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EXECUTIVE SUMMARY

Title	MRSA Policy
Purpose	<p>This policy outlines the arrangements for the screening of all patients admitted to Dorset County Hospital in line with the Department of Health operational guidance.</p> <p>The policy also outlines the arrangements for the management of MRSA positive patients prior to admission and following admission.</p> <p>Surveillance is undertaken in line with national and local arrangements.</p>
Applicable to	All Trust Employees
Aim of policy	To facilitate effective arrangements for MRSA screening and the management of positive patients.
Main features	All patients identified within the Department of Health Operational Guidance (2008) will be screened for MRSA. All emergency patients will be screened for MRSA.
Policy lead	Anne Smith, Nurse Consultant IPC Dr Sanja Clements, Consultant Microbiologist.
Development Group	Infection Prevention Committee.

1 INTRODUCTION

1.1 Meticillin resistant *Staphylococcus aureus* (MRSA) is a skin bacteria that is resistant to many antibiotics. MRSA can colonise the skin (**colonisation is the presence of bacteria in the absence of infection**). MRSA colonisation in itself does not cause illness; however, colonisation in vulnerable patients may precede infection, which may be severe and life threatening. A high percentage (20% - 30%) of the population may carry *Staphylococcus aureus* (the antibiotic sensitive or MRSA) as one of their normal skin organisms.

1.2 This state of “colonisation” is not harmful to people within community settings, but underpins one important rationale for the application of standard principles of infection control practice.

1.3 The MRSA strain of *Staphylococcus aureus* is resistant to many commonly prescribed antibiotics that are used to treat infections. The infections MRSA causes are not considered more serious than those caused by Meticillin sensitive *Staphylococcus aureus*, but they can be more difficult to treat. *Staphylococcus aureus* is a virulent bacterium that can cause serious infections of the skin, soft tissues, wounds, respiratory tract, cardiac tissue and blood i.e. septicaemia.

1.4 Meticillin is an antibiotic previously used to treat infections. Meticillin is not now used as an antibiotic treatment and has been replaced by “Flucloxacillin” from the same group of antibiotics, which treats infections in a similar way. Flucloxacillin is a very effective antibiotic for many common infections, including those caused by *Staphylococcus aureus*. However there is an increasing emergence of strains of *Staphylococcus aureus* that have developed resistance to antibiotics such as Flucloxacillin (i.e. MRSA).

1.5 MRSA has developed resistance by the mutation of the penicillin binding site in the bacterial cell wall so that the antibiotic can no longer attach itself to its target, making such strains resistant to all penicillins and cephalosporin antibiotics. Unfortunately MRSA also often acquires resistance to other antibiotics making it multi-antibiotic resistant. Treating infections caused by resistant bacteria requires the use of more complex antibiotics, some of which can only be administered intravenously. It is important that the use of these antibiotics is reserved for more serious infections; resistance can emerge during therapy, especially if prolonged.

*In this document meticillin has been used in place of the established methicillin in accordance with the new international pharmacopoeia guidelines.

2 AIMS OF THE POLICY

2.1 This is an overarching trust policy on the detection and management of MRSA. The objectives of the policy are:

- To prevent the spread of MRSA within the trust;
- To protect patients from infection or colonisation with MRSA.
- To ensure patients who are confirmed to have MRSA are managed safely and appropriately and receive adequate information about their condition.

2.2 The policy will meet the requirements of the operational guidance issued by the Department of Health for screening patients for MRSA. Guidance available at:

http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_086687

3 LINKS TO OTHER TRUST POLICIES

[Standard Precautions Policy](#) applicable to the care of all patients.

[Hand Hygiene policy](#) applicable to the care of all patients.

[Isolation policy.](#)

[Blood culture policy](#)

[Uniform policy](#)

[Insertion and Management of Intravenous devices](#)

[Mandatory training policy.](#)

Cleaning Policy

4 PREVENTION AND CONTROL STRATEGIES

4.1 MRSA presents a significant problem in hospital settings whereby the opportunity for infection to occur is increased due to:

- Use of invasive devices e.g. intravenous lines, ventilation
- Use of antibiotics that alter the natural skin flora (all people are colonised with bacteria on their skin - the administration of antibiotics provides the opportunity for these to alter as the resident bacteria are eradicated by the antibiotics administered)
- Altered immunity of patients due to underlying diseases or medicines
- Surgical wounds
- Interventions within a healthcare environment.

4.2 All of these factors contribute to the vulnerability of patients during hospitalisation; prevention and control measures are essential in the hospital setting to minimise cross infection and potential outbreaks occurring.

4.3 Prevention and control strategies for hospital settings are based upon the following components:

- Management support for policy implementation;

- Application of standard infection control practices by all healthcare workers;
- Adherence to antibiotic prescribing policy;
- Staff training;
- Rigorous screening of all patients prior to/on admission to hospital with the exception of the following patient groups:
 - Day case ophthalmology;
 - Day case dental
 - Day case endoscopy (cystoscopy patients will be screened)
 - Minor dermatology procedures e.g. warts or other liquid nitrogen procedures;
 - Children/ paediatric;
 - Maternity/obstetrics apart from elective caesarean sections.
- Prompt laboratory reporting of positive MRSA isolates and identification of the risk on Patient Administration System (PAS)
- Communicating with all relevant Trust staff;
- Providing information for patients / carers of MRSA isolates;
- Appropriate placement and management of colonised / infected patients
- High standards of environmental cleanliness;
- Decontamination of patient equipment between uses;
- Good communication with community healthcare workers to inform them of patients who are known to have been colonised / infected with MRSA
- Effective management and support of outbreaks of MRSA (e.g. increased staffing / cleaning during ward closure).

