

## **Infection Prevention Guidelines**

### **Control and Prevention of Methicillin Resistant Staphylococcus Aureus (MRSA) Acute and Elective Admissions**

|                |                                 |
|----------------|---------------------------------|
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#### **Summary**

**These guidelines aim to provide all clinical staff with the relevant information required to prevent, control and manage the incidence and spread of Methicillin Resistant *Staphylococcus aureus* (MRSA) for patients in hospital or when there is a plan to admit to hospital.**

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### MRSA Guidelines – principle changes February 2015

Introduction - following the publication of the DH document 'Implementation of modified admission MRSA screening guidance for NHS (2014)' we felt it pertinent to review our guidelines in line with the recommendations therein. We are also increasingly concerned by the increased level of mupirocin resistance we are seeing within the organisation, we need the prescribing and provision of suppression therapy to be of benefit to the patient with regard to their immediate and ongoing safety, and be in line with other controls around antimicrobial use.

The main adjustments include –

- Cessation of mandatory screening and issue of 'prophylactic treatment' for day case surgery
- Reduction of screening in low risk areas i.e. paediatrics and obstetrics

N.b. All patients coming in for high risk surgery or procedures, or who will be admitted to high risk areas such as ITU/ring fenced orthopaedics or are vulnerable with multiple co morbidities will continue to be fully screened and issued suppression or fully decolonised for the procedure as appropriate.

**There are no changes to emergency screening and management.**

## 1 Introduction & Scope

These guidelines aim to provide all clinical staff with the relevant information required to prevent, control and manage the incidence and spread of Methicillin Resistant *Staphylococcus aureus* (MRSA) for patients admitted to hospital.

## 2 Definitions

**Staphylococcus Aureus** – A relatively common skin bacteria (approx 30 - 40% of the population will be carriers).

**MRSA** is a strain of *Staphylococcus aureus* that is resistant to a large group of antibiotics called the beta-lactams, which include the penicillins and the cephalosporins. Between 1-5% of the population will carry this harmlessly.

**Colonisation** is the presence of micro-organisms without tissue invasion.

**Decolonisation** is the absence of the micro-organism on the host following eradication therapy

**Infection** is the presence of micro-organisms causing a host response such as elevated temperature.

**MRSA bacteraemia** - when MRSA is present in the bloodstream.

**Post Infection Review (PIR)** - is the process used to investigate the cause of an MRSA bacteraemia.

## 3 Overview

MRSA remains endemic in many UK hospitals. Specific guidelines for control and prevention are justified as MRSA can cause serious illness and result in significant additional healthcare costs. Although the majority of patients who acquire MRSA are colonized, not ill and do not require antibiotic therapy, a proportion of patients develop infection, including invasive infection, which may result in death.

**Appendix 1 - MRSA patient screening guidelines for emergency admissions to York Teaching Hospital**

**MRSA Risk Assessment Table**

|           | Risk Factors  | Areas to be screened  |
|-----------|---|---|
| High Risk | <ul style="list-style-type: none"> <li>• Resident of care facility</li> <li>• Hospital inpatient within last 12 months</li> <li>• Previously MRSA positive within the last 10 years</li> <li>• Employed in a care profession</li> <li>• Any chronic wounds</li> <li>• Long term invasive devices</li> </ul> | <ul style="list-style-type: none"> <li>• Nose</li> <li>• Throat</li> <li>• Groin <b>or</b> Axilla</li> <li>• All Wounds/Lesions</li> <li>• All sites of invasive devices</li> <li>• CSU if catheterised.</li> <li>• Any previous positive site</li> </ul> |
| Low Risk  | Does not fit above criteria   | Nose swab only  |

\*\*\*All inter hospital transfer patients **must** be fully screened by the receiving department i.e. York to Scarborough, Scarborough to York; and by in patient units such as Selby, Bridlington, White Cross Court, St Helen's, St Monica's, Archways & Malton\*\*\*

## Appendix 2 - Acute admission process

ED or admitting ward to complete risk assessment (within admission proforma) and screening (see appendix 1). Optimum within 2 hours of arrival

### Low risk

Patient may be placed in main bay await result

### Previously MRSA positive in last 10yrs

Patient to be nursed in side room

If SR not available, after consultation with Bed Managers if still unable to isolate complete an AIR's form, inform the Infection Prevention Team (IPT)

### High Risk but not previous MRSA positive

Patient may be placed in main bay  
(includes transfers from care homes and other HC providers)

### High Risk Patients in main bay

Chlorhexidine wash cloths must be used **daily** from admission until screening results known  
Please document use in nursing records

### If MRSA negative

No treatment required.

