Communicable Disease and Infection Control

Guidelines for the Management and control of Methicillin Resistant *Staphylococcus aureus* (MRSA)

These guidelines have been written and set out in a logical and easy to read format. Please turn to the appropriate section for guidance on aspects of care, e.g. single case in a clinical cluster.

The guidelines are set out under the following headings:

BACKGROUND INFORMATION

Staphylococcus aureus is an important skin pathogen which is often the cause of superficial and deep infections in inpatients in hospitals and in the community, e.g. boils, impetigo, chest infections, urinary tract infections, osteomyelitis and surgical wound infections. The organism is carried in the nose of approximately 20% - 30% of healthy people and this figure is likely to be higher in healthcare staff.

Sensitive *Staphylococcus aureus*

The majority of *Staphylococcus aureus* infections can be successfully treated with anti staphylococcal antibiotics such as erythromycin and flucloxacillin.

Resistant *Staphylococcus aureus*

During the 1970's certain strains of *Staphylococcus aureus* developed resistance to methicillin (an antibiotic used in place of flucloxacillin for technical reasons in the laboratory for sensitivity testing). These strains also showed resistance to many of the commonly used anti-staphylococcal antibiotics.

Outbreaks of Methicillin Resistant *Staphylococcus aureus* (MRSA) have occurred in many countries and most parts of Britain. The strains of MRSA most frequently implicated in outbreaks (due to their virulence and propensity to spread) are called the epidemic MRSA's (EMRSA).

Experience of recent outbreaks suggest that the main risk of serious MRSA infection occurs more readily in patients who are in special units such as cardiothoracic units, ITU, SCBUs and in patients undergoing major surgery including prosthetic surgery.

Many patients become colonised rather than infected with MRSA, particularly the elderly who may become long-term carriers of the organism. These people then can act as a reservoir for cross infection for others because of their relative frequency of admission to hospital, including to acute surgical units and other specialist areas.

Outbreaks of MRSA can be very difficult and expensive to control. They can result in the closure of specialist units and surgical wards, cancellation of surgery and general disruption to the normal functioning of the hospital.

MRSA is an organism that is able to colonise patients, healthcare staff and the environment. It can also cause infection in vulnerable patients and is difficult to treat because of the limited number of antibiotics which are effective. In view of this it is **ESSENTIAL that MRSA policies are adhered to by all healthcare staff**.

MODE OF SPREAD

The most important way in which MRSA is spread is by transmission on the hands of healthcare staff. Thorough handwashing and drying after contact with patients, and thorough cleaning of equipment they have used, are undisputed as the fundamental control measures. The importance of hand hygiene in breaking the chain of the spread of infection cannot be overstressed to all healthcare staff and visitors.

MRSA adheres to a variety of fabrics, including bed and window curtains, pillows and mattresses, clothes and staff uniforms. Staff should wear appropriate protective clothing when in contact with patients or materials arising from them. (See Protective Clothing Policy)
MRSA also survives for weeks in dry conditions, most commonly in dust, hence the need for regular thorough cleaning. Particular attention should be paid to the removal of dust from high level surfaces. Most equipment can be adequately cleaned by using hot water and detergent and then thorough drying

MANAGEMENT FOR THE PREVENTION OF SPREAD OF MRSA

These guidelines for the control of MRSA cover the general procedures. They may need to be modified according to the clinical area involved. The Infection Control Team will provide more detailed information on the management of individual situations and can be contacted for advice.

St. Christopher's Hospices' Clinical Management team have decided that routine MRSA screening of patients admitted to that Hospice has not been shown to be clinically valuable. However, hospital patients who have an ulcer/wound should, where possible, have the affected area swabbed for MRSA prior to transfer. Any patients with symptomatic infections known or suspected to be due to MRSA will be admitted to single rooms when possible or temporarily barrier nursed within a 4-bedded bay.

Procedure following confirmation of MRSA infection/colonisation

1. Medical staff in charge of the patient's care must be notified by the nurse in charge. Consideration should be given to postponing/cancelling in the short term any planned investigation/treatments, etc.

2. The patient, plus bed, locker and equipment, must be transferred to a single room and barrier nursing precautions adopted immediately. The Infection Control Team should be contacted if the patient's medical and psychological welfare will be seriously compromised by single room isolation.

3. The implications of having MRSA infection and the subsequent treatment must be explained to the patient prior to transfer to a single room or cohort area.

4. Antibiotic treatment should be given according to bacterial sensitivities, seeking Microbiology Department advice if in doubt. If the patient is too ill to receive antibiotics, barrier nursing should be maintained until they have recovered and been treated effectively, or until death.

5. The bed and window curtains surrounding the affected area must be carefully removed, (creating as little dust as possible), or steamed cleaned. The environment surrounding the affected area must be thoroughly cleaned and dusted and clean curtains replaced, after the area has been cleaned.
   NB: If the patient has been discharged cleaning must include the vacated bed and locker. Bed linen to be treated as infected.

Cohort nursing:-

In the event that a single room is not available, cohort nursing will be implemented. A bay, will be designated in order to barrier nurse a group of "MRSA patients" together. Although this is not ideal it may be necessary. When possible dedicated staff should be used to care for these patients. Staff must remember, however, that cross infection may still occur**, and barrier precautions and hand washing must still be carried out in-between each patient in the bay**

NB ***In the event of insufficient single rooms, members of the infection control team can assist ward staff in assessing which cases take priority for the single rooms.***

STAFF SCREENING

Staff screening may be carried out if it is deemed necessary. Areas will be notified by the Infection Control Department and the appropriate forms forwarded when screening is required. (Date-of-birth **must** be included on the form for swabs to be processed.)

