IP 03
Prevention and Control of MRSA, VRE and other Antibiotic Resistant Organisms

Contents

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1.0 Policy Statement (Purpose / Objectives of the policy)

Infections in patients caused by antibiotic resistant organisms (ARO), including MRSA, VRE, CPE and ESBL producing organisms (see 2.0 for definitions), are a significant concern in UK healthcare. Newly emerging infections, such as PVL associated staphylococcal infections, and new resistance patterns in established pathogens, add to this problem. A local policy is essential to ensure that healthcare workers are aware of the measures required to control and prevent the spread of such organisms within their area of responsibility and further to prevent the spread within the Trust and wider Community. This policy must be read in conjunction with the Trust policies IP01 Hand Hygiene, IP10 Isolation, IP13 Outbreak of Communicable Infection Policy, IP08 Operational Policy, IP12 Standard Precautions, IP19 Blood and Body fluid spillage, OP41 Induction and Mandatory Training, HR22 Staff Dress Code, CP43 Visiting, MP05 Antimicrobial Policy, and the most recent RWT antibiotic prescribing guidelines.

This policy sets out the training requirements, staff responsibilities, preventative strategies and management of patients in order to prevent and control the spread of antibiotic resistant organisms. Attachments provide specific protocols and guidelines for practice.

In adhering to this Policy, all applicable aspects of the Conflicts of Interest Policy must be considered and addressed. In the case of any inconsistency, the Conflicts of Interest Policy is to be considered the primary and overriding Policy.

2.0 Definitions

Antibiotic Resistant Organism (ARO) - a microorganism that is resistant to antimicrobial drugs usually used to treat infections of which the organism is the cause.

ANTT (Aseptic Non-Touch Technique) - a recognised tool for preventing HCAI by protecting key parts in a procedure to prevent transmission of bacteria to devices and wounds.

Cloud Screening – A more extensive screening regime undertaken during investigation for increased incidence or outbreak**.**

Colonisation - a long term relationship in which a micro-organism lives on (or in) a host, without any adverse reaction by the host to its presence.

CPE (Carbapenemase-producing Enterobacteriales) - are strains of Enterobacteriaceae that produce an enzyme that destroys carbapenems. They are uncommon at present but are an emerging concern. There are several enzymes produced by CPEs, including NDM, KPC, OXA-48 and VIM.

ESBL (Extended Spectrum Beta-Lactamase producing organisms) are coliforms (e.g. E. coli and Klebsiella spp.) resistant to a range of antibiotics, including all

penicillins and cephalosporins, by producing an extended-spectrum beta-lactamase enzyme.

GRE - Glycopeptide Resistant Enterococci.

Hand Hygiene - decontamination of the hands by hand washing with soap and water, or by hand disinfection using alcohol hand rub.

HCAI – Health Care Associated Infection.

ICNet – An electronic surveillance system used by Infection Prevention and microbiologists.

Infection - the outcome of an interaction between a host and a microorganism in which the host reacts in an adversely observable way. The evidence is usually a clinical infection.

MRSA – Methicillin-resistant Staphylococcus aureus.

MSSA – Methicillin- sensitive Staphylococcus aureus.

Multi-resistant *Acinetobacter* - *Acinetobacter* spp. that are resistant to any aminoglycoside (e.g., gentamicin) AND to any third-generation cephalosporin (e.g. ceftazidime).

PVL - Panton-Valentine Leukocidin (PVL) is a toxin produced by some strains of *Staph. aureus* (both MRSA and MSSA) which destroys white blood cells. Currently PVL is commonly associated with community strains of MRSA rather than hospital strains.

RCA – Root Cause Analysis a method of problem solving to identify the root cause of a problem or event frequently used in health care settings.

Standard Precautions - the precautions taken to prevent spread of infection to be used for all patients whether or not a pathogenic organism has been found; the precautions are gloves, aprons, hand hygiene, safe sharps disposal and aseptic non-touch technique.

Transmission Based precautions – A second tier of Infection control precautions where the organism can be transmitted via more than one route

VRE - Vancomycin Resistant Enterococci (more properly referred to as GRE).

3.0 Accountabilities

3.1 Chief Nurse

Infection Prevention is in the portfolio of the Chief Nurse therefore they have lead executive director responsibility and will delegate local operational responsibility to Heads of Nursing and Midwifery, Matrons and Ward Sisters and Charge Nurses.

3.2 The Director of Infection Prevention and Control (DIPC)

Directly accountable to the Chief Nurse, the DIPC works in close collaboration with the Head of Nursing Corporate Support Services, incorporating national guidance into local policy, monitoring KPIs and compliance with the Infection Prevention Annual Programme of Work and Code of Practice for HCAI action plan, reporting directly to the Trust Board.