**If MRSA positive isolate if not already in side room and commence suppression therapy immediately. Screen all contacts that were in same bay**

## Appendix 3 - Treatment for MRSA colonisation

### First Line Suppression therapy -

|  |                          |  |
|--|--------------------------|--|
| 4% chlorhexidine body wash   | Daily for 5 days         | Topical wash (skin contact time - one minute)    |
| Mupiricin 2% nasal ointment (e.g. Bactroban)   | Twice daily for 5 days   | Topical nasal application – to anterior nostrils |
| To be included if positive for throat carriage - Chlorhexidine gluconate 0.2% mouth gargle consider use of sponges soaked in Chlorhexadine if patient unable to gargle | 3 times daily for 5 days | Use as mouth and throat gargle                   |
| 4% chlorhexidine body wash   | Twice in 5 days          | Hair wash  |

### Second Line when Mupirocin resistance is identified -

|  |                              |  |
|--|------------------------------|--|
| Naseptin (chlorhexidine hydrochloride 0.1%, neomycin sulfate 0.5%) | Four times a day for 10 days | Topical nasal application – to anterior nostrils |
| 4% chlorhexidine body wash   | Daily for 10 days            | Topical wash (skin contact time - one minute)    |
| 4% chlorhexidine body wash   | Four times in 10 days        | Hair wash  |

**For dermatological skin conditions or sensitivities substitute Hibiscrub washes with Triclosan e.g. Oilatum Plus or Octenidine dihydrochloride 0.3% e.g. Octenisan**

**\*For patients with peanut or soya allergies do not give Naseptin, substitute with Prontoderm nasal ointment (available from pharmacy and out of hours emergency drug cupboard)\***

## **Appendix 4 -Treatment for MRSA infection including bacteraemia**

MRSA can cause the full range of infections associated with *Staphylococcus aureus* ranging from wound infection to the less common but serious endocarditis, osteomyelitis, pneumonia and blood stream infection.

If clinical infection is suspected and the patient is MRSA positive antibiotic choice is likely to require modification from that used in negative patients – please discuss treatment with a Clinical Microbiologist

### **Prophylactic antibiotic regimes**

Please refer to the Adult Surgical Prophylaxis Formulary

[http://staffroom.ydh.yha.com/policies-and-procedures/antimicrobial-stewardship-guidelines/surgical-prophylaxis-documents/antimicrobial-stewardship-surgical-prophylaxis-formulary/at\\_download/file](http://staffroom.ydh.yha.com/policies-and-procedures/antimicrobial-stewardship-guidelines/surgical-prophylaxis-documents/antimicrobial-stewardship-surgical-prophylaxis-formulary/at_download/file)

### **Wound site management**

Where MRSA is present in a wound it needs to be assessed for the presence of clinical infection – discuss with Medical Microbiologist and document in patient's notes.

The Tissue Viability Nurse or dermatology may be contacted for advice regarding wounds infected or colonised with MRSA. The podiatrist should be contacted for advice if the wound is below the ankle.