4.4 Surveillance

- Undertaking surveillance of all MRSA isolates and reporting all cases of MRSA bacteraemia via the national Health Protection Agency Mandatory Surveillance database.
- Reporting all cases of MRSA bacteraemia via the DATIX system to facilitate appropriate reporting to Dorset Primary Care Trust.
- Facilitating and supporting Root Cause Analysis of MRSA bacteraemia and serious infections.
- Maintaining effective surveillance with feedback to clinical directorate utilising the data collated within the Infection Control surveillance database.

5 KEY POINTS FOR MANAGEMENT OF MRSA

5.1 Standard infection control precautions

All healthcare workers must apply the use of standard precautions for infection prevention and control during the care of all patients.

5.2 Environmental cleanliness

High standards of environmental cleanliness and equipment cleanliness must be maintained in all healthcare settings in accordance with trust decontamination guidance.

5.3 Identifying Previously Positive MRSA Patients

All patients with MRSA isolated by screening will be flagged as a risk on the Patient Administration System.

5.4 Informing patients of MRSA positive results

It is the responsibility of the healthcare worker who receives the positive MRSA result to inform the patient of the laboratory findings. For patients screened prior to admission this will be the responsibility of staff in the Pre-Admission Unit when the patient is due to attend for pre-operative assessment or the IPCT when the patient is not attending prior to the elective procedure.

This result should be discussed with the patient and a patient information leaflet should be given. Information leaflets are provided in decolonisation packs, which are available from the Infection Prevention and Control Team (IPCT) or are available for download via the intranet at:

http://194.101.238.20/Infection/information_leaflets_for_patient.htm

The Department of Health provides information leaflets in many languages. These are available at: <http://www.clean-safe-care.nhs.uk/index.php?pid=14>

The IPCT will provide support if the healthcare worker feels that they have not been able to respond adequately to the patients' queries.

NOTE: If the patient has been discharged from hospital before the result is known and it is the first MRSA isolate, the IPCT will send a letter to the patient and GP informing them of the result.

5.5 Screening patients for MRSA carriage

Screening patients is no longer based on the presence of risk factors.

Screening now forms part of the routine pre-admission or admission procedure. This meets the requirement of the Department of Health operational guidance for patients admitted to hospital. Staff must record the MRSA screen and date taken in the Adult Inpatient Record.

5.6 MRSA screening/decolonisation of elective patients

All elective patients are screened with the exception of the following groups of patients:

- Day case ophthalmology;
- Day case dental;
- Day case endoscopy (cystoscopy patients will be screened);
- Minor dermatology procedures e.g. warts or other liquid nitrogen procedures;
- Children/ paediatric;
- Maternity/obstetrics apart from elective caesarean sections.

5.7 When to screen elective patients

All elective patients will be screened at the decision to treat (DTT) during their outpatients appointment. The following algorithm outlines how the screening process occurs in the outpatient setting and the pathway for following up on both previously positive and new MRSA positive patients. An information leaflet will be provided to the patient explaining this process. (Appendix 1) and the patient's GP will be informed of newly diagnosed MRSA positive results.

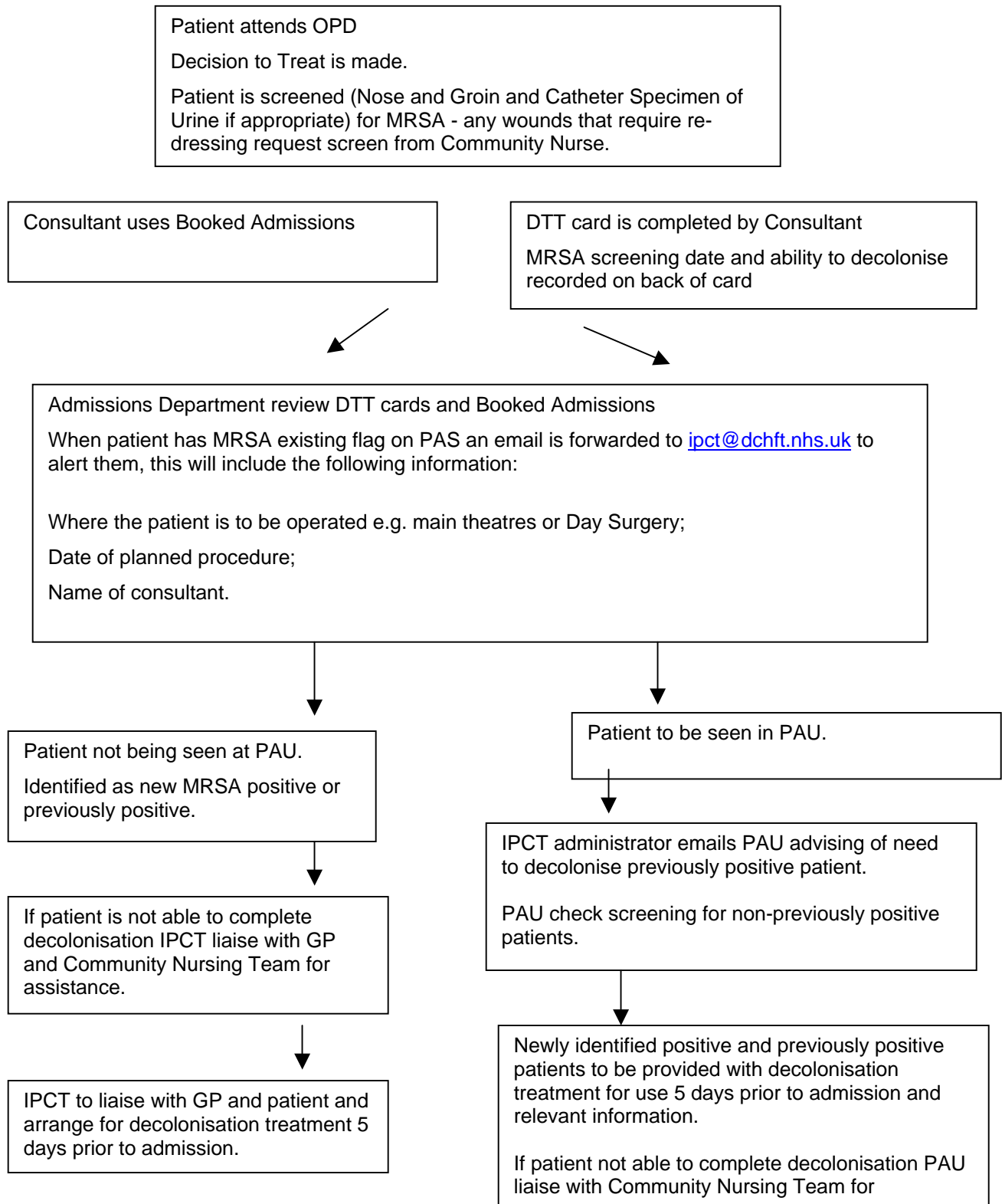
Patients who are from residential care homes must be screened within 6 weeks of admission. This can be facilitated by OPD staff communicating with IPCT staff who will organise this with the Residential Care Home.