3.3 The Infection Prevention Team (IPT)

3.3.1 Update the policy to reflect current guidance.

3.3.2 Provide education to support the implementation of the policy.

3.3.3 Alert ward and departmental staff that a patient has an ARO including an MRSA bacteraemia.

3.3.4 Co-ordinate the response to outbreaks of ARO (see Attachment 1).

3.3.5 Collate results of root cause analysis.

3.3.6 Feedback data to clinical teams (see IP 08 Operational Policy).
3.3.6 Alert GPs where their patients are identified as having an ARO

3.4 The Occupational Health and Wellbeing (OHWB) Team

3.4.1 The assessment, screening and treatment of staff who may have, or be at risk of having, an ARO or PVL associated strain of MRSA or MSSA (e.g., staff members with recurring boils or abscesses).

3.4.2 The co-ordination of contact tracing of staff during the deployment of outbreak control measures.

3.5 Matrons, Consultant Medical Staff and General Practitioners

3.5.1 Ensure that an RCA is completed on cases of MRSA and MSSA bacteraemia and other incidents identified by the IPT

3.5.2 Ensure that the results of RCAs are fed back to the local area, IPT and direct management team. (See OP10 Risk Management and Patient Safety Reporting Policy.)

3.5.3 Ensure that local area recommendations arising from RCAs are implemented in clinical practice.
3.5.4 Ensure that results are acted upon promptly to provide decolonisation treatment where necessary associated with outpatient attendances or preoperative clinics.

3.6 Senior Sisters, Senior Charge Nurses and Department Managers

3.6.1 Ensure that every patient admitted to their area of responsibility has been screened, isolated and decolonised for MRSA, if necessary, in line with this policy.

3.6.2 Ensure admission screening for MRSA and CPE is undertaken within 24 hours of admission and all appropriate sites are screened (see Attachment 3 for MRSA and Attachment 10 for CPE)

3.6.3 Ensure patients in the community are screened in line with the current priorities as agreed at the Infection Prevention and Control Group (IPCG); this is available on the Trust Intranet site.

3.6.4 Undertake RCAs in conjunction with the Matron or Consultant where relevant.

3.6.5 Ensure that staff members in their areas are aware of this policy.

3.6.6 Maintain standards of practice in their area in accordance with this policy.

3.6.7 Facilitate education on the content of this policy and related subjects e.g., Aseptic Non-Touch Technique (ANTT).

3.6.8 Report any breaches in this policy via the Trust's incident reporting system and, if necessary, directly to a member of the IPT.

3.6.9 Alert the IPT to any suspected outbreaks of ARO.

3.6.10 Prompt referral of any staff of whom they are aware who have recurrent infections, boils, abscesses or skin conditions to OHWB

3.6.11 Ensure all staff working on the ward or department complete their mandatory Infection Prevention training and Hand Hygiene competency assessment annually (OP41 Induction and Mandatory Training Policy).

3.6.12 Ensure that where patients are identified as positive for MRSA on any site that the MRSA care pathway is commenced promptly, and decolonisation regimes are followed**.**

4.0 Policy Detail

4.1 Prevention or early identification of ARO.

4.1.1 All patients with an ARO will have their front sheet on the Patient Administration System (PAS) marked with "INF" and their Clinical Web Portal record marked with "RISK". This is further explained in Attachment 2.

4.1.2 Screening for MRSA must take place in accordance with the guidelines provided in Attachment 3.

4.1.3 2% chlorhexidine gluconate in 70% alcohol (Chloraprep) is the standard skin preparation for insertion of and access to all central venous catheters, including tunnelled and non-tunnelled lines. To act properly, it must be allowed to dry for 30 seconds. If the patient has a known allergy to chlorhexidine a suitable alternative must be used, for example, iodine in

alcohol.

4.1.4 Important note – prior to the use of any chlorhexidine containing products staff must ensure that the patient has no known allergy or sensitivity to chlorhexidine.

4.1.5 2% chlorhexidine gluconate in 70% alcohol must be used to prepare the access point on a peripheral venous cannula. This must be applied using the correct cross hatch technique, not retouched following application, and allowed to dry for 30 seconds prior to inserting the access device for administering fluid or injections. If the patient has a known allergy to chlorhexidine a suitable alternative must be used, for example a sterile 70% alcohol wipe.

4.2 Action on confirmed or suspected cases of an ARO

4.2.1 Isolation of patients with an ARO where there is a risk of transmission must be considered in every case. If isolation is not possible, a risk assessment must be completed and the outcome documented in the patient's notes by the nurse looking after the patient. Guidelines on risk assessment for isolation of patients with an ARO are provided in Attachment 4. The risk assessment matrix is provided in IP10 Isolation Policy. The IPT must be contacted where it is not possible to isolate patients with ARO to identify a suitable plan to minimise the risk to this patient and other patients within the area.

