Government of **Western Australia**
Department of **Health**

Healthcare Worker Screening and Management for MRSA

Amendment to *Operational Directive 0478/13: Infection Prevention and Control of Methicillin-resistant* Staphylococcus aureus *(MRSA) in Western Australian Healthcare Facilities*

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Peterson A, Ingram P, Porter M, Engelbrecht D, McGechie D, McCann R.

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6.0 Healthcare Worker Screening and Management

- HCWs may become colonised with MRSA following contact with MRSA-positive people in a healthcare facility (HCF) or in the community. Transmission of MRSA from HCWs to patients has been reported with several studies describing MRSA outbreaks that have been epidemiologically linked to colonised or infected HCWs, especially when they have exfoliative skin conditions, skin infections or respiratory tract infections [9-14].
- The strict adherence to standard and transmission-based contact precautions, with an emphasis on hand hygiene compliance, are required to reduce the risk of acquisition and the transmission of MRSA by HCWs to their patients or residents. All reasonable efforts should be made to clear HCWs with known MRSA carriage.
- Despite a high prevalence of MRSA in the WA community, MRSA is not considered endemic in WA hospitals 5. Screening of HCWs from outside of WA is performed to prevent the establishment of new HA-MRSA and CA-MRSA strains, which are prevalent elsewhere in Australia and overseas, from becoming endemic in WA HCFs.
- The HCW screening requirements apply to all HCFs in WA including residential, rehabilitation and mental health settings.
- Any HCW who develops an exfoliative skin condition or skin and soft tissue infection (SSTIs) is to seek immediate medical advice and MRSA screening samples are to be collected from any skin lesions or wounds. HCWs with these skin conditions are not to perform clinical duties until the condition has resolved.

6.1 Who to Screen

- The HCW screening requirements apply to all HCWs who have clinical contact i.e. they provide direct clinical care and have physical contact with patients. This includes honorary, permanent, part time or casual HCWs, students, trainees, volunteers or those providing care under contracted services.
- All HCFs need to ensure that agencies, including universities that provide clinical contact HCWs, students or trainees comply with these screening requirements.

6.1.1 New (to a HCF) HCWs

- all HCWs, who will have clinical contact, are required to have their MRSA risk status assessed as part of a pre-employment / commencement process
- MRSA surveillance screening is required prior to commencement of work if the HCW has been hospitalised or worked in any HCF outside of WA in the previous 12 months including volunteer placements
- MRSA screening swabs can be collected outside of WA, as long as the HCW has not worked since collection of the screening swabs
- a copy of the microbiology results must be provided to the employer.

6.1.2 Current HCWs

- current HCWs who perform clinical duties in any HCF outside of WA, including volunteer placements, and are returning to work, are to have MRSA screening performed on their return. HCWs can continue clinical duties pending results.

6.1.3 Visiting HCWs

- any visiting HCWs who wear surgical attire and are assisting / observing in an operative / procedural setting are exempt from screening requirements
- any visiting HCWs who will be involved in clinical contact for a period greater than five days, require screening prior to placement.

6.1.4 Additional HCW Screening

- screening of HCWs should be considered when a single strain outbreak continues despite adherence to infection prevention and control measures
- if a HCW develops an exfoliative skin condition or SSTI they are to be screened for MRSA as part of their medical management.
- there is currently no evidence to support the routine screening of HCWs who have been employed in WA residential care facilities prior to employment in the acute care setting, or on those HCWs who work across both care settings
- all HCWs should be educated on the increased prevalence of MRSA in residential care, the subsequent increased risk of becoming colonised with MRSA and the importance of hand hygiene in minimising this risk.

6.2 Screening and Management

- HCW screening samples are to be taken from the nostrils, throat and any skin lesions or wounds and collected in accordance with Section 2.3 of OD 0478/13.
- HCWs found to be colonised with any strain of MRSA should be given topical decolonisation as prescribed in Appendix 3 of OD 0478/13. HCWs can return to work once they have commenced treatment provided they have no skin lesions.
- HCWs are to be screened one week after completion of treatment and then at week four, eight and 12. If they return a positive result during this time, advice should be sought from an Infectious Diseases Physician/Microbiologist. A small proportion of HCWs may be persistently colonised with MRSA. Refer to section 6.3.

6.3 HCWs with persistent MRSA carriage

- A HCW with persistent MRSA carriage is a relatively uncommon event, however, when this occurs it raises complex issues regarding ongoing decolonisation or suppression treatment and possible redeployment for HCWs who provide clinical care to higher-risk patients.
- There is currently no national or international consensus that defines persistent MRSA carriage or prescriptive guidelines for HCW management. A case-by-case, risk-management approach, is required that protects both the HCW and the patient.

