

State of Kuwait

Ministry of Health

Infection Control Directorate

**Guidelines for the control and prevention of *Meticillin Resistant Staphylococcus Aureus* (MRSA) in health care facilities**

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## **INTRODUCTION**

*Staphylococcus aureus* (*S.aureus*) is one of a number of bacteria that colonizes human skin, nasal passages and the mouth. Between 20% and 40% of the population carry this organism without any ill effects.

MRSA stands for Methicillin-resistant *Staphylococcus aureus*. Methicillin is a marker which indicates resistance to all beta-lactame antibiotics. MRSA can be carried as an asymptomatic colonization of normal skin sites, (e.g., nose, perineum, axillae) or abnormal sites such as leg ulcers and sites of catheterization . Infections vary in severity and patients particularly at risk from infection are surgical patients; intensive care patients; immunocompromised patients; patients with open wounds or intra-vascular devices. Both colonised and infected patients must be viewed as potential sources of infection.

MRSA is neither more infectious nor more virulent than susceptible *S.aureus*; it is just more difficult to treat where there are a few effective antibiotics.

VISA (Vancomycin intermediate *S. aureus*), GISA (Glycopeptide intermediate *S. aureus*) and VRSA (Vancomycin resistant *S. aureus*) infections are still relatively rare and typically occur in patients with MRSA colonization/infection after persistent exposure to glycopeptides. It is prudent to assume that VISA/GISA (and by inference VRSA) is as transmissible as MRSA in the healthcare setting.

## **AIM OF THE POLICY**

- To ensure patients who are identified as MRSA colonized/infected are managed safely and effectively.
- To protect patients and healthcare workers (HCWs) from colonization or infection with MRSA.

## **GLOSSARY OF TERMS:**

**Carrier of MRSA** - A person who harbors MRSA with no overt expression of clinical disease, but who is a potential source of infection. Recognized carrier sites for MRSA include nose, throat, skin sites such as perineum, groin and axillae. Carriage can be transient, intermittent or of long duration.

**Infection with MRSA** -The entry and multiplication of MRSA in the tissues of the host where tissue damage can occur

**MRSA Contact** - A patient who has been residing in the same area as an MRSA positive patient for 24 hours or longer.

**Cluster** -An unusual collection, real or perceived, of events (eg. positive microbiology reports) above the baseline, that are grouped together in time and space.

**Colonization** - The presence of microorganism at a body site without evidence of tissue damage. Colonization may be a precursor to infection. Transient carriage may occur on the unwashed hands of a health care provider which become a potential method of transmission for the organisms.

**Decolonization** - The treatment regimen used in an attempt to eliminate MRSA carriage or colonization through the use of antimicrobial soap, topical and/or systemic antibiotics.

**Contamination** - The presence of an agent (eg. MRSA) on a surface or in fluid or material that is a potential source for the transmission of infection.

**Meticillin** - A class of semi-synthetic penicillins which are usually effective against penicillin resistant *S.aureus*. Meticillin has been used in place of Methicillin in accordance with the new international Pharmacopoeia guidelines

**Molecular typing** - Laboratory tests using methods such as DNA or plasmid analysis to identify and differentiate strains of organisms

**Phage typing** -A laboratory test which is used to identify similar strains of an organism by determining which bacteriophages can infect the strain and cause lysis.

## **MRSA TRANSMISSION**

MRSA is most commonly transmitted through contact:

1. Direct – skin to skin contact with MRSA colonized or infected patient. The most common route of MRSA transmission is via hands which may become contaminated by contact with colonized or infected patients.
2. Indirect - the organism may be spread via equipment that has not been appropriately decontaminated.

Transmission by the airborne route is much less likely to occur except in burn units or dermatology units where aerosolized MRSA may contaminate environmental surfaces.

## **SURVEILLANCE**

Surveillance must be undertaken routinely as part of the hospital's infection control program.

For benchmarking purposes, surveillance data should be collected and reported in a consistent way, to agreed case definitions and using agreed specialty activity denominators, with stratification.

Surveillance data should be fed back to hospital staff routinely, readily intelligible to most hospital staff, considered regularly by hospital committees, and used in local infection control training.

## **ANTIBIOTIC STEWARDSHIP**

Inappropriate antibiotic use promotes the emergence and spread of antibiotic resistance. Antibiotic stewardship programs have been shown to result in significant reductions in MRSA colonization and infection rates.

Attention must be given to the following.

- Avoidance of inappropriate or excessive antibiotic therapy and prophylaxis in all healthcare settings.
- Ensuring that antibiotics are given at the correct dosage and for an appropriate duration.
- Limiting the use of glycopeptide antibiotics to situations where their use has been shown to be appropriate. Prolonged courses of glycopeptide therapy should be avoided if possible.
- Reducing the use of broad-spectrum antibiotics, particularly third-generation cephalosporins and fluoroquinolones, to what is clinically appropriate. Since their use is an independent risk factor for MRSA colonization and infection.

- Instituting antibiotic stewardship programs in healthcare facilities, key components of which include the identification of key personnel who are responsible for this, surveillance of antibiotic resistance and antibiotic consumption, and prescriber education.

## **MRSA SCREENING**

### **A- Active patient screening policy**

Active screening of patients for MRSA carriage should be performed and the results should be linked to a targeted approach to the use of isolation and cohorting facilities.

#### **1- Patients to be screened**

##### **a. Patients at high risk of carriage of MRSA include those who are:**

- known to have been infected or colonized with MRSA in the past,
  - frequent re-admissions to any healthcare facility,
  - direct inter hospital transfers ,
  - recent inpatients at hospitals abroad or hospitals in Kuwait which are known or likely to have a high prevalence of MRSA,
  - residents of residential care facilities where there is a known or likely high prevalence of MRSA carriage,
  - Other risk groups may be defined by local experience, based on screening initiatives or outbreak epidemiology.
- All those patients should be screened at the time of admission unless they are being admitted directly to isolation facilities and it is not planned to attempt to clear them of MRSA carriage
  - Patients who are regular attendees e.g. patients having chemotherapy, patients using the Haemodialysis service, patients will be screened on admission to the service and thereafter will be screened on a (monthly /every 3 months / according to local prevalence ).

##### **b. Certain high-risk units**

- intensive care (ICU),
- neonatal intensive care NICU,
- burns,
- transplantation,
- cardiothoracic,

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- orthopedic,
  - trauma,
  - vascular surgery,
  - renal,
  - other specialty units as determined by the infection control team and as agreed with the senior clinical staff of the units and relevant hospital management structure.
- Screening all patients (regardless of their risk-group status) should be done on admission to high-risk units.
  - Regular screening (**weekly or monthly, according to local prevalence**) of all patients on high-risk units should be performed routinely.
  - The decision about whether or not to perform routine admission screening should be made clearly by the infection control team in consultation with the senior clinical staff of the units, and should be agreed with hospital management. Such ‘blanket’ screening may be used intermittently, and may be especially worthwhile if the local prevalence of MRSA carriage in such patients is higher than usual.

## 2. Screening site:

A full MRSA screen includes swabs from all the following sites:

- Nose (one swab to be used for both anterior nares),
- Groin or perineum.

### Plus:

- All broken or abnormal skin, pressure sores, ulcers, surgical wounds ,cuts/abrasions, excoriated skin and areas of exfoliative skin e.g. eczema, psoriasis, or dermatitis,
- Umbilicus in neonates,
- Intravenous cannula sites,
- Urinary catheter exit site if producing exudates,
- Catheter specimen of urine( CSU) if catheterized,
- Sputum if productive cough present,

## 3. Swabbing

- When swabbing the nose, dip swab briefly into transport medium prior to swabbing anterior nares of both nostrils. Gently insert swab into anterior nares (just inside the nostril) perform circular movement x3 and repeat in other nostril.
- When swabbing skin areas use reasonable friction.
- The groin should be vigorously swabbed.

