
INFECTION PREVENTION AND CONTROL MANUAL

4.1 Methicillin Resistant Staphylococcus aureus (MRSA)

Please Note:

Section 4 of the manual has not been updated since the last edition of the manual ie 2005 as there are no new guidelines available to review this section of the manual against at the time of release of the 2008 manual. This section will be updated as soon as new guidelines become available.

RATIONALE

The facility will take all necessary measures to prevent the emergence of MRSA, detect its presence and prevent its transmission.

DEFINITION

Methicillin Resistant Staphylococcus aureus (MRSA) are strains of Staphylococcus aureus that are resistant to methicillin, and exhibit varying resistance to aminoglycoside's. The extent of methicillin-resistant strains varies considerably from one hospital to another.

RISK MANAGEMENT

Strains of MRSA may be epidemic in character. The costs of preventing MRSA transmission have had a significant financial impact on health care agencies.

High morbidity and mortality is associated with hospital acquired MRSA.

Clients who become colonised may remain in this state for long periods, and present a possible source of infection as they move between health care facilities, and the community. Transient or persistent nasal carriage among staff may sometimes be a factor in institutional transmission, although transmission via staff hands is the principal mode of transmission.

Contamination of Hands may occur due to:

- Contact with colonised or infected patients or residents
- Contact with colonised body sites of the staff themselves
- Contact with devices, items or environmental surfaces contaminated with MRSA.

AIRBORNE TRANSMISSION

Airborne transmission of MRSA may occur, but usually only when infected persons are large disseminators of the organism, eg; pneumonia, large infected burns, infected exfoliative dermatitis. Patient linen may be a source of MRSA dissemination during and immediately after bed making if the patient is colonised or infected with MRSA.

PROCEDURES

Standard Precautions should control the transmission of MRSA from a colonised patient in most instances, eg: client colonised in wound, pressure sore, groin – any area that can be covered by a dressing or clothing.

PRECAUTIONS INCLUDE:

- **Staff with Skin Abnormalities** must not care for patients with MRSA.
- **Hand Washing/Hand Hygiene** after contact with client, after glove removal, after contact with client environment or equipment.
- **Hand Antiseptic** - use after patient contact (alcohol hand antiseptic product) is an acceptable alternative to hand washing, when hands are not soiled.
- **Glove Use** when contact with body fluids is anticipated.
- **Gowning/Plastic Apron** for close patient contact and when contact with body fluids is anticipated, especially when contact possible with secretions (coughing), and wound drainage.
- **Decontaminate** - patient care items prior to use on any other patient.
- **Single Room accommodation with ensuite** - is strongly recommended. Cohorting with other MRSA patients may be used.
- **Meticulous Cleaning** of environmental surfaces in the immediate vicinity of MRSA clients is an important element of infection control. Cleaning cloths for this purpose should be disposable. There is no evidence that anything other than general cleaning detergent is necessary.
- **Soiled Linen** should be handled in such a manner as to prevent contamination of other patients and staff.

ADDITIONAL PRECAUTIONS are required for all MRSA infected patients.

The level of additional precautions required is **CONTACT PRECAUTIONS**.

CONTACT PRECAUTIONS consist of:

- **Single Room** accommodation, with ensuite facilities.
- **Gowns** should be worn when entering room.
- **Gloves** should be worn when handling blood/body fluids. Gloves should be replaced when soiled. Hand washing follows glove removal.
- **Hand Hygiene** should be meticulously performed.
- **Meticulous Cleaning** of patient environment with dedicated cleaning equipment.
- **Use of Dedicated Equipment** limited to the use of that patient.
- **Limiting Movement** of patient from the room for essential purposes only. Contact precautions to follow patient as transported. Necessary transfer of the patient to another agency will require communication of the patient's MRSA status to the receiving agency.
- **Staff Education** at all levels is necessary to meet the objectives of isolation.
- **Terminal Cleaning** must be attended to carefully when the patient leaves the unit.

Detergent in hot water is considered adequate. Curtains should be laundered. All items of equipment and supplies from the room should be cleaned, or discarded.

SURVEILLANCE

The system of “Significant Organism” surveillance, where the microbiology laboratory reports on unusual resistance results is an important method for detecting MRSA.

Specific culture surveys of high-risk patients (same ward or room as a diagnosed case) are useful.

Admission screening of high risk patients may be warranted. This may include screening of all interhospital/agency transferred patients/residents.

DISCHARGE AND RE-ADMISSION

Discharge to the community of an MRSA infected patient requires communication with the Patient’s General Practitioner, Home Nursing Services, Outpatient Clinic, etc.

A system of confidentially flagging the medical record needs to be used so that patient’s status can be ascertained if re-admission is necessary.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting. Australian Government Department of Health and Ageing, 2004.

Abrutyn E, Goldmann DA, Scheckler WE: Infection control Reference Service- the Experts Guide to the Guidelines. W.B Saunders. Philadelphia. 2001. 775-802.

