

INFECTION CONTROL COMMITTEE
ST. LUKE'S HOSPITAL
MALTA

**METHICILLIN RESISTANT
STAPHYLOCOCCUS AUREUS
(MRSA)
POLICY**

INTRODUCTION

Methicillin-Resistant *Staphylococcus aureus* (MRSA) are resistant to all beta-lactam antibiotics (all penicillin's, cephalosporins and imipenem) and in addition are often resistant to other classes of antibiotics (multiply-resistant MRSA). Some strains of MRSA are epidemic in character and may cause serious outbreaks of infection in hospitals. MRSA can colonise patients, staff and the hospital environment. Once established (endemic) in a hospital, MRSA has always provide difficult to eradicate

The single most important measure to contain MRSA, as indeed, the vast majority of hospital acquired infections, is **PROPER HAND HYGIENE**.

This policy document gives advice on dealing with MRSA. However, each situation must be dealt with individually and more detailed advice should be obtained from the Infection Control Unit (ext. 1747; pagers 3059 / 2762).

CONTROL MEASURES

Admission of known or suspected case

Any newly admitted patient with a history of MRSA or a stay in a hospital abroad within the past year, should be housed directly in a single room. If no single room is available the Infection Control Unit should be contacted for advice. The Unit should in all cases be informed immediately so that screening of the patient can be undertaken. Contact isolation measures should be taken as a precaution and the following screening swabs taken:

- nose
- perineum
- any wounds
- abnormal skin lesions

Medical records of known positive cases are tagged on the inside cover of the notes with the appropriate label available from the Infection Control Unit.

Case reported after admission to hospital

The patient should be discharged from hospital if their clinical condition allows, or isolated if discharge is not possible. Patients' notes should immediately be tagged.

Patient isolation

Contact isolation should be commenced immediately. Individual rooms should preferably have their own toilet facility. The door must be kept closed at all times. If there are several affected patients, a small ward with designated staff is preferable to side rooms of different wards. In an outbreak situation the Infection Control Unit will consider the cohorting of patients.

Prior to transferring the patient to the side room, the implications of MRSA colonisation, infection and treatment, should be clearly explained.

Only one visitor is to be allowed who must carry out all necessary precautions and exit the ward immediately after leaving the room

Recommendations for nursing patients infected or colonised with MRSA

1. Aprons/Gowns: Should be worn by all medical & nursing staff / visitors entering into the room. On no account should the patient be nursed wearing normal ward clothing. They should be hung within the room or ante-room and removed BEFORE exiting; they must be changed daily. Aprons are sufficient if wearing short sleeved clothing.
2. Hands: Hands and elbows MUST be washed with chlorhexidine-soap solution (Hibiscrub) before leaving the room. The application of Chlorhexidine alcoholic rub (Hibisol) gives additional precaution and is an acceptable alternative to hand washing in physically clean hands.
3. Gloves: Disposable non sterile gloves should be worn when:
 - coming into direct contact with the patient
 - handling body fluids and wounds
 - if staff have skin lesions on the hands
4. Masks: Masks of the filtered type are required only if handling respiratory sections.
5. Caps: Not required
6. Overshoes: Not required
7. Equipment: Medical equipment such as stethoscopes, sphygmomanometers, thermometers etc., should preferably be left in the room and terminally disinfected after discharge of the patient.
8. Laundry: Laundry items should be placed in water soluble bags which are then put in yellow plastic bags for sending to the laundry.
9. Waste: Clinical waste should be put into a yellow garbage bag within the room and sent when $\frac{3}{4}$ full for incineration clearly labelled as biohazardous.
10. Terminal disinfection is effected once the patient has left the room. The floor, walls and furnishings should be washed with 2% Hycolin and left to air dry. All curtains and linen items need to be sent to the laundry for washing within water soluble bags. The room should be left vacant for 24 hours after terminal disinfection.

It is the responsibility of the nurse in charge to ensure that all the materials required for the isolation room are readily available.