Patients undergoing orthopaedic implant surgery or vascular grafts and spinal surgery must be screened within 6 weeks of the procedure. If a patient's screening is undertaken outside of the Dorset County hospital it is the responsibility of the clinical team to follow up screenings that may be undertaken at different laboratories.

5.8 Prescribing decolonisation treatment in Pre Admissions Unit (PAU)

A Patient Group Direction is available for PAU staff, which allows specified staff to supply decolonisation treatment to patients who have either a history of being previously MRSA positive, or are new MRSA positive patients. All interventions relating to MRSA decolonisation treatment should be recorded on the Infection Control Surveillance database to facilitate effective communication between trust staff.

MRSA SCREENING FOR ELECTIVE ADMISSIONS



5.9 Patients known to be previously MRSA positive and newly positive MRSA

Patients who are known to have been previously positive for MRSA and newly identified MRSA positive patients must be advised to complete a five day course of decolonisation prior to admission to reduce the risks of infection associated. The patient should be advised to complete the treatment 5 days prior to admission for surgery.

5.10 Taking MRSA swabs

Screening will consist of taking swabs from the nose and groin, wounds and if the patient is catheterised a catheter specimen of urine. Patients who have significant wounds that are dressed, and therefore not easily swabbed, should be given instructions for the healthcare worker who is responsible for dressing these wounds advising them to screen the wound when they are next re-dressed. Swabs and a request form should be issued to the patient to facilitate this process.

5.11 Recording results of MRSA screening

Results for MRSA positive patients will be checked at Pre-admissions clinic using the Infection Control Surveillance database. All advice given to the patient at this time should be recorded on the database.

Where patients are not attending Pre-admissions clinic prior to admission the IPCT will liaise with both the patient's GP and the patient to determine if the patient is physically able to complete decolonisation without assistance. Where assistance with treatment is required it is the responsibility of Community Nursing staff to co-ordinate/administer decolonisation.

Patients will be sent a pre assessment questionnaire to determine whether their circumstances have changed since their screening was undertaken. This will include questions regarding admissions to healthcare premises since their MRSA screening was undertaken.

5.12 Screening Emergency Admissions

All emergency patients are screened for MRSA within 24 hours of admission. This is ahead of the MRSA Screening Operational Guidance issued by the Department of Health, based upon the local epidemiology of MRSA bacteraemia data.

5.13 Renal and Haematology/Oncology patients' routine screening

Renal and haematology patients will be screened routinely for *Staphylococcus aureus* every 3 months and for MRSA when admitted to hospital. This is due to the significant risk of line infection associated with both Meticillin sensitive *Staphylococcus aureus* and MRSA.

Patients should also be screened for *Staphylococcus aureus* prior to line insertion.

Renal patients and haematology patients should receive thorough wash with Chlorhexidine 4% prior to line insertion to achieve reduction in bioburden of *staphylococci* skin organisms to reduce the risk of line infection.

Renal and Haematology/oncology patients who are known to have been previously colonised with MRSA should be screened when admitted as inpatients for overnight stays and then commence a 5 day course of decolonisation treatment. If the admission screening is negative then decolonisation can be discontinued.

5.14 Special Care Baby Unit Screening

Babies should be screened for MRSA on admission/transfer to the unit and when transferred in from other SCBU. All babies should subsequently be screened weekly. Babies will not be decolonised routinely.

5.15 Paediatric screening

Generally children will not be screened for MRSA unless they are considered at high risk of acquiring MRSA. These will include children with chronic conditions who have frequent admissions to hospital or have been transferred in from other hospitals, or from abroad or have been previously known to be positive.

Paediatric staff should undertake an assessment to determine whether MRSA screening is appropriate.

5.16 Staff Screening

Staff screening will not be undertaken unless directed by the IPCT or Occupational Health Department.

Staff must not carry out their own screening as it can be difficult to distinguish between transient carriage and prolonged carriage.

When staff screening is indicated during an outbreak it is carried out under the guidance of the Occupational Health Department.

6. SCREENING PROCEDURE

6.1 Nose

Take one swab and dampen in sterile normal saline or sterile water. Direct the swab upward to the tip of the nose (anterior nares) and gently rotate around the nostril. Repeat with the same swab in the other nostril.