6.3.1 Definition

- For the purposes of this document persistent carriage is when a HCW returns a positive MRSA result following completion of at least two decolonisation treatment courses.

6.3.2 Risk factors for persistent carriage

- Factors associated with decolonisation treatment failure and persistent MRSA carriage in HCWs include:
  - non-compliance with decolonisation regimens (treatment and/or hygiene)
  - skin infections, lesions or conditions (eczema, psoriasis, dermatitis)
  - throat carriage
  - multiple-site carriage
  - recolonization from household reservoirs i.e. household members and environment
  - poor dental condition
  - presence of indwelling devices or foreign-body material e.g. piercings, external fixations
  - mupirocin-resistance [10, 15, 16,17].

6.3.3 Risk of transmission from HCWs to patients

- HCWs who are colonised with MRSA, have skin infections, exfoliative skin conditions (eczema, psoriasis, dermatitis) or respiratory infections (including rhinitis, sinusitis) have an increased risk of transmitting MRSA.
- Asymptomatic colonised HCWs, including those with throat carriage only, have been implicated in transmission.
- Persistent nasal carriage and multiple-site carriage are associated with high bacterial loads of Staphylococcus aureus. Skin carriage rates increase proportionally in these people. Some, known as 'Staphylococcal dispersers', may heavily contaminate the environment by dispersal of skin scales on movement [10,11,17,18].

6.3.4 Risk assessment

- The individual risk assessment should take into consideration:
  - an evaluation of the HCWs risk factors for persistent carriage
  - an evaluation of the HCWs risk factors for transmission
  - the role of the HCW and the clinical area the HCW is employed i.e. higher-risk or lower-risk areas (refer to Definitions)
  - category of MRSA strain responsible for HCW carriage (Micro-alert B or C)
  - HCW's commitment to compliance with further decolonisation or suppression treatment or cessation of treatment
  - consequences of redeployment for the HCW and the organisation.
  - duty of care requirements for the HCW and the organisation under the WA Occupational Safety and Health Act 1984.

6.3.5 Principles of management

- Communication with the HCW is essential. The HCW is not to be stigmatised and a case manager should be appointed to support the HCW and liaise with an advisory team (refer 6.3.4). This team should conduct a risk-assessment and discuss further decolonisation or suppression treatment, work placement and ongoing management.

- The advisory team is to preferably include the HCWs Manager, a Microbiologist or Infectious Disease Physician, and either IP&C or Occupational Safety and Health personnel with guidance from Human Resource personnel when necessary.
- The HCW is to be reassured that all information is confidential and available to essential personnel only.
- An agreement with the HCW should be attained and documented that includes a commitment to comply with IP&C strategies e.g. hand hygiene, aseptic technique and to inform the team if they plan changes to work areas /HCFs prior to clearance.
- There is likely a pool of HCWs with unknown MRSA carriage due to the prevalence of MRSA in the WA community. IP&C teams should monitor and investigate increased MRSA acquisition rates in clinical areas to identify the source and determine if HCWs are implicated.

6.4 Decolonisation or Suppression Treatment for Persistent MRSA Carriage in HCWs

- International studies and experience in WA (unpublished) have demonstrated that a high proportion of people with persistent MRSA carriage can be decolonised with repeated decolonisation courses that include systemic treatment.
- The likelihood of success is increased when all risk factors for treatment failure (refer section 6.3.2) are evaluated and addressed [15, 16, 19].
- There are currently no recommendations on the number of repeat decolonisation courses to pursue following decolonisation failures as this depends on individual risk factors.
- Prior to commencing further decolonisation regimens, obtain an extended set of screening swabs from nose, throat, perineum and any lesions if present, to determine multi-site carriage.
- Consider increasing the duration of topical decolonisation treatment from five days to 10 or 14 days and review the antibiogram to define oral antibiotic selection and the type, combinations and duration of any previous antibiotic selections.
- Examples of appropriate antibiotics for decolonisation include rifampicin, fucidin, cotrimoxazole, ciprofloxacin and clindamycin and combinations of these antibiotics are often employed. A short course of 5-7 days of antibiotic therapy should be tried initially, before considering longer courses. Note: beta-lactam antibiotic treatment therapy is inadequate for MRSA decolonisation.
- The Therapeutic Guidelines: Antibiotic provides some guidance for antibiotic regimens used for decolonisation of staphylococcal carriage [20].
- Suppression treatment is the intermittent or ongoing use of topical agents to reduce the bacterial load and can be considered if the HCW fails to clear MRSA following repeated decolonisation treatments. Following a HCW risk assessment, an individualised intermittent suppression regimen may be an option. The Therapeutic Guidelines: Antibiotic describes one approach that applies mupirocin 2% nasal ointment to each nostril twice daily for the first 5 days of every month for 12 months [20].
- Screening is required after each decolonisation/suppression course as outlined in section 6.2.