### **B- Follow-up screening**

Re-emergence of MRSA is common and can occur over periods of up to a year or more particularly where antibiotics have been prescribed, Therefore :

- Patients who are colonized or infected with MRSA whilst in hospital must be kept under review.
- Once a patient has had one negative MRSA screen from all previously positive sites, a further two negative screens will be required before isolation precautions can be discontinued (three in total). These screens should be obtained at least **48 hours after the patient has stopped antibiotic treatment/antiseptic decolonization** and 2nd and 3rd swab at weekly intervals .
- Chronic positive patients will be considered as MRSA carriers and should be re-screened monthly while inpatient.
- Previously positive patients should be re-screened on subsequent readmission **irrespective of previous evidence of clearance.**

### **C- Screening of MRSA contacts in high-risk units**

- Screen all contacts of MRSA case in only high risk areas or in situations of high MRSA prevalence/ outbreak.
- The contact is defined as a patient who has been residing in the same bay area as an MRSA positive patient for 24 hours or longer.
- When an existing patient within the bay is identified as being a confirmed positive, the following actions must be taken;
  - Screen all contacts. If any of them confirmed positive, take a full screen.
  - Only contacts of the index will require screening. If subsequent patients are admitted to the bay area with contacts where infection control measures are in place, screening will not be required.
  - At least three screens should be performed at weekly intervals before a patient can be considered to be at low risk of having acquired MRSA .

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### Contact screening site

- Nose – use the same swab for both nostrils
- CSU – if catheterized
- Areas of non intact skin

### D- Staff screening

- HCW will be screened for carriage of MRSA if they are **epidemiologically linked** to an area where unexplained transmission of MRSA has been identified and/or there is **an increase in the rate of MRSA** transmission amongst patients in spite of the introduction of specific infection control measures.
- Screening of staff must only be undertaken after informing of head of department
- Staff screening, if required, must be performed at the start of a shift, as transient or short term carriage of MRSA by staff may occur following prolonged close contact with a MRSA positive patient.

### Screening site

- Appropriate sampling sites for staff screening are anterior nares and any areas of abnormal or broken skin.
- As a guide to use of eradication measures, one should consider screening the hairline and groin/perineum of staff members found to be MRSA positive.

### MANAGEMENT OF MRSA INFECTED OR COLONIZED PATIENTS:

The general principles of infection control should be adopted for the management of patients with MRSA. Patients identified with MRSA infection or colonization should be should be placed on Contact Precautions. Those patients should be informed of their condition, and MRSA information sheet is submitted to them.(appendix 1)

### I. PATIENT ISOLATION

Patient isolation for those infected or colonized with MRSA should be in a designated closed area that should be clearly defined; in most facilities, this will be either single-room accommodation or cohort areas/bays with clinical hand washing facilities. Consideration should be given to the provision of isolation wards to contain MRSA spread.

#### 1. Patient Placement

- Ideally place the patient in single room.

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- Consider cohorting in designated cubicle for clustering of MRSA cases.
- The MRSA colonized/infected person should never be placed with a person at high risk for infection (i.e., patient with tracheostomy, gastrostomy, central line, urinary catheter, open wound or immunocompromised).
- Nursing assignments should take into consideration the work load when dealing with isolated patients as to not allow failure of the implemented contact precautions.
- The door of the isolation room should be kept closed at all times to minimize spread to adjacent areas. If this is likely to compromise patient care , for instance in elderly confused patients, a risk assessment should be made regarding whether the door may be kept open .
- Isolation instructions should be displayed clearly on the door of isolation room.(check isolation policy)
- Discharge the patient as soon as his medical condition allows.

## **2. Hand hygiene:**

- Hands should be adequately decontaminated before and after patient contact and on leaving and isolation facility. Hands should be decontaminated by thorough washing and/ or the application of a 70% alcohol hand rub preparation.

## **3. Personal Protective equipment (PPE):**

### **Gowns :**

- Disposable gowns should be worn by all staff handling the patient or having contact with their immediate environment or items in the patient's room, or if the patient is incontinent or has diarrhea, an ileostomy, a colostomy, or wound drainage not contained by a dressing.
- This also applies to visitors who assist with the patient's bodily care.
- Visitors who only have social contact with the patient, such as shaking hands, do not need to wear protective clothing but do need to decontaminate their hands after leaving the room.
- Remove the gown before leaving the patient's room.
- After gown removal, ensure that clothing does not contact potentially contaminated environmental surfaces to avoid transfer of microorganisms to other patients or environments.

**Gloves**

- It should be worn when there is contact with body fluids and handling of contaminated dressing or linen. Gloves do not cancel the need for hand decontamination
- During the course of providing care for the patient, change gloves after having contact with infective material that may contain high concentrations of microorganisms (fecal material and wound drainage).
- Remove gloves before leaving the patient's environment and wash hands immediately with proper antiseptic agent.
- After glove removal and hand washing, ensure that hands do not touch potentially contaminated environmental surfaces or items in the patient's room to avoid transfer of microorganisms to other patients or environments.

**Masks:**

- Masks are necessary for healthcare workers during procedures that may generate aerosols. (e.g. sputum suction or chest physiotherapy)

**4. Instruments and equipment**

- Instruments or equipment should preferably be single-patient use and discarded as clinical waste after use.
- If use of common equipment or items is unavoidable, then adequately clean and disinfect them before use for another patient.

**5. Clinical Waste:**

- All waste should be categorized as clinical waste and disposed of according to waste management policy
- use yellow waste bags for all waste bins in the isolation room and red waste bags for the toilet waste bins.
- Dedicated puncture proof sharp disposal boxes (yellow box) should be available inside the isolation room.

**6. Linen and laundry:**

- All linen from patient infected or colonized with MRSA should be considered to be contaminated/infected, including bedding and adjacent curtains, and should be managed in accordance with laundry policy.
- A dedicated laundry hamper should be provided in the isolation room.

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- All items should be sent to the laundry department bagged in a heat resistant water soluble bag  
( also known as “isolation laundry bag” , available from the laundry department)

### **7. Food and Catering services:**

- Single use trays and eating utensils are not required for isolated patient.

## **II. Management of MRSA Infection .**

### **a. General**

- Antibiotic therapy for MRSA should be in line with the antibiotic guidelines that are implemented in every hospital.
- Treatment should be discussed with the Microbiologist if uncertain.
- Patients with MRSA infection may require a course of antibiotics along with **decolonisation treatment**.
- Advice can be sought from the Microbiologist, delay in treatment can increase the risk of the patient developing a serious clinical infection. The patient will need careful monitoring and medical review.

### **b. MRSA Bacteraemia**

- An MRSA blood stream infection can lead to a life threatening sepsis if not diagnosed early and treated in an acute hospital.
- MRSA healthcare associated bacteraemia is a marker of prevalence of MRSA infection and should be reported.
- A Root Cause Analysis (RCA) must be carried out in each case to determine a possible cause for the infection, whether it was avoidable or not, and what lessons have been learned to prevent recurrence.

### **c. MRSA infected wounds and skin lesions**

- Assessment of the wound condition should be made by the clinical team and management should be decided according to wound management guidance.
- Wounds that are known to be infected with MRSA should be covered at all time.

- For chronic wounds, such as leg ulcers, dressings with anti-microbial properties may reduce the bio-burden in the wound and increase the chances of wound healing –consult the Microbiologist.
- Consideration should also be given to prescribing systemic antimicrobial therapy.
- Mupirocin topical ointment 2% is not suitable to treat clinically infected wounds.

**d. Infected IV Insertion sites in patients known to have MRSA**

- Remove line and re-site if access is still required
- Swab the site for culture and sensitivity
- Dress the site using an appropriate dressing;
- Mupirocin topical ointment should not be used around central venous catheter sites, Hickman lines or other plastic devices due to polyethylene glycol base of the cream.

**e. Infected Percutaneous endoscopic gastrostomy (PEG), Supra pubic Catheter Sites**

- Insertion sites for indwelling devices such as PEG tubes and supra pubic catheters can provide a focus for infection, and provide a route for MRSA to track along and potentially cause deep infection.
- If the insertion site is infected with MRSA medical advice should be sought as antibiotics may be required.
- Use of an appropriate dressing with anti-staphylococcal activity on the site/around the device should also be considered by microbiologist given that the compatibility of the dressing with the material of the device is known, due to the possibility that some chemical agents may damage indwelling devices and cause them to rupture.
- Mupirocin topical ointment should not be used around, peg sites or other plastic devices.