6.2 Groin

Dampen a swab with sterile normal saline or sterile water and rotate over the skin in both groins.

6.3 Throat

ICU patients only. Swab the back of the throat using, if necessary, a spatula to depress the tongue and illuminate throat with a pen light.

6.4 Wounds

Surgical wounds

If dry, dampen the swab in sterile normal saline or sterile water and gently swab the suture line. Use a separate swab for drain sites. **IT IS NOT** recommended that primary wound dressings are disturbed to take routine swabs (e.g. contact screens). Surgical wounds should only be disturbed for screening if there are clinical signs of infection.

6.5 Chronic wounds

If exudate is present ensure that the swab is taken as deeply into the wound edge as possible. Even if the wound edge is large, one swab taken from the wound edge is adequate. Irrigate the wound first with a gentle stream of normal saline at body temperature. If there is no exudate moisten the swab with normal saline. Using a zigzag motion across the wound, rotating the swab between fingers, sample from the whole wound surface area, or 1cm² if the area is large. Indicate on the Microbiology form if antibiotic treatment is being administered and the clinical indicators of infection if present.

6.6 IV Sites

Dampen a swab with sterile saline or sterile water and rotate over the peripheral intravenous catheter site or entry site of a tunnelled line.

6.7 Sputum

If productive cough is present (caution with interpretation of these results as these may represent throat carriage). Discuss treatment with Consultant Microbiologist.

6.8 Urinary Catheters

Ensure use of correct sterile container and eliminate risk of cross contamination during procedure. Take sample from dedicated port using a sterile syringe.

6.9 Umbilicus in neonates

Dampen a swab with sterile normal saline or sterile water and rotate the swab over umbilicus.

NB. LABORATORY RESULTS MAY TAKE UP TO 2-3 DAYS TO REPORT, but many results will be available within 1 day.

6.10 Rapid screening

Rapid MRSA screening (PCR) has been introduced to facilitate effective decision making regarding the management/placement of patients who have either been exposed to patients who have been found to be colonised with MRSA in high risk areas, or for patients admitted for procedures where the timeframe between outpatients and admission is too short for traditional laboratory methods to obtain a result. This may also be undertaken in circumstances where there is a demand to use the limited number of isolation rooms for other infections e.g. RSV in SCBU.

These tests have limitations due to the sensitive nature of the process i.e. a false positive, whereby DNA isolated may represent non-viable MRSA bacterium (e.g. patients who have been previously positive for MRSA may still have detectable DNA from the organism). Therefore any positive sample detected during rapid screening will be processed using traditional culture methods to confirm/refute the rapid testing result.

PCR rapid testing is expensive. It is therefore important to rationalise its use, and accept the limitations of the laboratory testing.

Currently rapid testing is available Monday to Friday; samples must be received by 15.30 hours to ensure laboratory staff have sufficient time to complete the test.

ALL REQUESTS FOR RAPID SCREENING MUST BE VIA EITHER THE CONSULTANT MICROBIOLOGISTS OR IPC NURSES. PATIENTS UNDERGOING DECOLONISATION TREATMENT WITHIN THE PREVIOUS 48 HOURS MUST NOT BE SCREENED FOR MRSA.

If rapid screening is requested for contacts of a positive patient this will not be undertaken before the MRSA positive patient has been isolated.

7.0 DECOLONISATION PROTOCOL

MRSA decolonisation / suppression refers mainly to the use of topical agents (nasal ointment, body wash). Rarely systemic antibiotics may be used to clear persistent carriage (e.g. wounds). The presence of wounds and invasive devices may influence the efficacy of the decolonisation programme. Babies will not be routinely decolonised.

7.1 Decolonisation of non-elective patients and Intensive Care Unit (ITU) / High Dependency Care (HDU) patients:

ALL patients must be screened for MRSA on admission/transfer to ITU/HDU.

ALL patients admitted to ITU / HDU will commence decolonisation on admission **following** screening. On receipt of the results of their MRSA screening decolonisation will continue if positive or discontinue if negative. This will reduce the bio-burden of MRSA within these high-risk groups of patients.

7.2 Non-Elective admissions to orthopaedic wards:

ALL non-elective patients must be screened for MRSA on admission to Orthopaedic Wards.

ALL patients admitted as non-elective to orthopaedic wards will commence decolonisation on admission. On receipt of the results of their MRSA screening, decolonisation will continue if positive or discontinue if negative. This will reduce the bio-burden of MRSA within these high-risk groups of patients. Contact screening will not be undertaken in these areas unless directed by the IPCT. Patients identified as MRSA positive following screening must be placed in a single room or enhanced precautions to prevent secondary spread instigated. Their bed space must be terminally cleaned.

7.3 ALL haematology and renal patients prior to line insertion must be screened for *Staphylococcus aureus* and receive a pre-procedure body wash with 4% Chlorhexidine gluconate (hibiscrub).

7.5 All elective Caesarean Section patients should receive a body wash/shower with 4% Chlorhexidine gluconate (hibiscrub) prior to the procedure (particular attention to the groin and abdominal fold).

