healthcare Infection Surveillance Western Australia (HISWA) program to monitor healthcare associated infections.

As per: Operational Directive OD 0527/14 Healthcare Associated Infection Surveillance in Western Australian Healthcare Facilities and reported to HISWA.

8. Standards

[National Safety and Quality Health Service Standards](#) (Second edition 2017)
Preventing and Controlling Healthcare - Associated Infection Standard - 3.4; 3.6; 3.15
[Aged Care Accreditation Standards](#) - 4.7

9. References

[Australian Commission on Safety and Quality in Health Care 2017](#), The National Safety and Quality Health Service Standards, *Safety and Quality Improvement Guide Second edition*. Sydney: Australian Commission on Safety and Quality in Health Care. From

National Health and Medical Research Council (NHMRC) 2015, [Australian Clinical Practice Guidelines Therapeutic Guidelines antibiotic version 15](#), Therapeutic Guidelines Limited, Melbourne, Australia.

National Health and Medical Research Council (NHMRC) 2010, *Australian Guidelines for the Prevention and Control of Infection in Healthcare*, National Health and Medical Research Council, Commonwealth of Australia.

Department of Health West Australia 2014, Western Australian Therapeutic Advisory Group (WATAG) Surgical Antibiotic Prophylaxis Guideline: Adults Version, *Key principles of surgical prophylaxis*, East Perth, Australia.

10. Related Policy Documents

WACHS [Antibiotic Prophylaxis - Surgical Guideline](#)
WACHS [Infection Prevention and Control Policy](#)

11. Related WA Health System Policies

[OD 0478/13 - Infection Prevention and Control of Methicillin Resistant Staphylococcus aureus \(MRSA\) in Western Australian Healthcare Facilities \(HCFs\)](#)

12. Policy Framework

[Public Health Policy Framework](#)

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Version:	1.00	Date Published:	6 June 2019

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