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# **MULTI-RESISTANT ORGANISM SCREENING AND CLEARANCE RECOMMENDATIONS**

Please note that the "Introduction to National Guidelines for Surveillance" must be read in conjunction with this document.

Originally devised by the National Advisory Board of the Australian Infection Control Association.

Revised by the Healthcare Infection Surveillance Subcommittee of the HCAIAC, National Quality and Safety Council.

## **PREAMBLE**

Many types of multi-resistant bacteria (MRO) cause morbidity in Australian health care facilities. These include methicillin-resistant *Staphylococcus aureus* (MRSA), *Staphylococcus aureus* with reduced vancomycin susceptibility (hVISA and others), multi-resistant Gram negative bacilli and vancomycin resistant enterococci (VRE). In terms of impact, MRSA remains by far the most important problem and infection control services must primarily focus on effective containment of this pathogen.

Control programs for health care associated MRSA are cost effective at all levels of MRSA endemicity. Key elements of such programs include:

- management of antibiotic use (including measures to reduce antibiotic exposure);
- improving hand hygiene compliance by health care workers;
- detection of colonised/infected patients through microbiological surveillance (screening and clinical specimens);
- contact precautions for patients colonised or infected with MRSA;
- effective response to an increase in incidence (outbreaks); and
- policy and procedure to document MRSA clearance.

MRSA spreads within health care facilities by contact transmission, especially on the hands of health care workers. Measurement of the dynamics of health care associated MRSA transmission, enables indirect assessment of health care worker compliance with hand hygiene within a facility.

This paper recommends an approach to MRO screening for acute care hospitals. In order to determine the most appropriate local approach, local MRO epidemiology should be reviewed regularly by the Infection Control Service and appropriate screening processes implemented. At a minimum, all such facilities should focus on effective detection of MRSA.

No recommendations about health care worker MRO screening are made. Implementation of such screening is usually indicated only in some MRSA outbreak situations where control measures have been less effective than desired.

Measurement of estimated MRSA incidence and prevalence in acute care facilities has been proposed as a key infection control indicator and has been adopted by South Australia and New South Wales. The comparability of such indicators, is improved by the adoption of these recommended standards for MRSA screening and clearance.

Routine MRO screening is not recommended in Aged Care or other long term, non-acute care facilities. It is recommended that clinical microbiological specimens are examined in an appropriate manner that will reliably detect the presence of multi-resistant organisms.

## 1. ACUTE CARE ADMISSION MINIMUM MRO SCREENING APPROACH

Organism	Hospital-wide admission approach	Specialised units including intensive care units
MRSA	<p><b>Recommended:</b> Patients with chronic wounds or indwelling medical device (not previously known to have MRSA)</p> <p><b>Optional:</b> Dependent on locally demonstrated epidemiology of MRSA:</p> <ul style="list-style-type: none"> <li>- Transfers from other acute or long term care facilities or readmission after recent prolonged hospital inpatient care*</li> <li>- Admission screening in locales or populations where community-acquired strains of MRSA are prevalent.</li> </ul>	<p><b>Recommended:</b> All patients on admission; then weekly or twice weekly dependent on demonstrated acquisition rates</p> <p><b>Optional:</b> Selected preoperative patients</p>
VRE	Not recommended	Optional***
MRGN**	Not recommended	Optional***

\* Screening of transfers from other facilities is important in localities where MRSA is found to be prevalent in transferred patients who do not have chronic wounds or indwelling medical devices.

\*\*MRGN: multi-resistant Gram negative organisms; generally *Enterobacteriaceae*, *Pseudomonas* or *Acinetobacter*.

\*\*\* The decision to introduce routine admission and interval VRE or MRGN screening for Intensive Care and other non-ICU clinical services such as renal (dialysis), organ transplant, haematology or oncology should be made after consideration of whether health care associated MRO infections have been documented in unit patients. Screening may be prudent even if no cases have been detected in the situation where there is a known VRE or MRGN problem at neighbouring institutions.

## 2. SPECIMENS TO TAKE FROM SCREENED PATIENTS

The following are a recommended minimum standard for MRO screening specimens. For swab collection a transport swab should be moistened in the transport medium prior to swabbing the area.

Organism sort through screening	Recommended screening sites/Specimen
MRSA	<p>Nose swab Wound(s) tissue/swab</p> <p>Clinical specimens (wounds, catheter urine, respiratory, other as clinically indicated)</p> <p>During an identified hospital outbreak, the addition of a perineal or groin swab is recommended.</p>
VRE	Faeces or perirectal
MRGN	<p>Faeces or perirectal Clinical specimens (wounds, catheter urine, respiratory, other as clinically indicated)</p>

### 3. RECOMMENDED MICROBIOLOGICAL DEFINITIONS<sup>1</sup>

MRSA	Oxacillin or methicillin MIC >2 mg/L
VRE	<i>Enterococcus species</i> with vancomycin resistance (MIC >4 mg/L) or with vanA or vanB genotype.
MRGN	<i>Enterobacteriaceae</i> resistant to gentamicin and/or extended spectrum $\beta$ -lactamase producing. <i>Acinetobacter</i> resistant to carbapenems.

### 4. GUIDELINES FOR MRO CLEARANCE<sup>2</sup>

All the following criteria should be satisfied prior to certifying that a patient has cleared a particular MRO:

- More than 3 months elapsed time from the last positive specimen;
- All wounds healed, no indwelling medical devices present;
- No exposure to any antibiotic or antiseptic body wash for at least 2 weeks prior to screening;
- In the case of MRSA, no exposure to specific anti-MRSA antibiotic therapy in the past 3 months; and
- Consecutive negative screens from above screening sites on two separate occasions OR evaluation of a single set of screening swabs with a broth amplification technique.

*These criteria are supported by evidence for MRSA.*

*Some patients with VRE or MRGN may well 'clear' with time but relapse with antibiotic therapy. Where VRE or MRGN are prevalent, admission and interval screening in specialised units is an important way to detect new or relapsed VRE or MRGN colonisation.*

#### References:

1. AGAR Recommendations about MRO Definitions. AICA Journal March 2003
2. National Survey of Screening Practice 2002 – AICA Journal September 2002

### **ACKNOWLEDGEMENT**

The Health Care Associated Infection Advisory Committee on behalf of the Australian Council for Safety & Quality in Health Care would like to acknowledge the use of information contained within the Australian Infection Control Association (AICA) "*Multi-Resistant Organism Screening Approaches and Draft Recommendations*" developed by the National Advisory Committee to AICA.

We would like to acknowledge the contribution of the Health Care Associated Infection Advisory Committee (HCAIAC) and the Surveillance Working Party (SWP), the Australian Society of Infectious Diseases (ASID) and Oz Bug subscribers.