### **Prophylactic antibiotics prior to urinary catheterisation**

Patients who are MRSA positive in their urine and who need a urinary catheter insertion or re-insertion may require prophylactic antibiotic cover such as Gentamicin – see Urinary Catheter Guidelines (link req'd)



## Appendix 5 Elective screening protocol for MRSA

### **Patients requiring full MRSA screen and decolonisation/suppression treatment if the result is positive;**

- **All** patients having orthopaedic implant surgery
- **All** patients having complex surgery or procedure that may result in prolonged hospital stay (greater than 24hrs) on an acute inpatient unit
- Any patients requiring High Dependency Post Operative Care
- All patients with significant dermatological conditions that result in heavy shedding and may compromise healing
- All patients requiring Percutaneous Endoscopic Gastrostomy (PEG)
- **\*\*Any patient admitted for day case surgery who subsequently requires transfer to an acute inpatient unit will require a full MRSA screen at point of transfer by the receiving unit\*\***
- **At the discretion of the consultant in charge of the patients' care i.e. for patients with significant risk factors**

## Appendix 6 - Paediatric MRSA screening protocol

### **Inclusion criteria for screening;**

- Any child with complex medical needs will need full MRSA screen on admission
- Any child undergoing major surgical intervention will require full pre op MRSA screen
- Insertion of central lines as planned procedures
- Children transferred from another health care facility following a significant inpatient stay (i.e. greater than 24hrs)

## Appendix 7 - Maternity screening protocol

- Patients in this group are considered low risk and do not require MRSA screening **unless**;
- They have other significant co morbidities resulting in frequent significant hospital stays
- Where there may be the likelihood of requiring post delivery High Dependency care.

(If any of the above are positive treat with the aim to decolonise)

- Mothers who are previously known to be MRSA positive but are expected to have an uncomplicated delivery should be isolated during their hospital stay but do not require MRSA treatment.

## Appendix 8

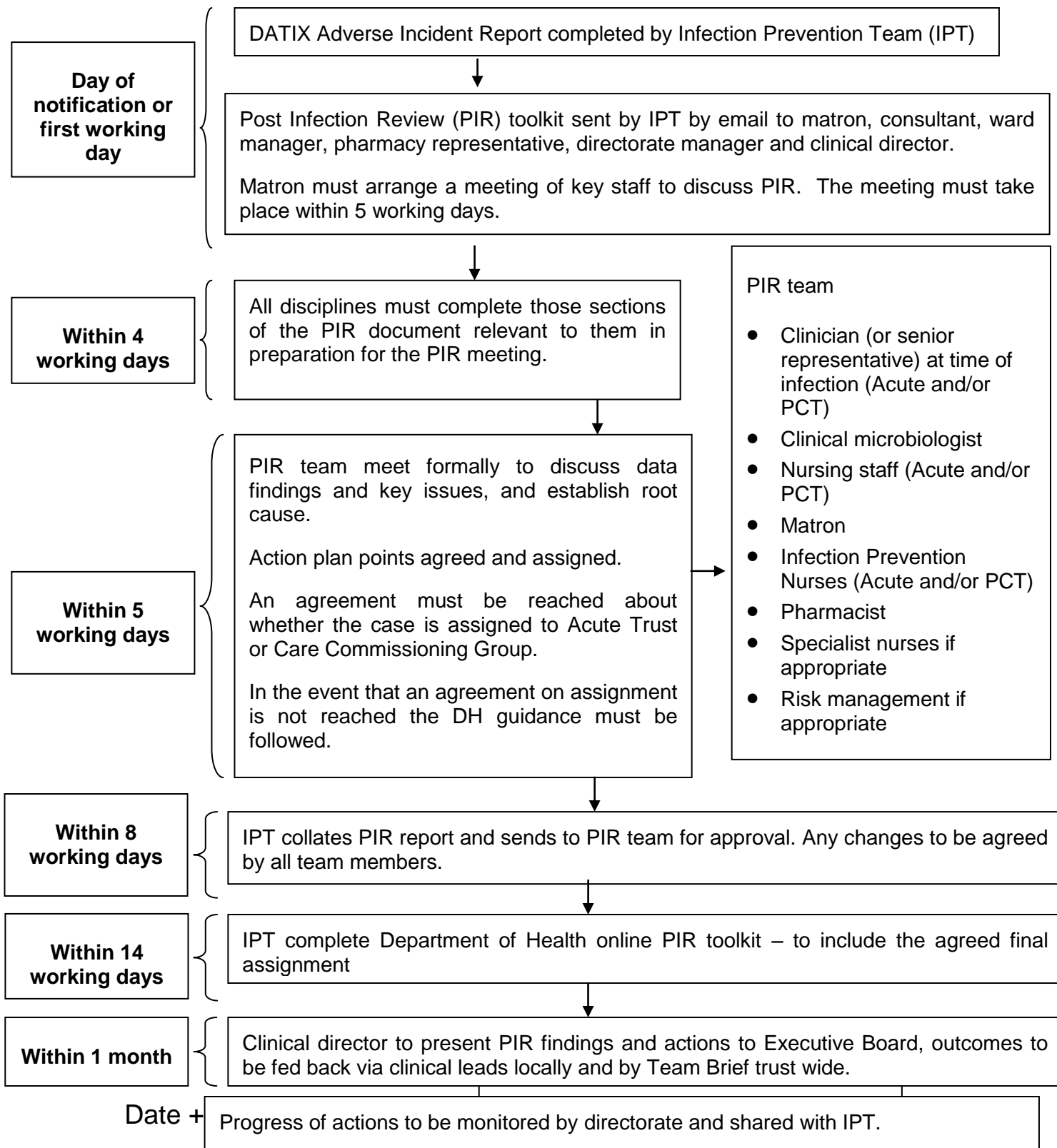
**\*\*Patients who are MRSA positive or are of unknown status must not be admitted to an elective orthopaedic ward\*\***

