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## 6.1 MRSA: INFORMATION SHEET

(Meticillin Resistant *Staphylococcus aureus*)

### What is MRSA and why is it important?

*Staphylococcus aureus* is a very common bacterium in hospitals and the community. Usually it causes superficial problems such as boils / infections of cuts and wounds. Many people carry the bacterium in their nose and it does them no harm.

As a result of heavy use of antibiotics in hospitals over the last 30 years some strains of *Staphylococcus aureus* have become resistant to many antibiotics.

MRSA is a strain of *Staphylococcus aureus* resistant to Meticillin, flucloxacillin, penicillins and cephalosporins. Some strains are, in addition, resistant to other groups of antibiotics.

Some strains of MRSA are less pathogenic, i.e. less able to cause infection than ordinary *Staphylococcus aureus*. However, when MRSA does cause an infection this can be very difficult to treat because it is resistant to most available antibiotics. Active agents against MRSA tend to be expensive and toxic, e.g. vancomycin. It is therefore better to control the spread of this organism, and minimise the risk of patients developing infection.

MRSA is likely to cause the same types of infections as the ordinary *Staphylococcus aureus*. These are usually infections of the skin such as wound infections or boils. Occasionally it may cause urinary tract infections and more rarely may cause deep infections such as abscesses, bone infections or septicaemia. Recently, isolates producing Panton Valentine Leucocidin (PVL) have been associated with necrotising pneumonia and necrotic skin lesions. Deep infection, in particular, can be extremely difficult to treat. In addition patients may develop MRSA colonisation of the respiratory tract e.g. nose, throat or sputum.

There is concern about hospital in-patients developing infections because they are already unwell and debilitated, and therefore more likely to acquire infection. They may also be subjected to invasive procedures such as catheterisation, which increases the risk of infection. Finally, patients are often receiving antibiotics, which, by killing their normal bacteria, allow resistant organisms such as MRSA to colonise their skin and other sites.

## How does it spread?

MRSA is like any *Staphylococcus aureus*. It can be carried in the nose throat and / or on the skin of people without causing any infection. Failure to follow normal hygiene procedures such as washing hands after examining a patient or changing dressings etc may result in spread of the organism, via hands, to other patients.

MRSA can also survive in the environment. Dust is largely made up of human skin scales and ordinary *Staphylococcus aureus* and MRSA can be shed from carriers on these skin scales and survive for one to two days if dust is allowed to collect. Patients and staff may then become colonised from this source.

Some people are heavy shedders of *Staphylococcus aureus* and MRSA and are a source of infection.

## Prevention of spread

Since the most likely way of spreading MRSA is on your hands, thorough hand washing using soap and water followed by careful hand drying, after any contact with patients or potentially contaminated surfaces, is the best way to minimise the risk of spread.

It is also important to clean all horizontal surfaces, door handles, etc regularly to prevent build up of dust where MRSA or ordinary *Staphylococcus aureus* may persist. Such surfaces should be washed with general purpose detergent and warm water and thoroughly dried.

## MRSA additional information

Fit and healthy individuals are unlikely to develop infections due to MRSA. If they do they will most probably be superficial wound infections, which often clear without antibiotics anyway.

MRSA is no more likely to harm a baby in the uterus (or out of it) than any other *Staphylococcus aureus*. These organisms are carried on the skin by a considerable proportion of the population and are not associated with damage to or loss of the foetus.

Family members at home are at no more risk of acquiring infection, from MRSA than from the ordinary *Staphylococcus aureus*.

## 6.2 RISK ASSESSMENT OF PATIENTS AND WARDS in BGH

It is important that the individual needs of the MRSA positive patient(s), the type of ward and the vulnerability of other patients are taken into account when assessing the requirement for single room isolation or multi patient (cohort) nursing areas.

### Assessment of patients

Patients are more likely to be colonized with MRSA if:

- they have previously documented MRSA carriage or infection
- they are residents of a nursing or residential home
- they have had previous hospital admissions, with the risk being highest in those with the longest periods of admission.

Once colonized with MRSA many patients remain colonized, especially if they have chronic wounds, chest disease, or devices such as indwelling urinary catheters or percutaneous gastrostomy. However, some patients become clear either spontaneously or following treatment.

Previously colonized patients can be regarded as clear if **they have three consecutive negative MRSA screens taken at intervals of at least one week from all relevant screening sites while not receiving topical decolonization therapy or systemic antibiotic therapy likely to suppress MRSA.** (Usually glycopeptides, tetracyclines, rifampicin, fusidic acid, linezolid or macrolide if their strain is sensitive). However, previous carriage should be considered when choosing antibiotic prophylaxis for procedures, especially if artificial material is to be implanted.