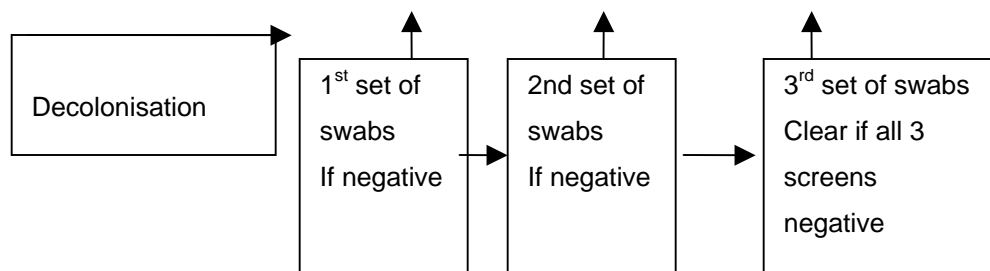
7.6 Nasal Carriage:

A systematic Cochrane review of randomised controlled trials of patients colonised with MRSA concluded that there is insufficient evidence to support the widespread use of topical or systemic antimicrobial therapy to eradicate nasal MRSA. However, the guidance of the national MRSA expert working party suggests using topical Mupirocin on a short term basis for certain categories of patients (e.g. those about to undergo major surgery).

The nasal ointment is to be applied to each nostril as described in the Patient Information Leaflet.

Following application of the nasal ointment to the inside of the nostrils it is important that the outside of the nose is massaged well. This will ensure the treatment is effective. Patients may be able to taste the nasal ointment

7.7 Throat carriage:



7.10 Decolonisation failure

Decolonisation failures may occur where protocol is not followed – seek advice from IPCT.

If any of the post treatment screening results are positive please discuss with the IPCT prior to taking any further action.

Staff should only initiate further decolonisation protocols following discussion with the IPC Nurse.

An information leaflet for patients undergoing decolonisation is provided (Appendix 1)

7.11 Patient discharged before decolonisation protocol is completed

The patient should be instructed to continue with the decolonisation protocol after discharge to complete the treatment. It is not necessary to routinely send clearance swabs for MRSA. A frequently asked question patient information leaflet regarding MRSA in the community is available from the IPCT or on the intranet at: http://194.101.238.20/Infection/MRSA_Advice.pdf

7.12 Wound and device MRSA management

All wounds must be managed in accordance with Wound Formulary Guidelines available at:

http://194.101.238.20/pharmacy/Local_Formulary/Wound_care/Wound_Care_Formulary_index.htm

Mupirocin (Bactroban) ointment must not be applied to wounds or skin surfaces in close proximity to devices or around indwelling devices e.g. PEG site, intravascular or drain sites as the product contains polyethelene glycol i.e. if use of mupirocin is recommended around PEG site mupirocin nasal ointment must be used. The ointment must not be applied to exuding wounds or lesions or dry lesions greater than 3cm in diameter.

Mupirocin must not be applied to chronic wounds. It may be effective for superficial non-exuding lesions of less than 3cm diameter. The treatment regime must not last longer than 5 days.

7.13 Surgical prophylaxis to be discussed with Consultant Microbiologist.

7.14 Interpretation of screening follow up.

Three consecutive negative MRSA screens do not necessarily mean that the patient is definitely MRSA negative. The results can be used to discontinue

contact isolation precautions but the decision to declare the patient MRSA negative or deflag them from the PAS system should be made only after discussion with the ICT.

Decolonisation failures can occur where the protocol is not followed prior to the repeat screen.

If any of the repeat post decolonisation screening results are positive please discuss with the IPCT prior to taking any further screening swabs.

For elective patients a current screen is considered to be one that has been completed prior to admission without further hospital admissions or antibiotic challenges.

8 RISK AREAS AND ADMISSIONS

8.1 In line with national MRSA guidance the Trust supports a tiered approach to the management of MRSA positive patients. The following table outlines the general principles to be applied with this approach to risk reduction:

	High risk	Medium risk	Low risk
Areas	<ul style="list-style-type: none"> • Critical Care Unit • Orthopaedic Wards • Haematology Unit • Renal Ward • General Surgical Wards • SCBU 	Medical Wards Elderly Medicine Paediatric Wards	Mental Health Units Residential Care Homes Outpatient departments Community clinics GP surgeries
Isolation requirements	Single room if positive and clearance not demonstrated.	Single room if: <ul style="list-style-type: none"> • Significant open wounds • Exfoliating skin condition • Positive sputum 	Not required.
Patient screening	Pre admission if elective or on admission for emergency admissions unless decolonisation treatment is in progress.	On admission unless decolonisation treatment in progress.	Prior to admission to hospital for planned procedure.

8.2 Where there is evidence that demand for single rooms exceeds the available capacity it may be necessary to establish a cohort facility. A cohort is a bay of patients who have the same infectious agent e.g. MRSA. The cohort bay

must only accommodate patients of the same sex. IPCT staff must be involved when a cohort facility is established.

8.3 In medium risk areas staff must take account of the proximity of other patients and ensure that all care is taken to reduce the risks of them becoming colonised/ infected. Patients with invasive devices must not be managed next to patients known to be colonised with MRSA who have not been decolonised. When it is not possible to manage patients either in a single room or a cohort a risk form must be completed.

8.4 [Contact isolation signs](#) must be placed outside the room to identify the requirements for staff and visitors entering the room.

8.5 Environmental Cleaning

MRSA is an organism that can survive in the environment, and within healthcare settings contamination of equipment can result in cross infection. It is therefore important that staff apply rigorous consistent measures to prevent environmental cross infection. This involves working as a team to ensure all staff are working together to reduce this risk. Attention should be paid to:

- Informing the patient of the rationale for control measures;
- Informing housekeeper that the room/ bed space requires special cleaning measures (designated equipment and use of hypochlorite solution) to prevent environmental opportunity for cross infection;
- Ensuring that all patient equipment is properly decontaminated following use and where possible is dedicated to the care of the MRSA positive patient;
- Advising visitors and allied healthcare professionals of the necessary precautions prior to entering the room (visitors do not need to wear gloves and aprons);
- Ensuring appropriate signage is displayed outside the room advising of control measures required.
- Ensuring that any equipment e.g. commodes, wheelchairs, beds or trolleys used during the care of the patient are appropriately cleaned following use (<http://www-local/ClinGuide/Infection-Control/0287-2-decontamination.pdf>).
- All bed spaces occupied by patients known to be colonised / infected with MRSA must be fully terminally cleaned following the patients discharge.