7. References (updated to include section 6.3)

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Appendix 3 (OD 0478/13)

MRSA Decolonisation 5 Day Regimen

1. MRSA antiseptics

- Antiseptic solutions suitable for eradicating or suppressing MRSA colonisation:
  - body washes: chlorhexidine 4% solution; triclosan 1%
  - nasal ointments: mupirocin 2% (nitrofurazone 0.2% if mupirocin resistance)
  - mouth wash: chlorhexidine based solution

2. Suggested regimen

- Using either chlorhexidine 4% or triclosan 1%, wash the entire body surface once daily for 5 days. Use approximately 25ml of the same solution to shampoo hair on day 1, 3 and 5. Conditioner can be applied after shampooing.
- 2% mupirocin should be applied inside both nostrils, twice daily, for 5 days as described below:
  - 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
  - patients and carers should receive careful instructions on the correct application of the nasal ointment
  - if high-level mupirocin resistance is reported, nitrofurazone 0.2% nasal ointment is used.
- Prior to starting a decolonisation treatment body piercings should be removed for the duration of the treatment.
- Discard old toothbrush, razor and products that contact the skin (e.g.deodorant rollers). Wash hair brush and comb with soap and hot water.
- Dentures should be disinfected by immersion in chlorhexidine mouthwash solution for 1 hour every night or by soaking overnight in a denture cleaning product e.g. Steradent, Polident for the 5 days.
- The use of a chlorhexidine mouthwash solution as a throat gargle can be considered for those HCW’s with throat carriage.
- MRSA-positive neonates should be managed in consultation with a Clinical Microbiologist or Infectious Disease Physician. The topical agents described above are not to be used on neonates.

3. Systemic treatment

In some people MRSA colonisation can be persistent Refer to Section 6.3 Combined topical and systemic therapy can be given. Such management should be directed by a Clinical Microbiologist or Infectious Disease Physician.

Appendix 4 (OD 0478/13)

Instructions for applying MRSA decolonisation treatment

- The removal of MRSA from our body is called decolonisation. Sometimes, decolonisation can reduce the risk of acquiring repeated infections or spreading MRSA to others. Decolonisation is the use of an antiseptic body wash and an antibiotic ointment that needs to be prescribed by a doctor.

How to use the nasal ointment ***Apply twice a day for 5 days.***	**How to use the body wash** ***Use once a day for 5 days.***
1. Wash your hands with soap and water or use a hand sanitiser gel just before using your ointment. 2. Use a cotton bud to apply a 'double match head' amount of ointment to the inside of each nostril. 3. Press your nostrils together with thumb and forefinger and massage for about 15 seconds. 4. Don't get the ointment near your eyes. If any of it gets into your eyes, rinse them well with cool water. 6. Wash your hands with soap and water or use a hand sanitiser gel as soon as you are finished. 7. Do not use any other nasal ointments or nasal sprays during the 5 days.	1. Using a clean washcloth or your hands, apply the body wash to all body areas. Make sure to apply under your arms, behind your ears and your knees, your groin area, and between any skin folds. The soap will not lather very much, and that is OK. 2. When you have finished applying the body wash, leave it on your skin for 2 minutes. 3. Shampoo your hair using the body wash solution on day 1 and day 3 and day 5. Your normal conditioner can be used. 4. Thoroughly rinse the body wash off your skin. **Do not** wash with any other soap or cleanser. 5. Close your eyes and mouth when washing your face or shampooing. If you do get the body wash in your eyes or mouth – rinse well with cool water. 6. Dry off with a clean towel and put on clean clothing. 7. Use a moisturiser for dry skin, but do **not** use if you are having a surgical procedure. 8. If you have dentures, remove them before bed and clean thoroughly. Soak overnight in a denture cleaning product e.g. Steradent, Polident or for 1 hour each night for 5 nights in a chlorhexidine mouthwash solution.

Additional Treatment
You may be advised by your doctor or nurse that you require additional treatment such as mouth washes or oral antibiotics. You will be advised by your doctor or nursing staff if you require more testing for MRSA.

This document can be made available in alternative formats on request for a person with a disability.