The clinical alert will remain attached to the patient's notes.

### Assessment of areas

BGH inpatient wards can be regarded as either high risk or low risk areas.

## HIGH RISK AREAS

- Intensive care/ SCBU,
- Orthopaedic, General Surgery,
- Child Health, Labour Ward, Gynaecology, Obstetrics
- Haematology, General Medicine, DME, Dermatology, Renal Dialysis

Single room isolation must be sought with all precautions, or nursed in multi patient (cohort) area depending on colonization/ infection of patient. If this is not possible seek advice from a member of the Infection Prevention Control Team.

## LOW RISK AREAS

- Mental Health
- Learning Disabilities

Patient may be placed in main ward areas. Standard precautions (see section 2.1) and good hand hygiene practice before and after all patient contact.

**Patients with a skin condition, e.g. psoriasis or eczema should be nursed in a single room isolation. This applies to high and low risk areas. Patients who have MRSA in their sputum and are coughing should also be in single room isolation until symptoms resolve**

## OUTPATIENT AREAS

Isolation unlikely to be practical in outpatients and day hospital areas. A risk assessment should be made regarding the risk of transmission and attempts made to segregate patients assessed as high risk of transmission. This assessment should include, for example, the presence of wounds, widespread skin lesions and indwelling urinary catheters. Patients should be scheduled for the end of clinics where possible.

**Care of the MRSA positive patient in high risk areas.** (Also for certain conditions in low risk areas - see paragraph above).

## Side room

Patient should be nursed in a single room. The door of room must remain closed. If unable to obtain a single room, contact the IPCT for advice.

## **Hand Hygiene**

Hand hygiene is the most important infection control measure in preventing the transmission of MRSA.

Hands must be washed and dried:

- Before and after patient contact
- Before leaving the room
- Apply alcohol hand gel after leaving the room.

## **Gloves and apron (disposable)**

Must be worn, by all staff, for all procedures that involve patient contact. Gloves and apron must be removed before leaving the patient. Wearing gloves does not preclude the need for hand washing.

## **Masks and eye protection**

Are not essential but if procedures are to be undertaken in which there is a risk of splashing of blood/body fluids then it would be sensible to use them.

## **Crockery and cutlery**

Use normal utensils. Wash in dishwasher.

## **Linen**

Treat as infected, follow local policy. For personal laundry follow any local arrangements in place. Change linen and clothing on a daily basis.

## **Waste**

Should be treated as clinical waste i.e. placed in a yellow clinical waste bag.

## **Equipment**

Clean with general-purpose detergent (GPD) and warm water. For equipment to be removed from room, clean with 1,000ppm solution.

## **Fans**

Portable fans should not be used close to a patient known to be MRSA positive when nursed in a bay with other patients.

## **Visitors**

There is no need for visitors to wear protective clothing. They should, however, be encouraged to thoroughly wash and dry their hands and apply alcohol hand gel after leaving the patient's room.

## **Investigations**

MRSA infection/ colonisation must not interfere with the management of the patient. When visiting a diagnostic or therapeutic department, the Departmental Manager must be informed, in advance, so that appropriate infection control measures for that department can be implemented.

## **Cleaning**

### **Routine cleaning**

Routine cleaning of siderooms occupied by colonized patients should be with detergent.

### **Terminal cleaning**

On transfer/discharge the patient's furniture should be cleaned with 1,000ppm Chlorine solution. The floors should also be washed with 1,000ppm Chlorine solution. Ensure laundering of curtains.

Additional advice can be obtained from the Infection Prevention Control Team or the General Services Manager or Supervisor.

### **Cleaning in areas visited by colonized patients**

Where patients have been established on effective topical decolonization for 2 or more day's surfaces in contact with the patient should be cleaned with detergent when patients visit theatres or radiology for procedures or investigations. In this context, 'effective' means that the patient's MRSA strain is known to be sensitive to mupirocin and the decolonization regimen has been properly applied. These patients do not have to be booked last on the list. When patients are not established on decolonization surfaces should be cleaned with 1,000ppm Chlorine solution.

## **Transfer & discharge of MRSA positive patients to another hospital or ward**

When discharge or transfer of the patient is proposed, ward staff must inform a member of the Infection Prevention Control Team and the receiving ward. If unable to follow this policy, document this in the patient's notes and state reasons and inform a member of the ICT.

