MANAGEMENT OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA)

MRSA emerged in the 1970s shortly after the introduction of methicillin as a new antibiotic. It quickly became a major health care associated (nosocomial) organism in hospitals and long-term care facilities. The organism is primarily spread by direct contact through hands, the inappropriate use of gloves and unclean equipment. It is resistant not only to methicillin but also to all β-lactam antibiotics, including penicillin, cloxacillin and cephalosporins. The organism is also frequently resistant to erythromycin, clindamycin, gentamicin and ciprofloxacin. Treatment options are therefore limited. It is important to note that MRSA is no more virulent than methicillin-sensitive Staphylococcus aureus (MSSA) but is more difficult to treat, due to the limited antibiotic choices, when it causes infections.

As with any antibiotic resistant organism (ARO) individuals may be colonized or infected. It is important that we understand the difference between these.

Individuals who are colonized with MRSA carry the organism at one or more body sites. There is no evidence of tissue damage. Unless the organism is identified through screening cultures, it is impossible to tell that the individual is a carrier of MRSA. Risk factors for colonization with MRSA include open wounds, decubitus ulcers (bedsores), urinary catheters, gastrostomy tubes, and multiple functional disabilities. Colonization may persist for prolonged periods.

Individuals who are infected with MRSA exhibit signs and symptoms of infection depending on the site. For example, an individual with a urinary tract infection due to MRSA will present with signs and symptoms of a urinary tract infection (e.g. dysuria, flank pain, fever). Only by obtaining the appropriate cultures can the causative organism be determined. Not all individuals who are colonized with MRSA will develop an infection due to the MRSA. Only about 20-30% of colonized individuals will go on to develop an infection. However, both colonized and infected individuals can be reservoirs for transmission of MRSA to other individuals. Identification of colonized residents, through screening, may be of value in reducing the risk to other residents.


In addition, the following points should be considered.

1. Screening for MRSA
   Current evidence indicates that use of an active screening program helps in controlling transmission of MRSA within the facility. Consideration should be given to screening of residents on admission or transfer to the facility. The decision to implement routine admission screening should be made by the Infection Control Committee of each facility. This decision should be based on the case mix of the residents and the current prevalence of MRSA within the facility. Staff must be cautioned that identification of
residents as MRSA carriers does not preclude the existence of MRSA in other residents. The use of Routine Practices must be emphasized for all care in the facility.

2. Resident Placement
The placement of known MRSA positive residents should be based on the PIDAC document and the ability of the resident to understand and carry out appropriate hygiene practices. It is essential that both the resident and their family members are participants in the decision-making process.

3. Management
The facility should ensure that appropriate signage is posted for residents infected/colonized with MRSA. The resident and family should be involved in planning the care for the resident to minimize any confusion and provide an opportunity to educate the resident/family about the precautions being implemented. The Resident Care Plan/Care Profile should be updated to reflect the precautions being implemented.

a) Infected resident
Consultation with an infectious disease specialist should be considered for residents infected with MRSA.

b) Colonized resident
The value of decolonization therapy in long-term care settings has not been proven and is not recommended as a general rule. Each facility must decide whether they will attempt to decolonize residents identified as MRSA positive. Decolonization may take several forms and each facility must decide on the protocol to be used. There is insufficient evidence to recommend a single protocol. If the decision to decolonize is made, the resident must be placed in a single room and careful attention placed on eliminating any possible reservoirs in the environment. The use of a single room decreases the likelihood of the resident being re-colonized by another strain of MRSA. All solutions and ointments should be discarded and single-dose products substituted during the decolonization therapy. Clothing worn by the resident should be washed and the room thoroughly cleaned on a daily basis.

When decolonization therapy is implemented, follow-up screening must be done. Follow-up screening should be initiated not less than 48 hours after the completion of the decolonization therapy. Screening swabs must be obtained from anterior nares, perianal, exit sites of any indwelling devices and any other sites that were positive for MRSA. A minimum of three sets of negative swabs that were obtained at weekly intervals is required to consider the resident to be decolonized. If at any point the resident’s swabs show that they have MRSA, then a decision must be made regarding further treatment.

In some instances, MRSA may re-appear. Therefore, residents who received decolonization therapy should be followed with screening swabs on a monthly basis for three months and then on a routine basis, which will be determined by the facility.
In the event of a resident transfer to another facility or an acute care setting, the facility must notify the receiving facility of the status of the resident and the screening policy of the facility. The Antibiotic Resistant Organism Communication Sheet (Appendix J) should be used for this purpose.

4. Barriers

a) Hand hygiene
   Hands should be cleaned with alcohol based hand rub, 70-90% or soap and running water before and after direct contact with the resident, before performing aseptic procedures, after handling body secretions or contaminated equipment/environment and after removing gloves.

   MRSA positive residents must wash their hands when they leave their rooms and before they participate in group activities.

   All residents and families should receive education regarding the importance of hand hygiene and the correct procedure to follow using both ABHR and soap and water.

b) Protective barriers
   Gowns and gloves must be used for any direct care provided to the MRSA positive resident. Direct care includes all care where the health care worker has hands-on contact with the resident including activities such as bathing, toileting, feeding. Some facilities may choose to include the use of masks for direct care to decrease the risk of staff inoculating their own nares with MRSA. In residents who are colonized with MRSA in their respiratory system and have a productive cough, masks may be indicated for close activities (e.g within 2 metres/6feet). Family members do not need to use protective barriers unless they are providing direct personal care to their family member.

c) Environmental Cleaning
   Equipment that is shared between residents must be cleaned and disinfected with an appropriate disinfectant after each use. Residents who are being decolonized must have a discharge/terminal cleaning done of their room on a daily basis during the decolonization treatment.

d) Education
   Residents and their family members should receive written and verbal information on MRSA and the precautions being carried out. All staff should receive education on MRSA and the policies in the facility as part of their orientation. Routine infection control audits should be done to ensure that all persons in the facility are following the appropriate precautions.

Consultation with Peel Public Health should be undertaken for any questions/ issues in managing residents with MRSA.
Additional Resource:

ANTIBIOTIC RESISTANT ORGANISM (ARO)/Clostridium difficile (C. difficile) MULTI-DIRECTIONAL COMMUNICATION FORM FOR Hospital – Community – CCAC – Long-Term Care