### **III. MRSA DECOLONIZATION**

All patients found to be MRSA positive will be considered for topical decolonization in an attempt to eradicate MRSA, and reduce the subsequent risk of infection.

The efficacy of any decolonization regimen will depend on the presence of wounds, skin lesions and foreign bodies such as urinary catheters, nasogastric tubes, haemodialysis lines, etc.

#### **1. Nasal decolonization**

- This should be achieved by applying mupirocin 2% in a paraffin base to the inner surface of each nostril (anterior nares) three times daily for five days. The patient should be able to taste mupirocin at the back of the throat after application.
- Nasal decolonization using topical nasal mupirocin should be used with skin decolonization using 4% chlorhexidine gluconate aqueous solution.
- Mupirocin should not be applied for open wounds (non intact skin).
- Mupirocin should not be used for prolonged periods or used repeatedly (i.e. for more than two courses for five days) as resistance may increase.
- Two days after completing the course of Mupirocin a 3 x MRSA screens should be taken at weekly interval.
- If all 3 screens are negative, Mupirocin nasal ointment and body wash should be stopped and infection control precautions for MRSA discontinued.
- If the result of any of the 3 MRSA screens is positive a second 5 day course of Mupirocin and skin decolonization should be prescribed.
- Two days after completing the second course of Mupirocin a further 3 x MRSA screens should be taken at weekly intervals. If any of these screens are positive skin decolonization should be continued.
- No further Mupirocin should be given and no further screens are required unless advised by the microbiologist as clinically indicated.
- If a patient has a nasal invasive device such as nasal cannula or nasogastric tube then treatment with a nasal ointment may be withheld or delayed until the device is removed.

## 2. Skin decolonization

### a. General:

- Skin decolonization using 4% chlorhexidine body-wash/shampoo is used in eradicating or suppressing skin colonization for short times, particularly pre-operatively.
- 7.5% povidone iodine or 2% triclosan can be used as alternatives according to local availability.
- Patients should bathe daily for five days with 4% chlorhexidine and hair wash twice on day two and five. The skin should be moistened and the antiseptic detergent should be applied thoroughly to all areas before rinsing.
- Special attention should be paid to known carriage sites such as the axilla, groin and perineal area, leaving the preparation in contact with skin always observe the recommended contact time of 3 minutes.
- The antiseptic should also be used for all other washing procedures and for bed bathing.
- After satisfactory completion of each bath and hair wash, clean clothing, bedding and towels should be provided.
- Two days after stopping skin decolonization, 3 x MRSA screens should be taken at weekly intervals.
- It should be continued until the patient is 3 negative MRSA screens are obtained. If not, skin decolonization should be continued during hospital stay.
- For patients with eczema, dermatitis or other skin conditions, attempts should be made to treat the underlying skin condition. Advice on suitable eradication protocols for these individuals should be sought from a consultant dermatologist.
- Careful consideration should be given in neonates regarding the appropriate use of agents used for decolonization. This should be discussed with the infection control team and paediatrician/neonatologist. Octenisan is approved liquid disinfectant used as a total body wash for neonate or patient with allergy. (appendix 2 can be used as a guidance)

### b. Tracheostomy Site

- Once the exposed edges of a permanent/long term tracheostomy site is healed, it should be carefully cleaned daily as part of topical decolonization.
- There is nothing that can be specifically done to reduce MRSA colonization from this site.

**c. PEG and Supra pubic Catheter Sites**

- Where sites are well-healed they can be treated as 'normal' skin during topical decolonization for MRSA, and washed using decolonization solutions.
- Topical agents may not be appropriate here as there is a risk of degeneration of jejunostomy tubes and continuous ambulatory peritoneal dialysis (CAPD).
- Use an aseptic technique when handling the device and remove it as soon as clinically possible.

**3. Throat decolonization**

- Treatment of throat carriage should only be considered in exceptional circumstances, e.g. when there is evidence that there is transmission from a throat carrier in a continuing outbreak or when the patient carrying MRSA in the throat has experienced episodes of invasive infection.
- Systemic treatment should only be prescribed on the advice of the consultant microbiologist in the hospital.
- If treatment is required, should be with appropriate monitoring e.g. regular liver function tests (LFTs) to monitor effects of the drugs on the liver AND restricted to one course of treatment (should not be repeated) AND the possible side-effects should be explained to the patient.
- Systemic treatment should be given in conjunction with nasal mupirocin and skin decolonization.
- The value of local treatment for throat carriage such as antiseptic gargles(eg.Zordyl mouthwash) or sprays is uncertain, but may reduce the organism load (no recommendation).

**4. Wound decolonization**

- Local wound care policies should be followed.
- Mupirocin ointment should only be used on wounds/ulcers in very specific circumstances too small wounds less than 5cm x 5cms and only under the direction of the Consultant Microbiologist.
- The polyethylene base is nephrotoxic and may be absorbed through large areas of raw tissue and therefore should not be applied to large open wounds (ie leg ulcers).
- Use of antibiotic creams for colonized wounds should not be used due to resistance.

#### IV. CLEARANCE TEST

- Following decolonization protocol or management of MRSA infection as mentioned earlier, follow up screening of all sites which were previously positive in colonized or infected patients should be performed weekly for three weeks.
- Sampling should be continued until three sets of negative swabs are obtained to consider the patient as MRSA free.
- If the patient is still positive, may be considered as a chronic carrier.

#### V. MOVEMENT & TRANSPORTATION OF MRSA COLONIZED OR INFECTED PATIENTS

- Patient's medical treatment and care must not be prejudiced by their MRSA status. Refusal to accept transfer of a patient is not justifiable on the basis of the risk posed to other patients by an individual's carriage of or infection with MRSA. All units should have procedures in place and adequate facilities for containment of MRSA.
- The movement of patients with MRSA should be kept to a minimum to reduce the risk of cross-infection, but this should not compromise other aspects of care, such as rehabilitation.
- During patient movement, lesions should be occluded whenever possible with an impermeable dressing.
- HCW's (e.g. doctors, nurses, physiotherapists, technicians, paramedics & porters etc. ) who may be in contact with the patient -during patient movement and transportation -should wear :
  - o Disposable gowns to protect their clothing whilst in contact with the patient or delivering direct patient care. Disposable gowns should be removed when contact with the patient had finished and disposed as clinical waste.
  - o Gloves need to be worn **only** if staff transporting the patient has skin abrasions.
- HCW's should decontaminate their hands thoroughly before and after dealing with the patient.
- The trolley or chair should be decontaminated with general purpose detergent and hot water followed by an approved disinfectant and dried thoroughly.
- Equipment and linen that has been in contact with patients should be dealt with as infected, in accordance with local policy. Refer to page 12.

*The single most important way to prevent the spread of MRSA is effective decontamination of hands before and after every patient contact.*

**A. Transfer within the health care facility:**

- Where patients need to attend departments for essential investigations (i.e., x-ray department, outpatient department) or other specialist departments, the receiving area should be notified of the patient's MRSA status in advance of the transfer( e.g. documentation on the request form)
- Arrangements should be put in place to minimize their contact with other patients (i.e., to be called forward when the department is ready for them and to ensure that they are not held in communal waiting whilst in contact with the other patients). Appendix 3.

**B. Transfer to other healthcare facilities:**

- The Ambulance Service should be informed of the MRSA status of the patient at the time of arranging transport.
- In ambulance transportation: Colonized/infected patients without skin shedding may be transported with others with strict application of contact precautions as described above. Patients who are heavily colonized by MRSA and are considered to be heavy skin shedders e.g. have severe psoriasis or eczema should be transported **alone**.
- The receiving health-care facility must have written/ verbal communication on the MRSA status of the patient from the discharging ward.