## **Care of the MRSA positive patient in low risk areas**

All patients can normally be nursed in the main ward areas. If concerned, seek advice from a member of the Infection Prevention Control Team. Use Standard Precautions, hand hygiene remains the most important infection control procedure. Send linen and clothing as per normal, follow linen policy.

Eradication treatment and further screening is only indicated if patient has signs of a clinical infection or is due for transfer to a High risk area. For terminal cleaning and cleaning of equipment to be used on another patient, clean with 1,000ppm Chlorine solution.

## **Transfer of patients to high risk areas**

Transfer of patients, not known to be MRSA positive, from another hospital out with the Borders region and from any nursing/residential home:

Place patient into single room isolation and undertake a full MRSA screen. Do not commence decolonisation treatment until screening results are known. Treat/manage appropriately when results are known

Should you require further advice on these, or any other points, contact the Infection Prevention Control Team.

- Infection Control Nurses: bleep 6254/6255
- Infection Control Doctor: bleep 6231



## 6.3 MRSA policy for Borders General Hospital (BGH)

**Aim:** To minimise the spread of this pathogenic organism in hospital and community settings

### Prevention of hospital infection

The main mode of transmission of the bacteria is on the hands of staff. The potential for cross infection is reduced if there is strict adherence to hand hygiene following all patient contact.

### MRSA screening

The following groups of patients should be screened for MRSA on admission or within six weeks prior to admission for elective cases.

- all elective admissions except paediatrics, obstetrics and psychiatry
- day case surgery where this involves implantation of metalwork or plastic including mesh
- all emergency admissions except paediatrics, obstetrics and psychiatry.

Identification of a patient colonized or infected with MRSA will normally be made by the Microbiology laboratory or the Infection Prevention Control Team who will contact the appropriate Charge Nurse and Ward Medical Staff to give advice.

### Admission procedures

Admission of patients known to be, or who have previously been MRSA positive to a high risk area:

- inform a member of the Infection Prevention Control Team (IPCT)
- undertake a full MRSA screen

If the patient is still colonized they should have appropriate transmission based precautions instituted. If the patient is regarded as 'clear' (see 6.2 above) they can be nursed in a bay without transmission based precautions pending the result of the admission screen. When results known, take appropriate action as per policy.

Admission of patients from another acute or community hospital or nursing or residential home to a high risk area:

- undertake a full MRSA screen
- when results known – take appropriate action as per policy

### **Screening of contacts of newly identified cases of MRSA colonization**

Identification of MRSA colonisation or infection in patients some time following admission will often imply transmission within the ward. It may then be appropriate to screen contacts of the index case to prevent further transmission within the ward. When new cases such as these are identified the need for contact screening will be considered by the IPCT in discussion with ward staff.

### **Discharge of Patients with MRSA to the Community**

Carriage of MRSA should not be a contra-indication to the transfer of a patient to a care home. However, the Home may require support and advice regarding the patient's transfer and future care and treatment.

### **Treatment of the MRSA positive patient**

The Infection Prevention Control Team will advise you if an attempt should be made to decolonise patients known to be positive with MRSA. Please remember that, as with any other procedure in hospital, any proposed investigation or treatment should be adequately explained and discussed with the patient and/ or their relatives, and that they have the right to decline such intervention.

The general health of the patient may indicate that a decolonisation regimen for MRSA might not be appropriate.

Ward medical staff are advised to contact the IPCT or Microbiologist on call for advice when positive screening results become available. The IPCT will be happy to discuss any questions about the topical decolonisation regime.

### **Informing a patient that they are MRSA positive**

In the first instance this must be undertaken by a member of the Medical/ Nursing staff caring for the patient. However, after this the IPCT are happy to speak to patients/ relative if this is deemed appropriate or further questions/ help is required.

Relatives should only be informed with the agreement/ knowledge of the patient. For children, the parents/ guardian will be informed.

The IPCT recommend that this is available for the patient/ relatives/ guardian where appropriate, maintaining patient confidentiality at all times.

## 6.4 MRSA DECOLONISATION TREATMENT (BGH)

Decolonisation treatment will last 5 days. Normally a maximum of only two consecutive treatments will be given, but contact IPCT for advice.