## Appendix 9

| <b>Enhanced MRSA screening addendum (confirm with local protocols)</b>  |   |  |
|---|---|--|
| <b>Patient group</b>  | <b>When to carry out screening</b>  | <b>Sites to be screened</b>  |
| Medical Elective Suite (MES York) admissions  | <ul style="list-style-type: none"> <li>• Prior to insertion of long term invasive devices</li> </ul>  | Nose<br>Throat<br>Perineum or groin or axilla<br>Wound swabs<br>Invasive devices sites<br>Catheter Specimen of Urine if catheterised<br>Sputum if clinically indicated<br>Umbilicus in neonates<br>Previously positive sites |
| Haematology/ Oncology patients  | <ul style="list-style-type: none"> <li>• On admission and discharge to Ward 31</li> <li>• 18 weekly where patient attends MES (York) or Haematology/ Oncology clinic for treatment</li> </ul>   |  |
| Renal Dialysis Units (including satellite units)<br><br>Refer to renal patient MRSA/MSSA management protocol for more information | <ul style="list-style-type: none"> <li>• On entering renal dialysis programme</li> <li>• 3 monthly screens</li> <li>• Transfers between units to be screened on return to usual dialysis unit (where the transfer has been for more than one session)</li> <li>• Inpatients (for more than 24 hours) to be screened on the first dialysis after discharge</li> <li>• Refer to renal patient line management protocol for patients with lines</li> </ul> |  |
| Patients in hospital for more than 30 days  | <ul style="list-style-type: none"> <li>• On day 30 of hospital inpatient stay and multiples of 30 days thereafter</li> </ul>  |  |

## Appendix 10 – Post Infection Review for MRSA bacteraemia

The Department of Health (DH) PIR guidance must be followed. The DH guidance over-rides this process where there are conflicting issues.



**The registered nurse in charge of this patient is responsible for issuing MRSA suppression therapy, and dissemination of information regarding care and management:**

**Screening and treatment:-**

Please screen the following sites before starting treatment and at rescreen (tick boxes applicable):

- nose
- throat
- groin or axilla
- invasive devices (chronic and acute)
- wounds/lesions
- CSU if catheterised
- sputum if expectorating
- Any previously positive site