## **VI. VISITORS**

- The patient and/or their relatives should be given an explanation of what MRSA is by the nurse/doctor caring for them, reinforced by an MRSA information leaflet. (Refer to appendix 1A-1B).
- Normal visiting is encouraged; there is no risk to people in good health, pregnant women or children.
- All visitors to the isolation room and staff from other wards and departments, e.g. physiotherapists, radiographers, other medical teams, students, etc., should only enter after permission and instruction from the nurse in charge.
- All visitors should wash their hands or apply 70% alcohol hand rub before and after visiting time.
- Visitors do not need to wear PPE unless delivering direct patient care.
- If visitors are assisting in direct patient care (e.g. washing, bed making, and turning), they need to wear PPE when undertaking these activities. PPE i.e. gloves and/or gowns, is to be removed and hand hygiene performed when the activity is complete and before leaving the patients room.
- Visitors should be advised not to visit other patients, wards and departments.

## **VII. SURGICAL/INVASIVE PROCEDURES**

- Prior to any planned invasive procedure, topical and systemic decolonization, and prophylactic antimicrobial therapy, as appropriate should be undertaken to minimize the risk of infection.
- Decolonization attempts should not exceed two courses.
- If it is impossible to clear a patient of MRSA prior to the admission for surgery: if they have already had multiple decolonization attempts previously, or if they have other factors which make successful decolonization therapy unlikely, the following should be commenced 48 hours pre-operatively in order to reduce the level of MRSA at the time of the procedure:
  - bathe/ shower the patient with an antiseptic detergent, applied direct to the skin as a wash, and rinsed off; this should be continued till patient is discharged;
  - cover affected lesions with an impermeable dressing;
  - clean the area adjacent to the lesion with 4% chlorhexidine;
  - apply mupirocin to the nose before the operation if the patient is a nasal carrier;
  - give prophylactic antibiotic cover for surgical procedures in colonized or infected patients, following discussion with a medical Microbiologist according to hospital policy.
- Prior to any surgery, theatre should be informed of any MRSA case.
- MRSA patient should be placed at the end of a procedure list. Emergency cases are exempted.
- Theatre surfaces in close contact or near the patient, such as the operating table , trolley, should be decontaminated with a detergent solution followed by disinfection before being used for the next patient.
- In case the operating theatre required, enough time should be allowed for thorough decontamination of theatre with a detergent solution followed by disinfection before being used for the next patient.
- The next patient should be brought at least 15 minutes of removal of the MRSA patient from the operating theatre since with effective theatre ventilation systems and an adequate number of air exchanges, a safe environment can be created within 15 min. Only airflows in ultra-clean theatres make a minimum time unnecessary.
- MRSA positive patients may be recovered in recovery units, provided that patients segregated as far as possible within the recovery area, nursed by staff dedicated to their care, employing contact precautions, and equipment in contact with the patient is disinfected after use.

### **VIII. DISCHARGED PATIENTS.**

- MRSA patients should be discharged promptly from hospital when their clinical condition allows according to the opinion of treating clinician.
- Colonization or infection with MRSA is **not a contra-indication** to the transfer of a patient to a rehabilitation or convalescent home.
- It is essential that patient, their relatives and carers should be fully briefed on MRSA, informed that there is no risk of infection to healthy relatives and contacts outside the hospitals, and that normal social interaction should not be compromised using Information sheet for MRSA infected patients on discharge (Appendix 5)
- Information of decolonization protocol -if needed- to be followed at home should be addressed using Information sheet for MRSA infected patients on discharge (Appendix 5)
- Patients should be advised that if they are hospitalized or require community based health services in the future, they should inform the staff that they have been identified as carriers of MRSA in the past to ensure that they are managed appropriately.
- There is no indication for routine discharge screening.

### **IX. DECEASED PATIENTS**

- The infection control precautions for handling deceased patients are the same as those used in life.
- Any lesions should be covered with impermeable dressings.
- Plastic body bags should be employed as part of general practice in accordance with precautions for infected patients.
- There is negligible risk to mortuary staff or undertakers provided that standard infection control precautions are employed.

## MANAGEMENT OF INFECTED OR COLONIZED STAFF

- Colonised staff who are put off work should be considered medically suspended and not on sick or annual leave. This will be based on individual circumstances and work area.
- Decolonization protocol is the same as patient (see page 9).
- **In principle**, it is recommended that only staff members with colonized or infected hand lesions should be off work while receiving courses of clearance therapy, but this decision should be based on local risk assessments. To aid staffing re-resources, it may be possible to re-allocate staff carriers temporarily to low-risk tasks or units.
- It is recommended that a minimum of three screens at weekly intervals (while not receiving antimicrobial therapy) should be performed before a previously positive staff member can be considered to be clear of MRSA.
- Systemic treatment for chronic MRSA colonization will be agreed on individual basis by the consultant microbiologist.
- Staff with persistent skin carriage at sites should be considered for referral for appropriate specialist management (e.g. ear, nose and throat; dermatology) who should arrange follow-up screening according to local protocols.
- Local policies should be developed to guide post clearance sampling of staff (appendix 7).
- Due note should be taken of the individual's risk of transmission to patients when agreeing their continuation or return to work. For example, a staff member colonized with MRSA working in an ICU or neonatal unit represents a greater potential risk to patients than a staff member with MRSA working in an outpatients department.

## **MRSA OUTBREAK**

### **Definition.**

The common definition of an MRSA outbreak is:

- 1) Two or more healthcare acquired cases which are epidemiologically associated by person, time, or place.
- 2) A substantial increase in number of cases in a facility with endemic MRSA. Each facility must decide the criteria to define an outbreak. For example, one MRSA case in a high risk area such as a burn unit might constitute an outbreak.

### **Management**

#### **A.     Culturing**

1.     Patients:

Cultures of nares and invasive sites should be performed to all patients in the unit.

2.     HCW:

Specimens should be taken from the nares plus any broken-skin site. Multiple specimens may be required in order to identify the organism, but should be taken only if the evidence implicating the caregiver as the transmitter is strong. More definitive measures, such as removal of the HCW from care of high risk patients, may be considered.

#### **B.     Isolation**

- During an outbreak and when extra control measures are required, all MRSA positive patients should be physically separated with no staff crossover to MRSA negative patients. A private room is preferred for MRSA infected or colonized patients. The MRSA colonized patient can be placed with another colonized patient (cohort). If cohorting is not possible, the MRSA colonized patient can be placed with a non-colonized patient. The MRSA colonized person should not be placed in a room with a person at high risk for infection (i.e., a resident with a tracheostomy, a gastrostomy, central line, urinary catheter, open wound or immunocompromised).
- Immediate review of infection control procedures (e.g. handwashing and contact precautions) to all staff is necessary.
- Careful surveillance for additional infected or colonized patients should be undertaken.

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is effective decontamination of hands before and after every patient contact.*

- To the maximal extent possible, staff assigned to the isolation should work with isolated patients only.
- When crossover is unavoidable, hands should be THOROUGHLY washed before a crossover. Care should be given to the non-isolated patients first, on a given shift if possible.
- The cohort member can be permitted to ambulate in other sections of the facility and socialize with other patients if the patient does not have MRSA pneumonia or heavy respiratory colonization, provided involved sites can be well covered, and the patient understands and practices basic hygiene. Ambulation may be limited to the cohort area for patients with poor impulse control.
- A patient with MRSA pneumonia may be transported to ancillary departments for special procedures if precautions are taken to contain respiratory secretions.
- Three consecutive negative cultures at weekly interval obtained 48 hours after completion of antibiotics are grounds for release from the cohort.

### **C. Decolonization**

Decolonization protocol is the same as in individual case management.(refer to appendix 2).

### **D. Epidemiologic Investigation**

In an MRSA outbreak, epidemiologic investigation should include the following data:

- Age, sex, and race.
- Patient's location in the hospital (before and after isolation).
- Date of admission and recent previous admissions.
- Which HCW had direct contact with patient.
- Body site of infection or colonization.
- Presence of invasive sites/foreign bodies, and history of invasive or other special procedures.
- Diagnosis especially conditions with negative impact on patient's immunocompetence.
- Treatments given, especially antibiotics.

### **E. Admissions/Discharge**

- During an MRSA outbreak, there is usually no reason to close the ward to new admissions. Ward closure may be necessary on the basis of risk assessment and subject to the

discussion between the Infection Control team , the relevant Clinicians, Microbiologist and Hospital director.