8.6 Crockery

There are no additional /special requirements for cleaning crockery.

8.7 Linen

Close doors when changing beds. Dispose of linen as infected linen.

8.8 Visit to specialist areas

The movement of colonised/infected patients should be kept to a minimum within the clinical area but this **must not** prevent patients receiving any treatment, investigation or rehabilitation needed.

- Wounds should be dressed with occlusive dressings.
- If a bed is used for transportation, this must be cleaned and linen changed prior to leaving the ward.
- Porters or attendant staff **need not wear protective** clothing if only transporting the patient. PPE must only be used if in direct contact with patients e.g. assisting patient movement.
- It is the responsibility of staff to inform other departments in the trust if patients are known to be colonised/ infected with MRSA.
- Specialist departments can then make arrangements to manage the risk to other patients by managing these patients at the end of the working session if possible.
- The patient should spend the minimum of time possible in the department.
- When having physical contact with the patient with MRSA, staff should wear a disposable apron and gloves.
- Equipment should be kept to a minimum.
- Surfaces which the patient comes into contact with should be wiped clean with a disposable cloth and a solution of chlorine releasing agent (Presept solution 1:1000 ppm or an alcohol impregnated wipe).

The IPC Theatre policy takes account of the management of patients within the theatre environment.

8.9 Home visits

Assessments, treatment or care of patients with known MRSA in their home should take place at the end of the working day if possible.

Standard precautions should be applied with the use of PPE when giving direct patient care, and dispose of waste in accordance with local policy.

All equipment brought out of the patients home with disposable impregnated wipes as per manufacturers instructions. Larger items of equipment should be collected and transported safely to the Community Equipment store where they can be decontaminated centrally.

Hands should be washed and dried thoroughly before and after patient care.

Use of alcohol hand rub should be considered if suitable hand wash facilities are not available.

8.10 Community Nursing Services

Colonisation with MRSA should not prevent discharge home into care of the Community Nursing Services, Social services or Residential Care Homes.

It is important to inform the relevant service as part of the discharge plan and prior to discharge so that adequate arrangements can be made for visits, equipment, collection of waste etc.

8.11 Transfer and discharge of colonised MRSA patients.

Screen according to policy of the accepting trust. Transfers should not be delayed because of screening; the accepting hospital should screen the patient on arrival if screening of newly admitted patients is part of their policy.

8.12 Ambulance transport

No special precautions are required. The risk of cross infection from a MRSA colonised patient in an ambulance is minimal. Standard infection control precautions and routine cleaning should suffice to prevent cross infection. NB Patient transfers which involve a non MRSA patient being transferred to a high risk area e.g. cardiovascular surgery, orthopaedics or neurosurgery must not knowingly be transferred with a patient colonised/infected with MRSA.

8.13 Deceased

No special precautions are required.

9 STAFF INFORMATION

The responsibility for effectively managing patients with MRSA rests with the clinical staff delivering care. It is therefore, important that staff are able to respond to the concerns that patients and their visitors express when told that MRSA has been isolated from clinical specimens. The IPCT are available to respond to complex questions related to MRSA.

However, it is much more reassuring for patients and their families if the staff caring for patients are confident in their practice and able to negotiate and discuss the rationale for placement of MRSA colonised patients and their decolonisation regimes. The DoH Guide to MRSA is included as an appendix for staff to refer to (see Appendix 2)

10 EQUALITY IMPACT ASSESSMENT

The policy objective is to screen all patients as recommended in the Operational Guidance issued by the Department of Health (2008) at Dorset County Hospital.

This strategy will identify patients who are colonised with MRSA and decolonise those colonised with MRSA thereby reducing the numbers of patients who acquire MRSA infections. Therefore this approach to universal screening for MRSA with the exclusions as identified in this policy do not unlawfully discriminate against any groups of patients attending the hospital for treatment.

The Trust accepts the DOH findings:

There are no Human Rights issues associated with the programme. Reducing the risk of patients getting MRSA is a benefit (potentially a life saving one) to individuals and society. The less MRSA infections there are the more lives will be saved. Treatment for MRSA (preventative and curative) is guided by good clinical practice with the individual's interests at its core.

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Department of Health 2008. MRSA Screening- Operational Guidance 2.

INSTRUCTIONS FOR USE OF TREATMENT KIT FOR MRSA CARRIAGE

This is a complete Treatment Pack for 5 continuous days of treatment against MRSA.

Once the treatment has commenced (Day 1), it must be continued every day as detailed below, completing the treatment at the end of Day 5. You may find it helpful to use the table overleaf.

HIBISCRUB (4% CHLORHEXIDINE GLUCONATE) CLEANSING SOLUTION, USE DAILY FOR 5 DAYS:

The solution is likely to be most effective if applied directly to your skin using a damp cloth.

Use the solution as you would either soap or shower gel. Pay particular attention to any folds of skin e.g. armpits, under the breasts and groin area.

To maximise the effectiveness of the solution further, ensure that a new disposable cloth (i.e. a 'J Cloth') is used each day, or that the cloth is laundered after each treatment. Use a clean towel to dry yourself each day and then launder.

Occasionally, some patients may experience some redness of the skin or develop a rash whilst using this product. If this should occur, then rinse yourself thoroughly with clear water and seek medical advice if it persists.

It is also advised that both your bedding and clothing are changed each day for the duration of the treatment.