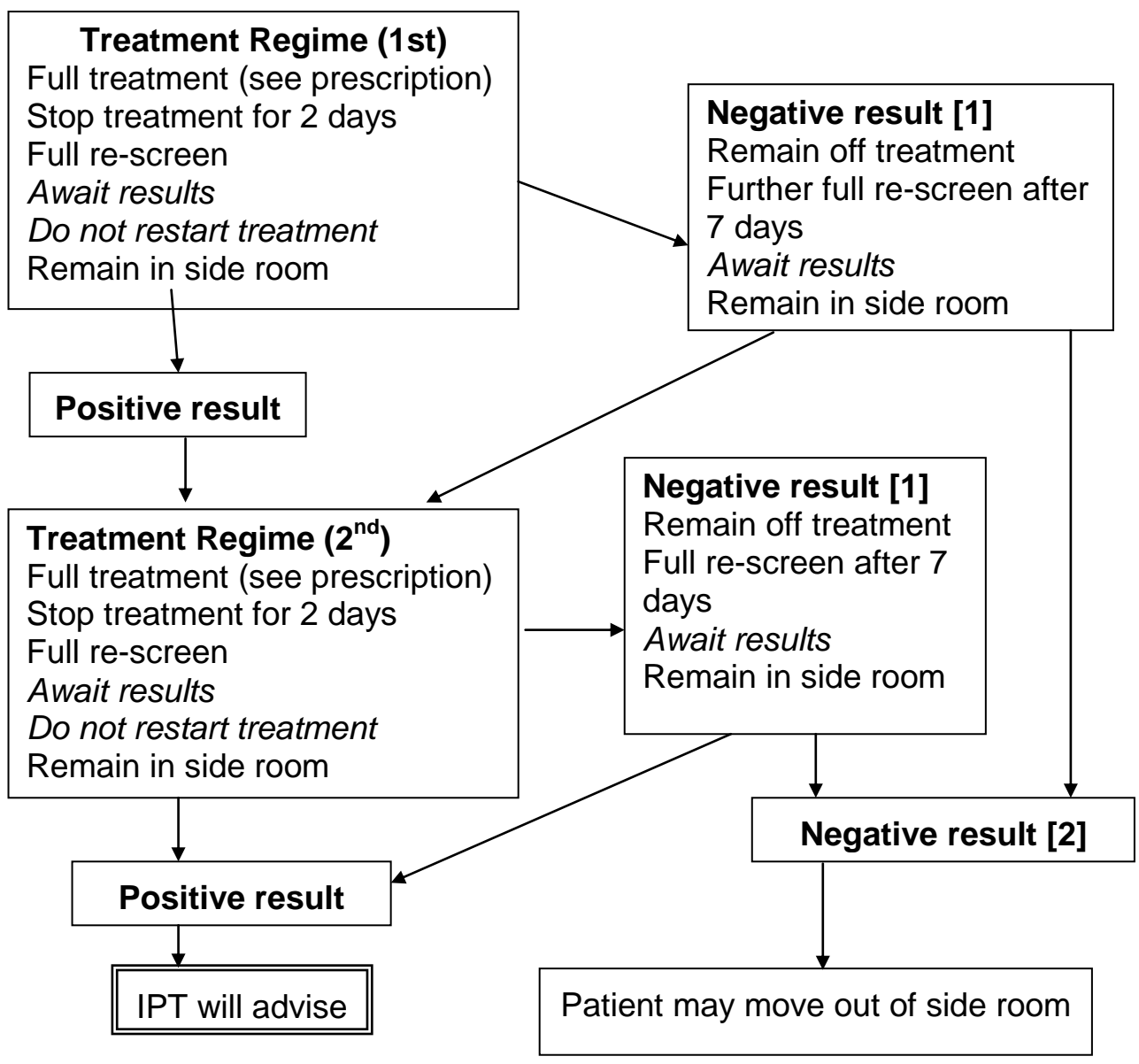
**After signing by doctor, follow suppression therapy regime as per prescription chart.**

Screen contacts in same bay:

- nose
- invasive devices
- wounds
- CSU if catheterised

**Infection prevention precautions:-**

- Ensure 'Standard Precautions' door notice is displayed. Please refer to door notice for full instructions.
- Change linen daily – bed sheets, bed clothes, towel and flannel.
- Nurse in a single room. If this is not available inform bed managers and Infection Prevention Team for advice.
- When possible allocate reusable equipment for individual patient use throughout patient episode. Clean in between use with detergent wipes.
- When transferring a patient to another area or care facility advise the receiving department of the patient's MRSA status. Patients must not be refused treatment, investigations or therapy.