- Factors influencing consideration of ward closure to admissions include:
  - risk status of patients to be admitted, e.g. elective orthopaedics, coronary artery bypass surgery;
  - number of cases;
  - MRSA strain, e.g. virulence, resistance, etc.;
  - availability of alternative facilities;
  - staffing levels.
- Before re-opening to new admissions, effective environmental decontamination is required.
- The facility should not be prevented from discharging patients, if medically fit for discharge.

#### **F. Communication**

Facts concerning the outbreak such as the severity, the methods of transmission, prevention measures, as well as a general account of what direction the investigation is taking – should be clearly communicated to all personnel. A written report of the outbreak should be completed promptly after the investigation is over.

#### **G. Additional Considerations:**

- During an outbreak situation, the laboratory should save all isolates for possible phage/plasmid typing or molecular analysis.
- When culturing patients or staff, explain the reason for a positive culture and the process involved.

## **RECOMMENDATIONS FOR CONTROL OF VISA AND VRSA**

Despite the fact that there is relatively limited experience of VISA/GISA infections worldwide, and even smaller number of documented VRSA infections, guidelines for the management of patients infected and/or colonized with isolates of *S. aureus* with reduced susceptibility to glycopeptides have been published and are broadly based upon existing guidance for the control of vancomycin resistant enterococci (VRE) infections.

### **Control precautions**

Action to be taken on identification of a case of VISA/GISA or VRSA is the same as any MRSA patient, in addition:

- The number of healthcare workers caring for the patient should be reduced.
- Healthcare workers with chronic skin conditions, e.g. eczema or psoriasis, should not be involved in direct care of the patient;
- Use standard precautions. Gowns/disposable gowns and disposable gloves should be worn by all those entering the patient's room. Clean, non-sterile gloves and gowns are adequate. Staff should use theatre-style scrub suits in addition to protective clothing to ensure that healthcare workers do not take uniforms home to launder.
- After discharge, the room in which the patient has been cared for should be cleaned, with special attention to curtains which should be changed.

### **Screening Patients**

- Nose, axillae, perineum, skin lesions and manipulated sites of the index case and **all** other patients in the unit should be screened for carriage of VISA/GISA or VRSA;

### **Staff screening**

- Nose, axillae and perineum of healthcare workers and others with close physical contact with the case should be screened for carriage of VISA/GISA or VRSA;
- HCW who maintain contact with the patient will require weekly screening.

### **Eradication**

- Eradication of colonization/carriage of patients and healthcare workers should be attempted in the same way as MRSA decolonization.
- Colonized staff should be excluded from work until eradication of carriage is achieved.

## Appendix 3

### Protocol for the Management of Patients with MRSA in Radiology Department

These guidelines are for additional information only. They form part of Infection Control guidelines for Management of MRSA policy and must not be used separately.

#### GENERAL POINTS

- The Radiology department must ensure they are notified of infection/ colonization status of all patients.
- Patients do not stay in the department for long period of time, so there is less risk of environmental contamination.
- To protect those patient who do **not** have MRSA, it is important to maintain standards of infection control.
- It should be remembered that patients with MRSA (colonized in wounds or drainage tube sites, and those with productive coughs, flaking skin conditions (skin shedder) or incontinence) are the most likely to contaminate your examination room.
- Those with eczema or dermatitis should be discouraged from dealing with known infected patients.
- The spread of MRSA can be minimized by thorough hand washing between patients and thorough cleaning of all equipment used.

#### STANDARD PROCEDURE

- Patients should be examined last on the list to enable efficient cleaning of the room.
- Before the examination, remove as much equipment as possible from the room. Cover the examination table with paper or linen sheets and shelving, worktops etc. similarly.
- Staff should cover any cuts and grazes.
- During the examination, staff that will become in contact with the patient should wear disposable gowns and gloves and should not leave the room without disposing of them in clinical waste bags and washing their hands.
- After the procedure, the patient should be returned to the ward as soon as possible.
- All contaminated disposable items should be disposed of in a clinical waste bag, including oxygen masks and tubing and suction tubing. Contaminated linen should be placed in double water-soluble bags.
- All surfaces with which the patient has had contact should be wiped with hot water and detergent using a disposable cloth, followed by disinfection solution eg. alcohol.
- If the patient is a 'heavy shedder' or sputum positive and actively coughing, the floor area should be washed with hot soapy water and detergent. Use the bucket and mop for infected cases. After use, place mop head in a bag, ready for collection.
- Infectious labels do **not** need to be used on specimens from MRSA positive patients. When returning equipment to CSSD, please items in water-soluble bag or container.

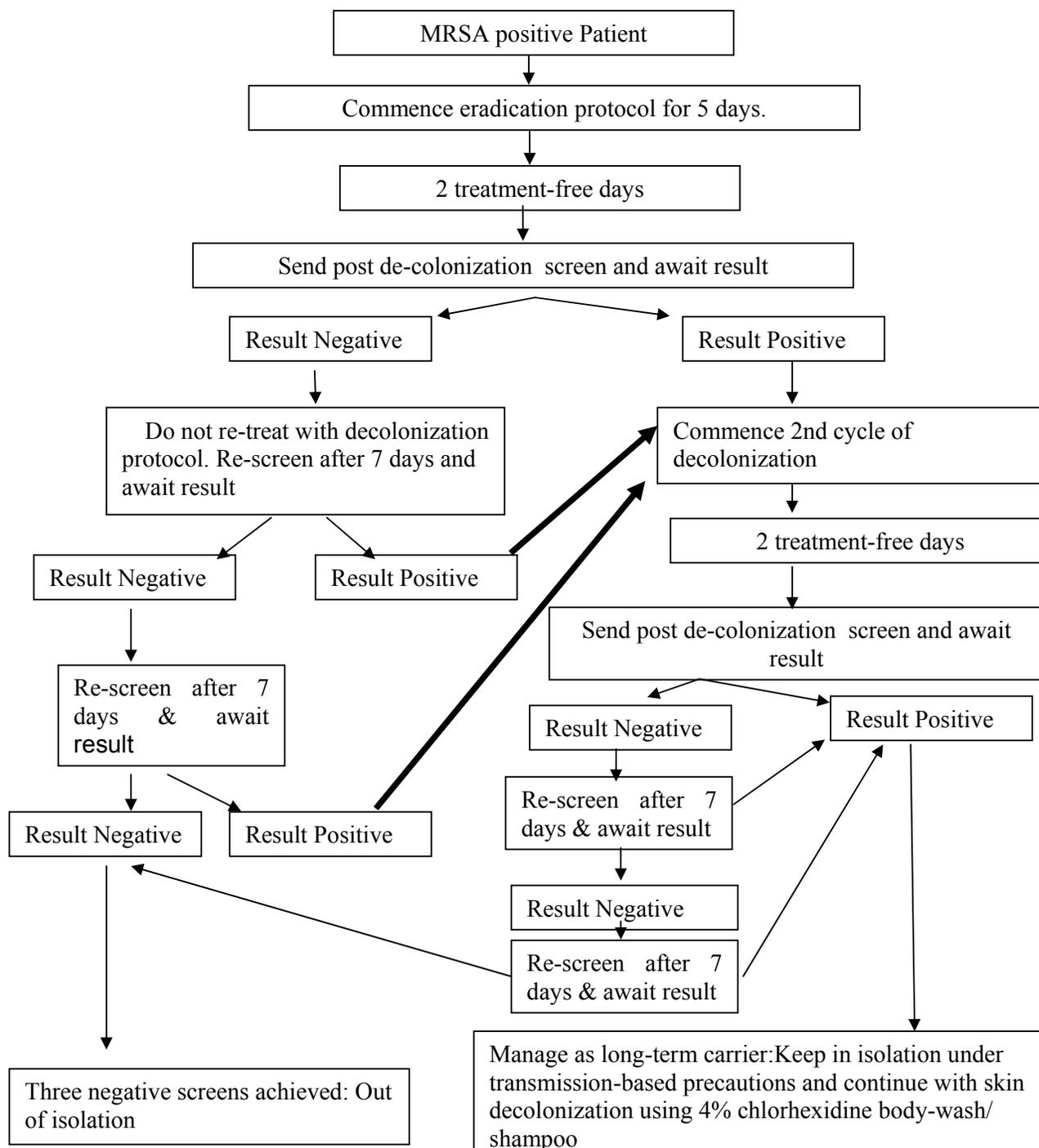
*The single most important way to prevent the spread of MRSA is effective decontamination of hands before and after every patient contact.*