HIBISCRUB (4% CHLORHEXIDINE GLUCONATE) CLEANSING SOLUTION, USE AS SHAMPOO:

Use HIBISCRUB to wash hair on days 1, 3 and 5.

Apply to wet hair and massage into scalp, rinse well with water.

Conditioner may be used if desired.

BACTROBAN (MUIPIROCIN 2%) NASAL OINTMENT, APPLY TO THE INSIDE OF BOTH NOSTRILS 3 TIMES A DAY FOR 5 DAYS:

Please read the Patient Information Leaflet included in the box with the Bactroban nasal ointment before you begin to use it.

The nasal ointment is to be applied to each nostril as described in the Patient Information Leaflet.

Following application of the nasal ointment to the inside of the nostrils it is important that the outside of the nose is massaged well. This will ensure the treatment is effective. You may be able to taste the nasal ointment.

If being treated at home, please bring any remaining Hibiscrub or Bactroban nasal ointment into hospital with you. If you require further advice or information, please contact a member of the Infection Prevention and Control Team on (01305) 253165.

If this treatment has been given to you in hospital for the eradication of mrsa carriage, please use for 5 days as per the instructions.

PATIENT LABEL
NAME:
HOSPITAL No:
Date of Birth:

		<i>DAY 1</i>	<i>DAY 2</i>	<i>DAY 3</i>	<i>DAY 4</i>	<i>DAY 5</i>
<i>DATE:</i>						
HIBISCRUB CLEANSING SOLUTION						
HIBISCRUB HAIR WASHING			X		X	
<i>BACTROBAN NASAL OINTMENT</i>	<i>MORNING</i>					
	<i>AFTERNOON</i>					
	<i>EVENING</i>					

A simple guide to MRSA



This guide explains what MRSA is, how it developed and ways in which it can cause infection.

About MRSA

Methicillin resistant *Staphylococcus aureus* is the full name for MRSA (sometimes referred to as the "superbug"). It belongs to the *Staphylococcus aureus* family of germs.

Staphylococcus aureus is a very common cause of bacterial infections such as boils, carbuncles, infected wounds, deep abscesses and bloodstream infection (or bacteraemia). It was first described in the 1880s when doctors realised it was the most common cause of infected surgical wounds.

Most strains of *S. aureus* were sensitive to penicillin when it was introduced in the 1940s. Before the development of penicillin these infections could cause serious or sometimes fatal disease. When penicillin was used to treat infections, some strains of *S. aureus* that were able to make an enzyme called penicillinase (that broke down the penicillin and protected the bacteria) became much more common. They had become resistant to the antibiotic.

By 1959 about 90-95% of *S. aureus* strains isolated from patients with clinical infections were resistant to penicillin. The bacteria causing the infection had evolved so that penicillin was no longer effective for treating the infections.

"Methicillin" was therefore developed from penicillin to treat these *S. aureus* infections. It was made to counteract the breakdown of the antibiotic by the enzyme (penicillinase), ensuring that the penicillin-resistant *S. aureus* would still be treatable by the new drug. Within a year of the introduction of methicillin, the first MRSA was reported in England. MRSA therefore has adapted so that the target normally attacked by penicillin or methicillin has become resistant.

MRSA was relatively uncommon through the 1960s and 1970s. A few more appeared in the 1980s, but the problem exploded in the mid-1990s when particular 'epidemic' strains of MRSA became established in hospitals throughout the UK. These strains are easily transmissible (passing between and colonising both patients and hospital staff easily) and have the capacity to cause serious disease. These strains now represent over 40% of the *S. aureus* causing bloodstream infections in England.

The Staphylococcal family

S. aureus is just one of a family of staphylococcal bacteria. Their normal home is on human skin. The commonest non-*S. aureus* staphylococcus on human skin is *S. epidermidis*. This is generally harmless and is called part of the 'normal commensal flora' of the human body. Many *S. epidermidis* are resistant to antibiotics including methicillin and they have the same resistance mechanism (the altered target) as MRSA and therefore are referred to as MRSE.

Although present harmlessly on the skin of everyone, *S. epidermidis* can cause significant infections if it enters wounds on medical devices such as artificial hip joints or heart valves, or when staff use intravenous catheters to access the bloodstream. This is especially so for severely ill patients such as those in intensive care units or those undergoing cancer chemotherapy.

What does MRSA cause in patients?

Staphylococcus aureus (including those that are MRSA) causes a wide range of infections from asymptomatic colonisation (where the MRSA is doing no damage but is still capable of causing clinical infections) to fatal septicaemia (the most severe form of blood stream infection).

What do we mean by colonisation?

About 30% of the general population are colonised by *S.aureus*. In hospitals the percentage is higher because of more likely contact with infected cases. *S.aureus* carriage is more likely to be MRSA in hospital populations (patients and staff) than in the community. This is because antibiotic-resistant bacteria are selected out by the use of antibiotics to treat a range of infections in hospital.

Carriage sites are most commonly the nose and the skin, especially folds such as axilla (armpit) or groin. A carrier can be a source of infection for themselves (e.g. they can infect themselves if they have a wound).

In high risk situations (e.g. patients for major surgery like a hip replacement or heart surgery) if pre-screening shows MRSA carriage, decontamination with skin and nose treatment is recommended before they are operated on.

Different types of infections

There is no specific 'MRSA disease' like with tuberculosis or typhoid. *S.aureus* infects a range of tissues and body systems (like those mentioned below) giving general often ambiguous symptoms that are common to different infections caused by other bacteria.

Wound infections

S.aureus / MRSA is the commonest cause of wound infection - either after accidental injury or surgery. This shows as a red, inflamed wound with yellow pus seeping from it. The wound may break open or fail to heal and a wound abscess could develop.