Personnel working in an affected area should not perform duties (substitute or overtime) in other wards. Staff from other wards or departments, such as Physiotherapy or Radiography, and visitors should only enter the isolation room after receiving permission and instruction from the nurse in charge of the ward.

Strict compliance with hand washing techniques must be observed.

Screening of contact patients may be performed by the Infection Control Unit if an outbreak is suspected.

The following are approximate indications of potential outbreak situations but it must be emphasised that each situation needs to be assessed in its own light:

1. **one infected or colonised patient** in a high risk area e.g. I.T.U., C.T.S., S.C.B.U., dialysis, transplant or paediatric wards.
2. **two infected or colonised patients within two weeks** in medium risk areas e.g. surgical wards, dermatology.
3. **three infected or colonised patients within one month** in a low risk area e.g. medical, geriatric, obstetrics or psychiatric wards.

Screening of staff may be performed to detect an asymptomatic carrier in outbreaks where the epidemiology is unclear.

Closure of the ward or unit to new admissions will only be considered after consultation between the Infection Control Doctor, the hospital administration and the relevant Clinical Directors.

Health Care Personnel

MRSA colonisation poses NO direct risk to healthy individuals or their families. Colonised health care workers may however transfer their MRSA to vulnerable patients and therefore extend the outbreak. This is the only reason why staff screening is sometimes performed and NOT because of fear of any dangers to members of staff. Initially only nose should be taken for screening purposes, unless otherwise directed. Decolonisation should always be attempted under the supervision of the Infection Control Unit.

Decolonisation of carriers

Nasal carriage

The most effective treatment for nasal carriage is **mupirocin** (Bactroban Nasal®) in a paraffin base applied to the anterior nares three times daily for five days (available from Pharmacy).

Other sites

The staphylococcal load on the skin may be reduced by using an antiseptic for skin and hair washing. Chlorhexidine can be used for this purpose. Normal shampoo may be used after the antiseptic.

Mupirocin (Bactroban®) in a polyethylene glycol base is particularly effective in removing staphylococci from lesions, such as eczema and pressure sores, but should be avoided on burns and large areas (use Bactroban Nasal®).

The axillae and groin can be decolonised using Hexachlorophene powder (Ster-zac powder®) but this should not be used on broken skin.

Throat or sputum colonisation may require systemic therapy with rifampicin and another agent for five days to eliminate carriage. This should be considered after consultation with the Infection Control Doctor.

Summary of treatment of carrier states:

Nose	Mupirocin nasal ointment t.d.s x 5 days
Skin lesions	Mupirocin ointment / Povidone iodine dressings
Axillae/groins	Hexachlorophane powder
Body	Chlorhexidine scrub / Triclosan

Treatment of infections

The only effective agents for serious (systemic) infection, as opposed to colonisation, are glycopeptide antibiotics (vancomycin or teicoplanin). Rifampicin or fucidic acid are occasionally added to a glycopeptide.

Tests for clearance

The nose, perineum, skin lesions, and other sites which were previously positive in colonised or infected patients or staff should be sampled two days after cessation of therapy. Sampling should be continued until three sets of negative swabs are obtained at least three days apart.

Tests for staff taking care of MRSA patients

At the end of the outbreak, all nursing and paramedical staff who have had reasonable extensive contact with MRSA patients will be screened by means of a nasal swab. In cases where the duration of the outbreak becomes extensive, a decision on interim screening of staff members will be taken by the Infection Control Unit. There is NO need for repetitive frequent nasal swabs from nursing personnel and on no account should such swabs be taken without prior discussion with the Infection Control Unit.

Transfer of patients

As with other Infection Control matters, the Nursing Officer in-charge of the ward has the responsibility to ensure that the necessary information regarding an infected/colonised patient is passed on to a senior member of staff of the receiving ward/department, prior to transfer.