Boyce JM, in Abrutyn E, Goldman DA, Scheckler WE: Infection control reference service – The experts’ guide to the guidelines. WB Saunders Company. Philadelphia. 2001

Combined Working Party; Revised Guidelines for the Control of Methicillin Resistant Staphylococcus aureus Infection in Hospitals. J Hosp Infect 1998;39:253-290.

Shiomori T. et.al. Evaluation of bedmaking-related airborne and surface methicillin-resistant Staphylococcus aureus contamination. Journal of Hospital Infection (2002) 50: 30-35.

4.2 Vancomycin Resistant enterococci (VRE)

RATIONALE

The facility will take all necessary measures to prevent the emergence of VRE, detect its presence, and prevent its transmission.

DEFINITION

Enterococci are gram positive cocci which are normal flora of the gastro-intestinal and female genital tracts. The most common species are *Enterococcus faecium* and *Enterococcus faecalis*. Since 1989, there has been a rapid increase in the resistance of enterococci to vancomycin (VRE - Vancomycin Resistant Enterococci).

Most VRE are not only resistant to vancomycin, but aminoglycosides and ampicillin.

VRE are able to transfer their resistance to these antimicrobial agents to other gram positive micro-organisms.

RISK MANAGEMENT

Because of the ability of VRE to transfer their antibiotic resistance factors to other micro-organisms prevention and control measures are of critical importance.

THESE MEASURES ARE SUMMARIZED AS:

- Prudent vancomycin use by clinicians
- Education of hospital staff regarding the problem of vancomycin resistance
- Early detection and prompt reporting of vancomycin resistance in enterococci and other gram positive cocci by the microbiology laboratory
- Immediate implementation of appropriate infection control measures to prevent person-to-person transmission of VRE. Aggressive infection control measures and strict compliance with containment procedures are necessary to limit VRE transmission. Appropriate use of isolation precautions for all VRE infected or colonised patients is intrinsic in this containment.
- Patients most at risk of VRE infection or colonization are the critically ill, immunosuppressed, post-major-surgery, long hospital stay.

PROCEDURES

ACUTE – (for long term care settings) See DHS Guidelines – Appendix 1

- Appropriate personnel notified when VRE isolated from a clinical specimen
- Confirm status of patient contacts (eg, shared room), by stool culture
- Nurse in single room, with ensuite, and hand washing facilities (cohorting may be necessary if several patients are affected)

ADD CONTACT PRECAUTIONS TO THE USUAL STANDARD PRECAUTIONS, IE;

- Wear disposable gloves when entering room
- Change gloves immediately they are contaminated with faecal material.
- Wash hands with antimicrobial wash after glove removal
- Wear a clean, non-sterile, long- sleeved gown upon entering the room
- Remove and discard gloves and gown carefully, and ensure no subsequent contact occurs with environmental surfaces inside the room, eg; doorknobs, screens
- Soiled linen is subject to usual “careful handling” precautions. Linen is double-bagged when removed from isolation room
- Used meal equipment collected by Food Services staff wearing gloves and passed through normal dish washing cycle
- Visitors must wear a gown. Careful hand washing on exit. Educated regarding transmission pathways
- Staff should be educated regarding transmission pathways
- Patients should wash their hands with an antimicrobial hand wash if being transported from their room, wear clean clothing, have wounds covered, incontinence mitigated by the application of appropriate incontinence products
- Equipment should be specific to the care of that patient
- Used pans and urinals sanitised in pan flusher immediately
- Careful daily room cleaning is essential – clean room last. Dedicated cleaning equipment to be kept in room for duration of patients stay. Cleaning using ordinary cleaning agents. Faecally contaminated surfaces are cleaned and then decontaminated with sodium hypochlorite 500ppm.
- Terminal cleaning with detergent and water should be very thorough and include application of 500ppm sodium hypochlorite following cleaning. Curtains and screens are changed.
- All single use items discarded other items sanitized/sterilized.
- As patients may remain colonised for long periods the medical record should be appropriately flagged to indicate transmission potential to relevant services.
- Agency requirements regarding removal of patient from isolation must be met.

VRE IN LONG-TERM CARE FACILITIES

- There is no role for routine screening prior to admission.
- Only residents who are colonised with VRE, who are faecally incontinent require a single room with ensuite facilities.
- Strict attention to environmental cleaning, and hand washing are the primary methods of prevention of infection transmission.
- All other measures are those detailed above.

REFERENCES:

Infection Control Guidelines for the Prevention of Transmission of Infectious Diseases in the Healthcare Setting. Australian Government Department of Health and Ageing, 2004.

Department of Human Services, Victoria: Guidelines for the Management of Patients with Vancomycin-Resistant Enterococci Colonization/Infection. April, 1999

Abrutyn E, Goldmann DA, Scheckler WE: Infection Control Reference Service- The Experts Guide to the Guidelines. W.B.Saunders Co. Philadelphia. 2001: 825-827

CDC: Recommendations for preventing the spread of Vancomycin Resistance: Recommendations of the Hospital Infection Control Practices Advisory Committee (HICPAC). Atlanta. 1995.