### Topical decolonisation treatment

1. Apply Mupirocin (Bactroban) nasal ointment three times a day to the inner surface of the nostrils (use a cotton wool bud to enhance application). If the patient's MRSA strain is resistant to mupirocin, discuss with the IPCT for alternative treatment
2. Apply 4% Chlorhexidine cleansing solution instead of soap. Rinse off and towel dry
3. Chlorhexidine cleanser should also be used at least twice weekly as a shampoo whilst on the decolonisation treatment (hair conditioner may be used for the final rinse)
4. Alternative treatments are available for patients whose skin cannot tolerate chlorhexidine, for further information contact the IPCT
5. The patient should use chlorhexidine 0.2% mouthwash two times daily
6. For eye surgery patients topical chloramphenicol eye drops should be given for the course of decolonization.

The patient's bed linen (and night wear if possible) should be changed daily during the decolonization treatment.

### Post-decolonisation screening

- This should be commenced no sooner than 48 hours after the treatment regime has been completed
- If patient commences or remains on antibiotic treatment active against MRSA, delay screening until 48 hours after antibiotics have been discontinued
- Mark specimen 'MRSA clearance screening'
- If the first screen is negative, consult the Infection Prevention Control Team who will reassess the need for further screening

- If the first screen is positive consult the Infection Prevention Control Team who will reassess the need for further treatment.

**A negative screen following decolonization does not guarantee that the patient will not recolonise at a later date. The patient record/ notes continue to alert of the history of MRSA carriage**

### **Staff screening**

This is very seldom necessary but may be useful when unexplained acquisition of MRSA occurs within NHS Borders. The decision to screen will be agreed with senior medical and nursing staff within the involved board. The process will be co-ordinated by Occupational Health and the Infection Prevention Control Team. Staff found to be MRSA positive will be seen and counselled by a member of Occupational Health staff. The appropriate decolonisation treatment will be prescribed and provided, and follow up screening organised.

Occupational Health will advise when it is appropriate to return to work.

## 6.5 MRSA GUIDE: COMMUNITY HOSPITALS, LONG TERM CARE, PRIMARY HEALTHCARE STAFF/ MENTALHEALTH AND LEARNING DISABILITIES AREAS

These guidelines are for staff and carers who look after patients in the community health care areas and in their own homes. Queries concerning this guidance should be in the first instance directed at the Infection Control Nurses, BGH (01896 826254).

### Principles of Care

Patients who are MRSA positive and live in their own home or long term home care setting should be free to live a normal life. Standard Infection Control Precautions should be applied at all times and hand hygiene remains the most important infection control activity in preventing the spread of infection.

MRSA is not generally a risk to normal, healthy people in the community. The main risk is to hospital patients, especially those who are severely ill and those undergoing major surgical operations.

All patients should be nursed using standard precautions and, if possible, patients should not be restricted in any way. Standard precautions reduce the risk of healthcare associated (hospital / care setting) infections to patients, staff and carers. These precautions should also apply to visitors.

If the patient is a carrier of MRSA and has no clinical signs of infection it is not necessary for them to undergo further screening or a decolonisation regimen. This is usually only appropriate if the patient is to have hospital inpatient treatment or has an underlying medical condition that requires this. It is essential to let the hospital staff know that the patient has MRSA.

*If a patient has an underlying skin condition, e.g. eczema / psoriasis and has MRSA or is sputum positive and coughing- it may be necessary to place them in a single room. Seek advice from Infection Control Team (see below).*

### **Do patients have to be clear of MRSA before they are discharged from hospital?**

**No.** Carriage should not be a contraindication to the transfer of a patient to their own home or a nursing / residential home. Any

residential or nursing home can apply the simple precautions necessary when caring for a person who has MRSA.

### **Informing a patient that he/she is MRSA positive**

In the first instance this must be undertaken by a member of the Medical/ Nursing staff caring for the patient. However, after this the IPCT are happy to speak to patients/relative if this is thought appropriate or further questions/help is required.

Relatives should only be informed with the agreement/ knowledge of the patient. For children, the parents/guardian will be informed.

For patients within their own homes, who wish to speak to a member of the ICT, the Health Protection Infection Control Nurse can be contacted at Public Health Department, Newstead 01896 825565.

### **Clinical alert**

All known patients with MRSA, will have a clinical alert sticker on front cover of their medical notes. The Inside Page will have an MRSA sticker. Contact a member of the Infection Prevention Control Team if this sticker is required.

For further advice please contact the Infection Prevention Control Team:

- Infection Control Nurses: 01896 8(26254) or 01896 8(26255)
- Infection Control Doctor: 01896 8(26231)
- Microbiology Laboratory Staff: 01896 8(26258)