## Appendix 6

### MRSA De-colonization and Re-screening Protocol Algorithm

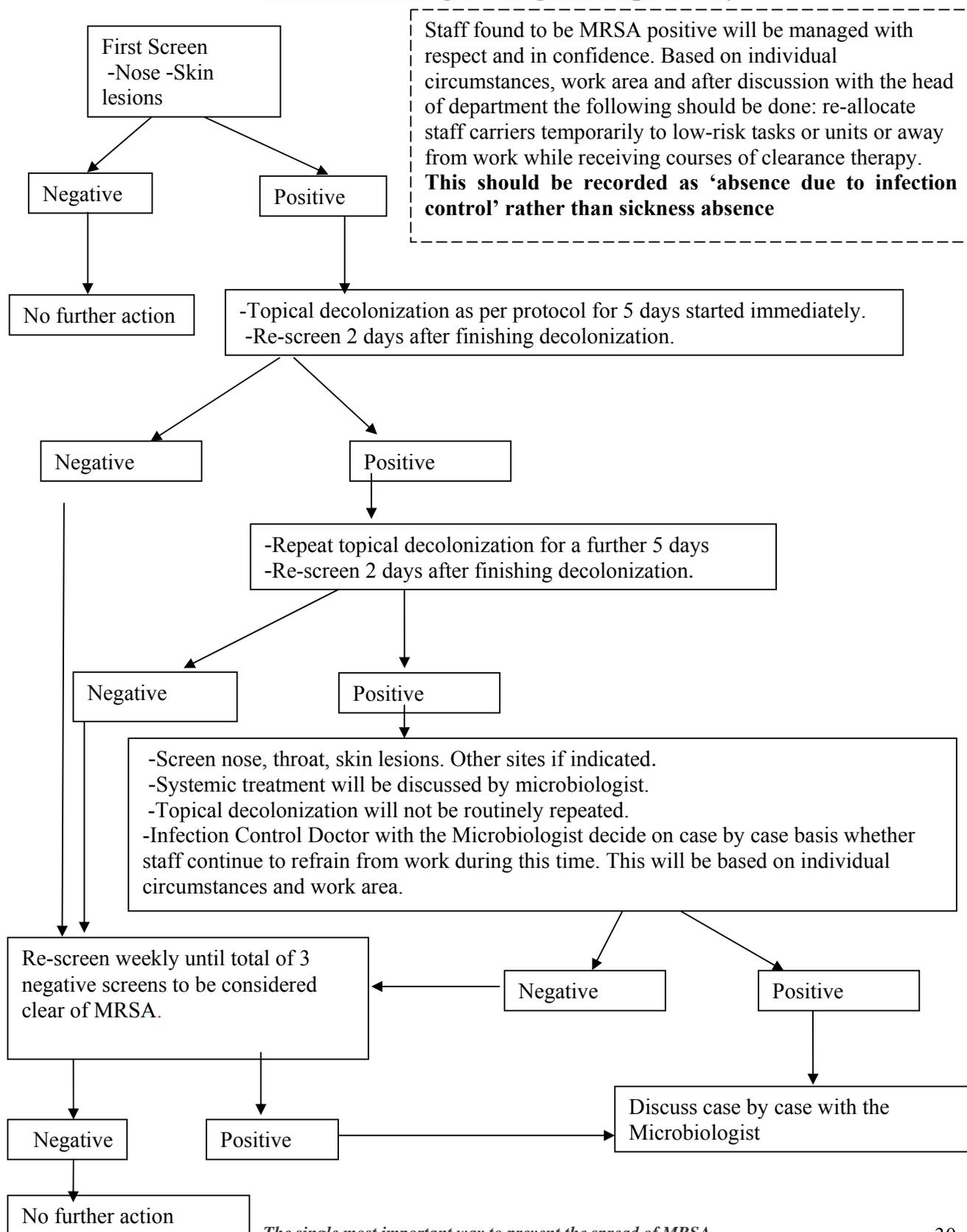
**Routine screening sites:** • Anterior nares (nose) • Perineum (or groin) • Chronic skin lesions (e.g. ulcers, pressure sores) • Other skin breaks, e.g. surgical wound, IV line site, tracheostomy site • CSU if catheterized • Respiratory secretions if ventilated

**De-colonisation protocol:** daily for 5 days • Bactroban nasal (2% mupirocin in paraffin base) to both nostrils 3 times/day • Skin decolonization using 4% chlorhexidine body-wash/shampoo



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## Appendix 7

Staff screening/management pathway

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## Appendix 2

### MRSA Decolonization Regime

Patient name:----- Patient file:-----

Screening result:----- Screening date:-----

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
<b>Date</b>								
<b>Nasal Treatment</b>	<input type="checkbox"/>							
<b>-Morning</b>	<input type="checkbox"/>							
<b>- Noon</b>	<input type="checkbox"/>							
<b>- Evening</b>	<input type="checkbox"/>							
<b>Wash hair with Chlorhexadine 4%</b>		<input type="checkbox"/>			<input type="checkbox"/>			
<b>Wash Skin with Chlorhexadine 4%</b>	<input type="checkbox"/>							
<b>Re-screen - Day 8</b>								<input type="checkbox"/>

\*Please write the date and check each item as required in appropriate box.

#### MRSA Treatment Protocol :

- Bactroban nasal ointment three times daily. (both nostril).
- 4% Chlorhexidine (or Octenisan for neonate) body wash apply undiluted as liquid soap with a disposable cloth then rinse off. Wash hair with (Hibiscrub) as undiluted shampoo at day 2 and repeat on day 5.

## Appendix 5

### Checklist of MRSA infected/colonized patient

- Was an admission screen carried out where indicated? Date: ---/---/---	
- Has the Infection Prevention & Control Team been informed? Date: ---/---/---	
- Have medical staff been notified ?	
- Have the Notes/medical file been tagged?	
- Has the patient been isolated where possible? Date: ---/---/---	
- Is cohort in place where isolation is not possible?	
- Has the patient been assessed by medical staff for any treatment needs? Date: ---/---/---	-
- Has Decolonization been commenced as necessary?	
- Have swabs for a full screen been sent to the Microbiology Laboratory? Date: ---/---/---	-
- Has the importance of hand hygiene been reinforced?	
- Are hands being decontaminated after every patient contact?	
- Are hands being decontaminated after every patient environment contact?	
- Have visitors been advised of necessary precautions/given leaflets? Date: ---/---/---	
- Are disposable gloves and gown in use and used correctly?	
- Is bed Linen changed daily?	
- Is all Linen being treated as contaminated and handled/disposed of accordingly?	
- Is disposable equipment being used wherever possible?	
- Is non-disposable equipment designated for use by MRSA patients where possible?	
- Is non disposable equipment decontaminated before use on the ward?	
- Are side rooms/infected bays cleaned at least daily with detergent and hot water?	
- Are arrangements in place for a terminal clean on discharge?	
- Are arrangements in place for curtains to be replaced on discharge?	
- Are departments to be visited by the patient being informed?	
- Is the patient being placed at the end of the list for any off ward procedures?	
- Has the patient been given discharge advise leaflet? Date: ---/---/---	

**\* Please check each item and write the date if required.**

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## Appendix-1A (English)

### MRSA INFORMATION FOR PATIENTS, RELATIVES AND CARERS

#### What is MRSA?

MRSA is short for Meticillin Resistant Staphylococcus aureus. Staphylococcus aureus is a type of germ which often found in one out of 100 healthy people in nose or skin. Only in few occasions it may lead to serious infections such as blood, joints and wound infections

#### Is MRSA a problem in the community?

MRSA is not a problem to fit healthy people, children or pregnant women. However, people staying in hospital, receiving treatment and undergoing investigations are more at risk. Also people who have long-term skin lesions (such as leg ulcers), long-term urinary catheters and for those receiving frequent courses of antibiotics.