**On discharge to another health care facility the nurse in charge of the patient's care must complete an Inter- Healthcare Transfer Form which will inform the receiving health care provider of the patient's MRSA status.**

For further advice contact the Infection Prevention Team on - 7725860 (York), 7712395 (Scarborough). On-call is available through switchboard.

## Appendix 11 – Standard Precautions and use of Personal Protective Equipment (PPE)

<http://staffroom.ydh.yha.com/isolationpractice1May2015.pdf>

### Hand hygiene

- Standard products for hand decontamination are disinfectant gel for visibly clean hands and washing with soap and water for unclean hands and following body fluid exposure. Hands must be cleaned;
  - Immediately before putting on gloves
  - Immediately after removing gloves and apron (e.g. following a procedure or any contact with a patient or their immediate environment)
  - Immediately before donning gloves and apron if these are replaced whilst in the room (e.g. following a procedure, between patients)
  - Immediately before leaving the room
  - Immediately after leaving the room

### Apron use

- Aprons are required when there is a likelihood of body fluid exposure
- When you are in close physical contact with the patient
- During bed making

### Glove use

- Gloves are required when there is a risk of exposure to body fluids
- For COSHH regulations - this includes preparation and use of cleaning products and for reconstitution and handling of intravenous drug preparations

## Eye protection

- Required when there is a risk of splashes from chemicals or body fluids

## Management and disposal of PPE


- Clean/new items should be stored immediately outside the patients room in order to don as required before entering an isolation room
- All PPE must be removed in the room and disposed of before performing hand hygiene. An exception to this would be face masks which must be kept on until the health care worker (HCW) is outside the room, then disposed of in an 'infected' waste bin with a lid kept outside the room (see Respiratory Precautions)
- The **only** time HCW may leave an isolation room wearing gloves and aprons is when they are taking bedpans/ commodes/vomit bowls etc **directly** to the sluice. Following disposal of contaminated goods PPE must be removed as above followed by hand hygiene




## Appendix 12 - Equipment and Environmental Control Measures









- All areas require an environmental daily clean using the microfibre system (York), mop system (Scarborough). Enhanced cleaning may be required during clusters/outbreaks of MRSA. The IPT will advise.
- Rooms require cleaning as above on discharge, transfer or relocation of patients **before** being occupied by another patient.
- Curtain changes are required following clusters or outbreaks or when there is a specific medical need as specified by IPT
- Separate clinical equipment must be designated for MRSA patients whenever possible. If these are not single use they must be cleaned using Clinell wipes before use on another patient.
- Linen must be sent to the laundry as infected by placing in a red hot water soluble bag inside a white outer bag with a tape to denote 'infected' linen. Take the red bag into the room dispose of linen and tie the bag - leave white bag outside the room and dispose of the red bag into it.
- Black bags are to be used for general waste disposal. For disposal of offensive or infective waste take a small bag into the room, dispose of waste tie the top and take straight to the sluice to dispose of in a larger container

## Appendix 13 – Standard and Contact Precautions door notice



York Teaching Hospital  NHS  
NHS Foundation Trust

# Standard and Contact Precautions

|   |                              |   |
|---|------------------------------|---|
|    | <b>Single Room</b>           | Door must be kept closed - any exceptions upon the agreement of the Infection Prevention Team   |
|    | <b>Visitors</b>              | Visitors please report to the nurse in charge before entering the room  |
|    | <b>Documentation</b>         | Must be kept outside room   |
|    | <b>Aprons and<br/>Gloves</b> | Must be worn if there is a risk of contamination from blood or bodily fluids  |
|  | <b>Waste</b>                 | Dispose of in room as per Waste Management Policy (via Staff Room Corporate Policy)   |
|  | <b>Linen</b>                 | Refer to Laundry Guidelines (via Infection Prevention site on Staff Room)   |
|  | <b>Hands</b>                 | Effective hand hygiene before and after contact with patient / or environment   |
|  | <b>Cleaning</b>              | With micro-fibre or disposable cloths and neutral detergent.<br>Patient equipment i.e. commodes and bedpans to be cleaned with detergent / disinfectant wipes |