Superficial ulcers

Pressure ulcers, varicose ulcers and diabetic ulcers (all due to poor blood supply and superficial skin damage) are often sites of MRSA infection.

Intravenous line infections

MRSA may infect the entry site of an intravenous line causing local inflammation with pus from which the MRSA can enter the blood stream to cause a bacteraemia (blood stream infection).

Deep abscesses

If MRSA (or any *S.aureus*) spreads from a local site into the blood stream it can lodge at various sites in the body (e.g. lungs, kidneys, bones, liver, spleen) and cause one or more deep abscesses distant from the original site. These can be painful with high fever, a high white cell count in the blood and signs of inflammation near the infection. The patient will be very unwell and may have rigors (shivers) and low blood pressure (shock). Over a period, the body enters a catabolic state with breakdown of tissue, loss of weight and failure of essential organs. This is usually linked with an associated septicaemia.

Lung infections

MRSA / *S.aureus* is a rare cause of lung infection except in Intensive Care Units. There, the patient is on a ventilator with a tube in the trachea, bypassing the defences of the nose and throat. MRSA can gain entry to the lungs via the tube and cause pneumonia which may be fatal.

Bacteraemia / septicaemia

MRSA / *S.aureus* can enter the normally sterile blood stream either from a local site of infection (wound, ulcer, abscess) or via an intravenous catheter (placed there for their medical care). Bacteraemia describes the presence of MRSA / *S.aureus* in the blood. Septicaemia can follow and is the clinical term for a severe illness caused by the bacteria in the blood stream. The symptoms are not specific to MRSA and can be the same for other bacteria that cause septicaemia. Typically symptoms can include high fever; raised white cell count; rigors (shaking); disturbance of blood clotting with a tendency to bleed and failure of vital organs This is the kind of MRSA infection that has the highest death rate.

Further copies of this Simple Guide to MRSA can be downloaded from www.dh.gov.uk/reducingmrna

Keeping You Safe

Information about MRSA screening for patients being admitted for planned procedures

What is MRSA?

Meticillin Resistant *Staphylococcus-aureus* is a bacteria commonly referred to as MRSA. It is a type of bacteria from the more commonly found *Staphylococcus aureus* family. These bacteria survive harmlessly on the skin and in the lining of the nose and mouth of about one third of the population. However, these bacteria can cause infections if there is an opportunity for them to enter the body, e.g. through cuts or abrasions. The type of infections that *Staphylococcus aureus* can cause range from, boils, abscesses, and more serious infections if they enter the blood stream or surgical wounds.

MRSA is a type of bacteria that is resistant to many of the common antibiotics used to treat infections. A common misconception is that antibiotics are not available to treat infections. This is not true; there is a range of antibiotics that are effective for treating MRSA infections.



Colonies of *Staphylococcus aureus* magnified with electron microscope.

Why am I being offered screening for MRSA?

We are introducing screening for MRSA for all patients being admitted to Dorset County Hospital who are undergoing planned surgical procedures, in line with recommendations from the Department of Health. If a person has MRSA on their skin surface this bacteria has the opportunity to enter the wound during or after surgery. By screening people we can offer treatment before their surgery to reduce the risks of MRSA wound infections.

This national initiative is being introduced to identify people who may have MRSA on their skin or nasal surfaces. This is called colonisation of the skin or nose, this means that the bacteria are on these surfaces but are not causing any problems.

However, when people are admitted to hospital for a planned procedure we want to ensure that we reduce risks of infections to a minimum. One of the ways we can do this is to screen patients who are having planned procedures.

What does screening involve?

Screening is a pain free procedure. A moist sterile swab will be rubbed in your nasal passage, and a moist swab will be rubbed from your groin area. These swabs will then be sent to the Microbiology Laboratory for processing.

What will happen if I have MRSA?

A member of staff will inform you if your MRSA screening is positive and will initiate treatment for you to start at home before you are admitted to hospital. If we identify MRSA colonisation on your skin or nasal surfaces we can provide some simple treatment to reduce or remove the MRSA from hair, skin or nostrils. This treatment consists of an antibacterial skin washing treatment and some cream for the inner surfaces of the nose.

What measures are being taken in the hospital to reduce infections?

Bacteria can easily be transferred from the hands of healthcare workers during the care of patients. All hospital staff receive Infection Prevention & Control training. They are trained how to decontaminate their hands properly between contact with patients to reduce the risk of cross infection between patients. At Dorset County Hospital we have provided alcohol gel at every entrance to the hospital for visitors and staff to use, and at every ward entrance and bed space. Each ward has an identified "hand hygiene champion", and regular audits are undertaken to check staff wash/gel their hands.

Every ward has regular hygiene audits of the environmental cleanliness and actions are taken to rectify areas that do not meet the required standards.

If you are concerned about any aspect of hygiene we would like you to discuss with the member of staff at the time.

It is OK to ask staff if they have washed their hands?

Tell us if you are not satisfied with cleaning standards.

We also ask patients to take the following sensible precautions during their stay:

- Keep your hands and body clean. Have a supply of moist hand wipes with you for your personal use.
- Wash your hands after using the toilet or commode.
- Always wash your hands or use a hand wipe immediately before eating a meal.

- Make sure your bed area is regularly cleaned and report any unclean toilet or bathroom facilities to staff.
- Ask your visitors to use the alcohol gel prior to entering the maternity unit.
- Do not let your visitors sit on your bed.

The hospital has an Infection Prevention and Control Team. If you have any concerns please contact us: Telephone: 01305 255785 or via email: ipct@dchft.nhs.uk