Swabs must be taken from:

1) Nose
2) Throat
3) Any skin lesions

Healthcare staff include:-

Medical staff including consultants
Nursing staff - including H.C.A.'s
Physiotherapists
Occupational therapists
Domestics

If in doubt about who to screen, contact the Infection Control Department. **Compliance with staff screening is mandatory.**

The nurse-in-charge of the area must ensure that a list of all staff is written in duplicate and should retain one copy to provide a record of which staff have had swabs taken, the other copy must be sent to the Microbiology laboratory with the swabs.

N.B. All swabs must be delivered within 24 hours of being taken, to the Microbiology Laboratory (including weekends).

Staff are requested not to telephone Microbiology for results. All staff results will be sent to the Occupational Health provider. The Infection Control Department or Occupational Health will contact staff who are found to be MRSA positive. Staff should then contact the Occupational Health (PHC) for further advice. This is particularly important for staff who have existing medical conditions which may be relevant.

All staff who are found to be MRSA positive will be prescribed the MRSA eradication regime (see Appendix 1). Further follow up of staff will be made by the Occupational Health Provider.

MANAGEMENT OF STAFF AND PATIENTS

1. STAFF MOVEMENT

During an outbreak it is **ESSENTIAL** to reduce the movement of staff from the affected area to non-affected areas to the absolute minimum. The deployment of agency or bank staff must be carefully considered.

2. PATIENT MOVEMENT

If patients are required to have investigations/attend x-ray etc. the department must be notified in advance. The patient should be scheduled for the end of the session and should not have to wait in an area with other patients. The medical staff should be asked to assess the urgency for such investigations and if appropriate this should be postponed.

Patients undergoing rehabilitation - MRSA should not disrupt rehabilitation programmes - however, please telephone the Infection Control Department for individual advice.

TRANSFER OF PATIENTS TO ANOTHER HOSPITAL

Before arranging to transfer any patient, the Consultant Microbiologist or Infection Control Nurse at the receiving hospital must be informed that the patient is MRSA positive.

DISCHARGE HOME OF PATIENTS KNOWN TO HAVE MRSA

The General Practitioner must be informed and details of any current treatment given in writing.

If a district nurse will be visiting, written information on the treatment and any dressings used plus any infection control procedures required should be forwarded to the appropriate person.

It is recommended that follow-up screening swabs should be taken by the GP/District Nurse on completion of the eradication regime.

If an ambulance is required by a patient with MRSA, please refer to Infection Control for individual patient advice

DISCHARGE TO NURSING OR RESIDENTIAL HOMES OF PATIENTS KNOWN TO HAVE MRSA

Before arranging discharge to a Nursing Home or Residential Home the matron/proprietor must be informed that the patient is MRSA positive. Carriage of MRSA should not be a contraindication to the transfer of a patient to a nursing or residential home. Full information regarding MRSA and written details of treatment must accompany the patient.

LAST OFFICES

The normal procedure for carrying out last offices should be adhered to ensuring that all lesions are covered with an occlusive dressing. Body bags are not required **unless** there is leakage of blood or body fluids.

Reference

Ayliffe et al (1988) Revised Guidelines for the Control of MRSA Infections in Hospitals. Journal of Hospital Infection Vol.39, p.253-290.

REVIEW

This policy will be reviewed by the Hospice Infection Control Committee

SIGNED : Barbara Monroe

CHIEF EXECUTIVE

DATED : **JULY 2006**

APPENDIX A - M.R.S.A. ERADICATION REGIME

Any patients or staff found to have MRSA must commence the regime listed below without delay.

The appropriate clinician should prescribe for the patient. Occupational health will prescribe, and the hospital pharmacy will supply for staff.

Any member of staff with MRSA should (after they have collected the treatment from Pharmacy) be sent off duty for 24 hours.

The Occupational Health Provider and Infection Control Department will liaise if further follow-up is necessary.

TREATMENT

1. MUPIROCIN 2% Nasal Ointment (BACTROBAN NASAL)
   Apply to each nostril three times daily.
   NB In the event of mupirocin resistance, Naseptin cream should be used as an alternative as per advice from Consultant Microbiologist.

2. CHLORHEXIDINE GLUCONATE 4% (Hydrex)
   a) Use as liquid soap for bathing once daily.
   b) Use as hair shampoo three times weekly.

3. CX dusting powder. Apply to axilla and groin twice daily.

4. In addition systemic or topical antibiotics may be required as advised by the Consultant Microbiologist.

All the above treatment to be carried out for seven days. (It may be necessary to prolong the topical treatment by a day or two until a week of systemic treatment has been completed. This is if the treatment courses started at different times)

Day 8	No treatment or screening
Day 9	No treatment or screening
Day 10	Post treatment (Screen 1)

Full screening swabs must be taken (see page 4)

NB If the patient is receiving vancomycin or other systemic therapy, screening swabs should be taken 48 hours after administration of the last dose.

For further advice please contact the Infection Control Department.

Day 11	Repeat swabs from all areas, to be sent to the laboratory (Screen 2)
Day 12	Repeat swabs from all areas to be sent to the laboratory (Screen 3)

Day 13 & 14	Results from the three consecutive screens should be available. Staff should check the notes and/or the computer to ascertain when 3 consecutive sets of negative swabs have been confirmed. If three consecutive negative swabs are not obtained, the Infection Control Doctor/Nurse will advise on the continuing management.