

1. Patient Groups to be screened

NB This is interim guidance to be superseded when universal MRSA screening is implemented

The following patients SHOULD be screened for MRSA colonisation

- ❖ Elective orthopaedic, vascular, cardiothoracic, and neurosurgical patients – before admission¹ –the exact timing of screening and decolonisation procedure should be assessed on an individual patient basis but should be as near as possible to the operation date.²
- ❖ Emergency patients from the above categories – on admission¹
- ❖ ITU/HDU – on admission and at weekly intervals
- ❖ Renal unit patients on dialysis should be screened on admission to the programme and then at regular intervals, determined by local practice in the light of national guidance. All patients should be screened prior to creation of vascular or peritoneal access¹
- ❖ Transplant patients²
- ❖ Oncology/chemotherapy patients¹
- ❖ Burns patients²
- ❖ Previous MRSA^{2,1}
- ❖ Inter-hospital transfers^{2,1}
- ❖ Recent inpatients at hospitals abroad or hospital in the UK known or likely to have a high prevalence of MRSA²
- ❖ Admissions to regional, national and international referral centres²
- ❖ Normal residence is a Nursing Home or Residential Care where there is a known or likely high prevalence of MRSA^{2,1}

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Consideration SHOULD also be given to screening the following patients for MRSA carriage on admission and at regular intervals (weekly to monthly) if LOCAL RISK ASSESSMENT suggests they are high risk for MRSA colonisation (especially if the unit has endemic MRSA at a level of 10% or more patients colonised)⁴

- ❖ All elective surgical patients¹
- ❖ Patients with skin lesions or non-intact skin eg leg ulcers, pressure sores, eczema, psoriasis
- ❖ Patients with invasive medical devices present on admission e.g. IV lines, urinary catheters etc
- ❖ Contacts of patients known to be colonised with MRSA⁶
- ❖ All Emergency Admissions¹
- ❖ SCBU/neonatal unit patients²
- ❖ CCU patients
- ❖ Drug users²
- ❖ Patients infected with HIV²
- ❖ Members of contact sports teams²
- ❖ Diabetes⁶
- ❖ Received recent repeated courses of antibiotics⁶ (especially cephalosporins, quinolones and macrolides)
- ❖ Dermatology and Rheumatology patients⁶
- ❖ Frequent admissions to hospital^{1,2}

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2. Sample Sites to screen

The sample sites screened will depend on the microbiological method of screening used

The nose should always be screened.^{1,2,6}

Depending on clinical information and microbiological method used the following site should also be considered for screening: the perineum/groin^{1,2,(6)}; axillae^{1,(6)}; any skin lesions/wounds^{1,2,6}; insertion sites of invasive medical devices e.g. IV lines, urinary catheters, catheter urine, tracheostomies, PEGs etc^{2,6}; sputum in patients with a productive cough^{2,(6)} and umbilicus in neonates² should also be screened.

In special circumstances the following sites may also be considered for screening; throat⁶ and hairline especially in colonised staff, persistent carriers and denture wearers;² if clinically indicated, consider examining faeces and/or vaginal swabs; fingertip and/or hairline swabs are helpful in identifying MRSA dispersers.

3. Sample Collection

Swabs are submitted in transport media containing charcoal or as indicated by the specific analytical test. Prior to processing they should be stored at a temperature appropriate to the subsequent method of microbiological testing

Specimens should be transported and processed as soon as possible

4. Microbiology Laboratory Methods for MRSA screening

Currently the following testing methods are acceptable for MRSA screening. Newer methodologies are being developed continuously and should be considered subject to satisfactory evaluation.

MRSA screening method	Advantages	Disadvantages
<i>Direct plating on commercially prepared chromogenic MRSA agar</i>	Negative results at 24hrs Confirmed positive results at 48hrs	Less sensitive than broth or PCR
<i>Molecular methods eg PCR</i>	Results available within 2-4hrs	Cannot pool specimens Expensive

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		Need specialist equipment Need dedicated clean area for sample preparation If positive may need to collect separate swabs for sensitivity testing, depending on the actual molecular method used; relevant for decolonisation therapy.
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All presumptive staphylococcal isolates should be formally identified and have antibiotic sensitivity testing carried out by an accredited method.

It is strongly recommended that a seven day a week service for MRSA examination be available; that is, to process swabs, read culture plates, identify presumptive isolates and notify clinical staff about MRSA isolates.^{1,6}

Typing should be requested only if it will alter the management of the patient or contacts; it should be at the discretion of the Infection Prevention and Control Team. Give priority to isolates associated with outbreaks and clusters; causing invasive or serious infection; unusual antibiograms (including mupirocin resistance); toxin-mediated disease (toxic shock syndrome, impetigo, scalded skin syndrome) possible community-acquired cases (often ciprofloxacin sensitive and fucidin resistant; suspected PVL-related disease (necrotising pneumonia; serious skin and soft tissue infection)⁷

5. References

1. DoH CMO/CNO letter 16/11/2006- Screening for MRSA colonisation (PL/CMO/2006/4, PL/CNO/2006/4)
2. J Hosp Infect 2006; **63**: suppl 1 May 2006. Guidelines for the control and prevention of methicillin-resistant *Staphylococcus aureus* (MRSA) in healthcare facilities by the Joint BSAC/HIS/ICNA Working Party on MRSA
3. J Antimicrob Chemother 2005; **56**: 1000-1018. Guidelines for the laboratory diagnosis and susceptibility testing of methicillin-resistant *Staphylococcus aureus* (MRSA) by the Joint BSAC/HIS/ICNA Working Party on MRSA
4. J Antimicrob Chemother 2006; **57**: 589-608. Guidelines for the prophylaxis and treatment of methicillin-resistant *Staphylococcus aureus* (MRSA) infections in the UK by the Joint BSAC/HIS/ICNA Working Party on MRSA
5. NHS Quality Improvement Scotland June 2006; Consultation Report on Health Technology – Clinical and cost effectiveness of screening for MRSA
6. Royal College of Physicians of Edinburgh March 2006. Guidance for the hospital management of methicillin-resistant *Staphylococcus aureus* by a sub-group of the Scottish Infection Standards and Strategy (SISS) Group of the

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Royal College of Physicians of Edinburgh and the Royal College of Physicians and Surgeons of Glasgow

7. Standards Unit, Evaluations and Standards Laboratory, Centre for Infections. HPA National Standard Methods. *Investigation of specimens for screening for MRSA BSOP 29.*

<http://www.hpa-standardmethods.org.uk/documents/bsop/pdf/bsop29.pdf>

(under review)

8. Standards Unit, Evaluations and Standards Laboratory, Centre for Infections. HPA National Standard Methods. *Identification of Staphylococcus species, Micrococcus species and Rothia species. BSOP ID7*

<http://www.hpa-standardmethods.org.uk/documents/bsopid/pdf/bsopid7.pdf>

9. Good Laboratory Practice When Performing Molecular Amplification Assays.

<http://www.hpa-standardmethods.org.uk/documents/qsop/pdf/qsop38.pdf>

6. Authors

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