#### How can you get MRSA?

Often it is difficult to determine how someone gets MRSA. It can be acquired both in the community as well as the hospital. It is usually spread by human contact, and can easily be transferred by hand contact. It can also be found in the environment or on equipment used by people carrying the germ if cleanliness standards are not maintained. Some people may have MRSA and be unaware of it.

Problems may arise when the MRSA gets the opportunity to enter the body to cause an infection. This can happen after surgery or if patient has a device such as a bladder catheter, a feeding or breathing tube (tracheostomy), or where there are leg ulcers or bedsores.

MRSA is more likely to colonise people with skin conditions such as eczema or psoriasis.

Infection is more likely to occur where a person is already unwell for example, when receiving chemotherapy. Extra care should always be taken when caring for the skin, so that the protective barrier is maintained.

#### Can I pass it on to others?

In the community, MRSA presents a very low risk indeed and you should proceed with all your activities as normal. You are generally in contact with other people who are fit and well, so there is no risk of passing MRSA on. If you have any wounds they should be covered with waterproof dressings to protect yourself and others.

You are encouraged to have people to visit as well as to visit others in their own homes. If you are concerned about certain individuals such as those on chemotherapy or skin conditions such as eczema, please contact the Infection Control Team for advice. You can continue to have a normal life and maintain your usual relationship with your partner. Transmission is usually through:

- Direct skin contact with one of those infected,
- touching surfaces on which bacteria spherical cluster because of a infection of other persons
- Infection is not transmitted through the air except in cases of eczema or psoriasis.

#### Can it be treated?

Yes. The type of treatment will depend on where the MRSA has been found. These may include a cream for the nose or antiseptic skin wash. Sometimes antibiotics are required.

#### What easiest way to prevent MRSA infection?

Hand washing is the easiest way to prevent infection or if hand looks clean, you can use alcohol hand rub.

#### When should I wash my hands?

- After using the toilet or after cleaning the bathroom or change the bed or wash your clothes
- Before preparing food, eating or drinking
- Each time you come into contact with other people or with surfaces or tools used by others.
- After touching any material contaminated with body fluids such as wound dressings or bedding.
- Before exercise or sports or training
- After sneezing, coughing or blowing. Before and after touching open sores and skin rashes.

#### What can I do to stop the spread?

Being discharged from home or care facility is an important step on the road to recovery.

You and your family may be worried about being at home in view of the strict measures that may have been practices while you were in hospital. These measures were aimed at controlling and reducing the spread of all germs, not just MRSA, to other vulnerable patients who are at risk because of their illness or surgery.

At home these risks are reduced but it is important that you continue to follow good basic housekeeping and personal hygiene. Keep wounds and abrasion clean and covered with a bandage until healed.

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## Appendix 4-A

### INFORMATION SHEET FOR MRSA INFECTED PATIENTS ON DISCHARGE

Patient's name: .....

Date: .....

#### Background

A bug called MRSA (Meticillin Resistant *Staphylococcus Aureus*) has been found on your -----  
----- If it stays in those places it will cause no harm but if it spreads to a wound or into your body, it may cause an infection. Likewise if it spreads to another hospital patient it may cause an infection and so we would like you to follow these instructions in order to try and reduce this happening. If a Doctor/Nurse at other health care facility or at home is treating you please show her these instructions.

#### Family, friends and relatives

The bug for which these procedures are being undertaken poses no risk to normal healthy people. Normal social contact with family, relatives and friends is of no risk and should be encouraged. No special precautions will need to be taken. If one of the people living in the same house as you is sick or is a hospital worker please tell the Nurse before you go home. He/ she will discuss this with the Infection Control Doctor to see if any special precautions need to be taken.

#### Pregnant or a nursing mother

If you are pregnant, and fit and healthy, there are no additional risks from MRSA. Breastfeeding is safe for you and your baby. However, in common with the usual advice given to breastfeeding mothers, if you notice certain symptoms, you should contact your doctor for advice. These include:

- painful breasts
- red patches or a sense of 'lumpiness' around the breasts
- flu-like symptoms, including a temperature

#### Treatment to continue when you go home, this may include:

##### – Ointment for your nostrils:

Your nurse or doctor will tell you how and when to use this. It is usually easiest to use a cotton bud to put a small amount of the ointment into each nostril three times a day for five days, and then pinch the nostrils together to spread the ointment.

Your doctor or nurse will write down below where and how you should apply this cream:

.....

##### – A special antiseptic soap to use when you have a bath or a shower:

A bath or shower should be taken at least every second day, preferably every day, and your hair should be washed twice every five days using the antiseptic foam/soap, which you are given. A clean towel should be used after each bath and shampoo and this should be kept for your use only. Put on clean clothes and change your pajamas, bed sheets and pillowcases, if possible. All the used clothes and bed linen can be safely hand or machine-washed using a normal washing program, suitable for the fabric.

.....

**If any of the above treatments cause you skin irritation, please stop using them immediately and inform your Doctor**

Treating physician-----

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## Appendix-1B (Arabic)

### دليل للتعرف على بكتريا المكورات العنقودية الذهبية المقاومة للميثيسيلين (MRSA)

#### ما المقصود بمصطلح MRSA؟

المكورات العنقودية الذهبية المقاومة للميثيسيلين هي نوع من أنواع البكتريا الكروية العنقودية التي لا يمكن علاجها بالبنسلين. ويحمل شخص واحد من كل 100 شخص بكتيريا المكورات العنقودية الذهبية المقاومة للميثيسيلين في الأنف والجلد إلا أنها لا تجعلهم مرضى. معظم حالات عدوى البكتريا الكروية العنقودية بسيطة وأحياناً قليلة تؤدي إلى حدوث حالات عدوى جسيمة مثل: الالتهاب الرئوي أو التهاب الدم والمفاصل و العدوى الجلدية العميقة.

#### هل هذه الجرثومة مشكلة في المجتمع؟

هذه الجرثومة لا تشكل خطر على الأشخاص الأصحاء والأطفال أو النساء الحوامل. ولكنها تشكل خطر على المرضى في المستشفى. أيضاً تشكل خطر على الأشخاص الذين لديهم امراض جلدية (مثل تقرحات الساق) وكذلك الذين يضعون القسطر البولية و الذين يتم علاجهم بالمضادات الحيوية لفترات طويلة.

#### كيف يصاب الشخص ببكتيريا المكورات العنقودية الذهبية المقاومة للميثيسيلين؟

غالبا يكون من الصعب تحديد كيف حصل الشخص على هذه الجرثومة. ويمكن الحصول عليه سواء في المجتمع فضلا عن المستشفى. وينتشر المرض عادة عن طريق الاتصال البشري خاصة عن طريق اليد. ويمكن أيضا أن تكون موجودة في البيئة أو في الادوات المستخدمة من قبل أشخاص يحملون الجرثومة إذا لم يتم الحفاظ على معايير النظافة. قد يكون بعض الناس لديهم هذه الجرثومة، ولا يكون على علم بذلك. المشاكل قد تنشأ عندما تتمكن هذه الجرثومة من دخول الجسم و حينها تسبب العدوى. وهذا يمكن أن يحدث بعد الجراحة أو إذا كان المريض لديه جهاز مثل قسطرة المثانة، أو أنبوب تغذية التنفس (القصبه الهوائية)، أو حيث توجد تقرحات. هذه الجرثومة هي أكثر عرضة للتواجد عند الأشخاص المصابين بأمراض جلدية مثل الاكزيما أو الصدفية. احتمال الإصابة يكون أكبر إذا كان الشخص مريضا بالفعل على سبيل المثال، أو قليل المناعة مثل الأشخاص المتلقين للعلاج الكيميائي. وينبغي دائما أن يؤخذ الحذر عند وجود الإصابة بالجلد و ابقاؤه مغطى طوال الوقت.