Within the hospital

Transfers to other wards should be avoided if at all possible. If transfer has to be effected then the receiving ward should be informed of the current status of the patient. If the patient has been cleared of infection/colonisation then they should be bathed with chlorhexidine, given clean clothing and transferred to a clean bed. Lesions should be occluded with an impervious dressing. After transfer, all linen should be treated as infected and the trolley/chair should be disinfected with or 70% isopropyl alcohol.

Visits to the other departments

Visits to other departments by MRSA colonised patients should be kept to a minimum. When this is essential, prior arrangements should be made with the senior staff of the departments concerned. These patients should be seen or treated at the end for the working session and should spend the minimum time in the department. They should be sent for when the receiving department is ready and not left in a waiting area with other patients.

Surgical operations

Clearance of MRSA carriage should be attempted before surgery whenever possible and the risk of major staphylococcal sepsis assessed. Existing lesions should be covered with an impermeable dressing during the operation and the adjacent areas treated with 70% isopropyl alcohol.

Any patient with a history of MRSA within the past year requiring cold surgery must be screened PRIOR TO ADMISSION i.e. at Outpatients. A full screen must be taken; the patient should NOT be admitted to hospital before all results are received negative. In the event that laboratory analysis indicates persistence of MRSA carriage and surgery cannot be postponed until after eradication, the Infection Control Unit should be consulted.

Ambulance transportation

The ambulance service should be notified prior to transfer. Terminal disinfection of the ambulance may be indicated; therefore the Infection Control Unit should be informed of all such transfers.

Transfer to other hospitals

Inter-hospital movements should be kept to the minimum possible. It is the responsibility of the transferring ward to identify the patient as MRSA positive and to flag the patient's notes. Existing policy arrangements concerning such transfers should be reviewed and followed. The Infection Control Doctor of the receiving hospital should be informed.

Discharge of patients

The General Practitioner, other health care and relevant social agencies involved in the patient's care should be informed and advised of decontamination procedures. Patients should be informed that there is **no risk to healthy relatives**. If a relative or other close associate of the patient is a hospital employee, the Infection Control Doctor should be informed. Whilst an attempt should be made to decolonise the patient in hospital, it is important to note that continual positive results do not preclude discharge particularly if this is to the patient's home.

Deceased patients

The Mortuary and Infection Control Unit should be informed. Precautions taken should be the same as when the patient was alive. Plastic body bags are not necessary; however any lesions should be covered by impermeable dressings.

Decontamination of colonised staff

Staff who are solely nasal carriers and on a decolonisation protocol can remain at work unless they work in a critical area (e.g. ITU) when individual decisions will be made by the Infection Control Doctor. Their fitness for work will be assessed by the Infection Control Doctor.

Staff who are more widely colonised should remain off work until they have been cleared of carriage. Re-sampling of the member of staff should be done as directed by the Infection Control Doctor.

Special instructions for patients admitted from other hospitals

Because of the enormous resources which are expended in screening all staff and patients when even one unexpected case of MRSA is found in a high risk, all new patients transferred to ITU from other hospitals and foreigners aged 60 or over, should be isolated on admission. Screening swabs should then be sent from the patient. If these are positive no further screening on the ward is necessary since precautions have been in place from the outset.

Furthermore since MRSA is endemic in many hospitals in Europe and North America, all foreigners over the age of sixty as well as all Maltese patients who have undergone treatment in foreign hospitals within the previous three months should be screened on admission for MRSA carriage.

Dr. M.A. Borg
Infection Control Officer

July 1997

MRSA ISOLATION

Visitors	Must report to the nurse in charge before entering the room.
Isolation room	Door should be kept <i>closed</i> . Patients should not leave the room.
Aprons or gowns	Disposable plastic aprons must <i>always</i> be worn for <i>any</i> activity involving patient contact. Disposable gowns are only required for <i>prolonged</i> physical contact.
Masks	<i>Only</i> needed if patient is sputum-positive and is coughing or needs suctioning.
Hands	Hibisol must be applied <i>every time</i> after exiting the cubicle. Before leaving the room, hands should be washed with water and Hibiscrub.
Gloves	Should be worn for direct contact with patient and handling of body fluids.