## **Appendix 14 - Visits to Other Departments**

The presence of MRSA must not compromise care or patient safety. Prior arrangements need to be made by the nurse in charge of the patient with senior staff of the receiving department so that infection prevention measures can be implemented. The receiving department must adhere to standard precautions and environmental control measures.

In addition:

- Patients should spend the minimum time in the department, being sent for when the department is ready.
- All shared equipment must be cleaned after patient contact using detergent wipes
- Theatres
  - Following a case of MRSA theatres should be left empty for a minimum of 15 minutes following cleaning to allow full cycle of air change i.e. Standard Precautions.

## **Appendix 15 - Patient discharge including transfer to another hospital**

- Discharge planning/assessment must not be delayed because of MRSA.
- Inform receiving hospitals, General Practitioners and other healthcare agencies of continuing care requirements and control measures. Complete an Electronic Discharge Notification (EDN) /Discharge letter/ inter-healthcare transfer form (IHTF) – place a copy of the IHTF in the patient's notes.
- Carriage of MRSA is not a contraindication to the transfer of a patient to a nursing or convalescent home.
- Inter-hospital transfers for clinical reasons should not be prevented.

- Ambulance Transportation

Patients may be transported with others in the same ambulance without any special precautions except:

- Inter hospital transfers when the patient has been and/or is going into isolation
- When they are accompanying patients with invasive devices
- When they are accompanying patients who are immunocompromised or neutropenic.

### **Deceased Patients**

The infection control precautions for handling deceased patients are the same as those used in life. Body bags are not required.

## MONITORING COMPLIANCE WITH THE GUIDELINE

| Minimum Requirements   | Monitoring   | Responsibility for monitoring | Frequency   | Reported to                                 |
|--|--|-------------------------------|---|---|
| a. Screening compliance - minimum level of compliance expected 95% | Core Patient Database (CPD) data, laboratory database                                | Information Team              | Monthly   | Trust via Signal                            |
| b. Treatment and suppression therapy compliance                    | Spot check audits by IPT<br>Review of treatment and rescreening compliance           | IPT<br><br>IPT                | Minimum annually<br><br>Daily monitoring by IPN   | Directorate responsible where issues raised |
| c. Isolation   | IPT documentation records.<br>CPD whiteboard records.<br>IPN Clinical Support Visits | IPT with Systems and Network  | Daily review of side room use<br>Monthly review of isolation compliance for MRSA alerted patients | Directorates where issues raised            |

Compliance monitoring outcomes and audit results are fed back to Directorates, Matrons and Ward Managers via the trust Q drive data sets and are available on Signal.

MRSA bacteraemia are reported on Signal by Directorate

## 11 Trust Associated Documentation

Related Trust policies on Horizon:

YHFT Policy for the Development and Management of Policies  
CORP.RL.10

YHFT [CLIN.IC.12] Infection Prevention Hand Hygiene Policy

YHFT [CLIN.IC.6] Infection Prevention Standard Precautions  
Guidelines

YHFT [] Infection Prevention Guidelines for the Decontamination of  
Reusable Communal Equipment and the Environment

YHFT [CLIN.IC8] Infection Prevention Isolation Policy

YHFT [CLIN.IC9] Laundry Guidelines

YHFT [GL.CLIN.CLIN3] Antimicrobial Formularies

YHFT [Outbreak policy]

YHFT [Waste Management Policy]

## 12 References

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2. The EPIC 2: Updated guidelines for Preventing Healthcare Associated Infections in NHS Hospitals 2007.
3. MRSA Screening – Operational Guidance, DH. 31.12.08
4. Week Prevalence Audit of MRSA Screening - Final report prepared for the Department of Health by the NOW study team. Delivered January 2013