#### كيف تنتقل عدوى ببكتيريا المكورات العنقودية الذهبية المقاومة للميثيسيلين؟

في المجتمع لا تمثل هذه الجرثومة مخاطر ويجب المضي قدما في جميع نشاطاتك بشكل طبيعي، لذلك ليس هناك خطر نقل العدوى. إذا كان لديك جروح فينبغي تغطيتها بضمادة مضادة للماء لحماية نفسك والآخرين. تنتقل هذه البكتيريا عن طريق:

- التلامس الجلدي المباشر مع أحد الأشخاص المصابين،
  - ملامسة الأسطح التي عليها بكتيريا كروية عنقودية بسبب عدوى أحد الأشخاص الآخرين
  - لا تنتقل عدوى البكتريا الكروية العنقودية عادة عن طريق الهواء إلا في حالات الاكزيما او الصدفية.
- ولذلك يمكن للآخرين زيارتك وكذلك يمكنك زيارة آخرين في منازلهم عند اتباع قواعد النظافة العامة. الخطر يكمن في الأفراد القليلين المناعة مثل المتعاطين للعلاج الكيميائي أو الذين يعانون من الإكزيما، حينها يرجى الاتصال بفريق مكافحة العدوى للحصول على المشورة. يمكنك الاستمرار في الحصول على حياة طبيعية والحفاظ على علاقتك مع شريك حياتك المعتاد.

#### هل يمكن علاج عدوى الإصابة ببكتيريا المكورات العنقودية الذهبية المقاومة للميثيسيلين؟

نعم و يقد يتطلب العلاج كريم خاص أو صابون مطهر و احيانا يتم العلاج بالمضادات الحيوية.

#### ما أسهل طريقة لمنع انتقال عدوى بكتيريا المكورات العنقودية الذهبية والبكتريا العنقودية؟

غسل اليدين هي أسهل طريقة لمنع حدوث العدوى أو اذا لم تظهر على الأيدي أوساخ ظاهرة يمكن استخدام محلول الكحول لليدين.

#### متى ينبغي غسل اليدين؟

- بعد استخدام الحمام أو بعد تنظيف الحمام أو تغيير الفراش الخاص بك أو غسل الملابس
- قبل إعداد الطعام، الأكل أو الشراب
- في كل مرة تتلامس خلالها مع أشخاص آخرين أو مع الأسطح أو الادوات التي يستخدمها الغير.
- بعد لمس أي مادة ملوثة بسوائل الجرح مثل الضمادات أو الشرشف.
- قبل ممارسة التدريبات أو الألعاب الرياضية أو التدريب
- بعد العطس أو السعال أو النفخ أو ملامسة الأنف. وقبل و بعد لمس القروح الجلدية المفتوحة والطفوح الجلدية.

#### ما الواجب القيام به لمنع حدوث حالات عدوى بكتيريا المكورات العنقودية الذهبية المقاومة للميثيسيلين؟

- الاغتسال باستمرار والاعتناء الجيد بالبشرة وتجنب ضرر البشرة وتنظيف الجلد المصاب بالصابون والماء فوراً.
- الحفاظ على الجروح والكشط بحالة نظيفة وتغطيتها بواسطة ضمادة لحين شفاؤها. قد يحتوي الصديد الناجم عن الجروح على بكتيريا العنقودية الذهبية المقاومة للميثيسيلين.

إدارة منع العدوى –وزارة الصحة قامت بإصدار هذه النشرة.

## Appendix 4-B (Arabic)

### إرشادات للمرضى المصابين بعدوى جرثومة المكورات الذهبية العنقودية المقاومة للميتيسلين عند الخروج من المستشفى

اسم المريض: .....

التاريخ: .....

#### نبذة عن المرض:

لقد تم اكتشاف وجود المكورات العنقودية الذهبية المقاومة للميتيسلين على ..... وفي حال بقائها في هذه المناطق فإنها لن تتسبب بأي ضرر ولكن في حال انتقالها إلى أي جرح لديك أو إلى داخل جسدك فإنها قد تتسبب بحدوث التهاب لذلك نرجو منك اتباع هذه التعليمات من أجل تقليل من نسبة حدوث هذه العدوى كما نود منك أن تقدم هذه التعليمات إلى طبيبك المعالج أو الممرضة المسؤولة عن تقديم الرعاية الصحية المنزلية لك

#### الأسرة والأصدقاء والأقارب

إذا كنت مصابا بجرثومة MRSA فلن تمثل في العادة خطر لعامة الناس الأصحاء في المجتمع من ضمنهم كبار السن و النساء الحوامل و الأطفال و الرضع. لا تشكل هذه الجرثومة خطرا على الأصحاء من أفراد الأسرة أو الأصدقاء أو الأقارب ولا يمنع وجودها التواصل الاجتماعي , حيث أنها لا تشكل أي خطر ولا تتطلب أية إجراءات احترازية. ولكن في حال وجود شخص مريض يعيش معك في نفس المنزل معك فيرجى إبلاغ الممرضة المسؤولة قبل القيام بإجراءات الخروج من المستشفى.

#### ما هي الاحتياطات الخاصة بالتنظيف؟

بالرغم من عدم الحاجة لتطبيق معايير خاصة بالتنظيف فإن النظافة الجيدة في منزلك ستقلل احتمالية انتشار الجرثومة .

- حافظ على الأسطح خالية من الغبار
- قم بتنظيف السجاد وحمام الاستحمام و الدش و المغاسل و المراحيض بشكل دوري باستعمال منتجات التنظيف العادية.
- يجب غسل ملابسك و أغطية الأسرة و الشرشف كالمعتاد مستخدما مساحيق الغسيل العادية على اعلي درجات الحرارة.
- يمكنك وضع ملابسك مع غسيل بقية أفراد الأسرة كالمعتاد, يمكنك تنشيف و تجفيف و كوى الملابس كالمعتاد.

#### ماذا لو كنت حاملا أو أما مرضعة ؟

- أن كنت حامل , وبصحة جيدة فليست هناك أية أخطار إضافية من جرثومة MRSA و رضاعة الثدي آمنة لكي و لطفلك.
- إذا لاحظت أي من العوارض التالية يجب الاتصال بالطبيب: آلام في الثديين -علامات حمراء أو الإحساس بوزم حول الثديين - عوارض تشبهه الزكام من ضمنها ارتفاع درجة الحرارة

#### يحتاج المريض مواصلة العلاج عند العودة إلى المنزل إجراءات إزالة الاستيطان - الرجاء وضع علامة ( ✓ ) :

- مرهم : موضعي يستخدم داخل فتحتي الأنف , وسوف يقوم الطبيب المعالج او الممرضة بإرشادك عن كيفية استخدامه , حيث انه من الأفضل استخدام عود القطن لوضع كمية قليلة في كل من فتحتي الأنف ثلاث مرات يوميا ثم اضغط على فتحتي الأنف من الخارج لنشر المرهم داخل الأنف
- الصابون الطبي المطهر المستخدم في الاستحمام: حيث يجب غسل الجسم يوميا كما يجب غسل الشعر مرتين اسبوعيا بهذا الصابون, ويجب استخدام فوطة نظيفة تخصص لك انت فقط بعد كل حمام , ويجب استخدام ملابس نظيفة بعد كل حمام, كما يجب تغيير شرشف السرير و اكياس المخدات ايضا , ويمكن غسل جميع الملابس و البياضات المستخدمة قبل الاستحمام يدويا او بواسطة الغسالة بالطريقة المعتادة المناسبة.
- ملاحظة في حال تسببت لك أي من العلاجات السابقة بتحسس جلدي فيجب إيقافها فورا ومراجعة طبيبك المعالج.

#### • ما هي الاحتياطات الإضافية للأشخاص الخاضعين لإجراءات إزالة الاستيطان ؟

- يجب عليك أن لا تشارك الآخرين مناشفك الشخصية و يجب أن تغيرها يوميا خلال فترة علاجك
- تغيير ملابس النوم كل يوم ولبس ملابس نظيفة مغسولة خلال فترة علاجك
- تغيير شرشف الأسرة يوميا خلال فترة علاجك
- عدم استخدام شفرات أو أية أدوات حلاقة مشتركة مثل الفرشاة و الصابون مع أي شخص آخر لان هناك إمكانية جرح الجلد مما يسمح للجراثيم بالدخول إلى جسدك

الطبيب المعالج-----

إدارة منع العدوى –وزارة الصحة قامت بإصدار هذه النشرة.

The single most important way to prevent the spread of MRSA is effective decontamination of hands before and after every patient contact.

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