4.2.2 In their own homes, MRSA carriers are of low risk to healthy family, friends, children, visitors and staff, providing that hand washing and basic hygiene measures are followed. No further preventative measures are required.

4.2.3 An MRSA colonisation will not require a resident in a care home to be isolated. Residents identified as colonised with MRSA will be offered decolonisation treatment and rescreening. For prevention of spread of AROs, strict adherence to hand hygiene, standard precautions including invasive device insertion and care, chronic wound management, and ANTT protocols must take place. The protocol for infection prevention actions for MRSA, VRE, *Acinetobacter baumanii*, ESBL producing organisms and other AROs as notified by the IPT is provided in Attachment 5.

4.2.4 Decolonisation of patients with MRSA must be recommended for all patients.

4.2.5 For MRSA screening and decolonisation protocols see Attachment 6.

4.2.6 For the procedure for application of MRSA decolonisation treatment see Attachment 7.

4.2.7 If a PVL associated *Staphylococcus aureus* is identified or suspected (see Attachment 8 for risk factors) then the protocol for infection prevention provided in Attachment 9 must be followed. This includes staff and

investigation of hospital associated cases.

4.2.8 All admissions must be risk assessed for potential carriage of CPE in line with Trust policy. If CPE is identified or suspected, then the protocol for infection prevention in Attachment 10 must be followed.

Clusters of ARO presence in patients will be investigated and managed in accordance with IP13 Outbreaks of Communicable Infection Policy.

4.2.9 The procedure for discharge or transfer of patients with an ARO is detailed in Attachment 11.

4.2.10 Staff must advise visitors in accordance with the protocol in Attachment 12.

4.3 Investigation of ARO infections and associated deaths.

4.3.1. All death certificates citing the main cause of death (1a on death certificate) as an illness caused by an ARO must be reported to the IPT as a potentially serious incident. These cases will undergo an RCA and be reportable to NHS England via STEIS.

4.3.2. All MRSA bacteraemia cases will be reported as serious incidents and be reportable to NHS England via STEIS. They will all be investigated via an RCA (this includes contaminated blood cultures that have grown MRSA).

5.0 Financial Risk Assessment

1	Does the implementation of this policy require any additional Capital resources	No
2	Does the implementation of this policy require additional revenue resources	No
3	Does the implementation of this policy require additional manpower	No
4	Does the implementation of this policy release any manpower costs through a change in practice	No
5	Are there additional staff training costs associated with implementing this policy which cannot be delivered through current training programmes or allocated training times for staff.	No
	Other comments	

6.0 Equality Impact Assessment

6.1 A risk assessment has been completed. There are no known adverse effects to any group.

7.0 Maintenance

7.1 The Infection Prevention and Control Group (IPCG) will be responsible for the agreement of this policy and recommending necessary changes and updates.

8.0 Communication and Training

8.1 Education and training in the prevention of transmission of AROs, hand hygiene and antibiotic prescribing will be provided:

- On induction to all new starters to the Trust, and
- Annually to all staff as part of the Trust mandatory training programme (see Induction and Mandatory Training Policy OP 41).

Procedure specific training aimed at staff groups operating this procedure (e.g., blood culture training, ANTT for IV line access) will be advertised by the Trust Education and Training Department.

8.2 Deputy Chief Operating Officers, Group Managers, Directorate Managers, Senior Sisters and Charge Nurses,/managers of clinical areas and Matrons will be informed of the launch and any revisions to this policy.

8.3 Compliance will be recorded as Level 1/Level 2 Infection Prevention training.

9.0 Audit Process

Criterion	Lead	Monitoring method	Frequency	Committee
MRSA Bacteraemia Cases (KPI)	Clinical Directors/ Matrons	IPT	Monthly	IPCG
MSSA Bacteraemia cases (KPI)	Clinical Directors/ Matrons	IPT	Monthly	IPCG
ARO Policy compliance	Senior Matron Infection Prevention	IPT	Monthly	IPCG
MRSA Screening compliance	Senior Matron Infection Prevention	IPT	Monthly	IPCG
Policy Audit	Senior Matron Infection Prevention	IPT	2 yearly or more frequently as required	IPCG

10.0 References - Legal, professional, or national guidelines must underpin policies and be referenced here. Where appropriate cross references must be made to other policies.

All references to appendices and attachments within the body of the document must be highlighted in blue and all hyperlinks inserted.

Antimicrobial Guidelines - The Royal Wolverhampton Hospital NHS Trust; 2022 https://viewer.microguide.global/trw/adult

Coia JE et al; 2021 Joint Healthcare Infection Society (HIS) and Infection Prevention Society (IPS) guidelines for the prevention and control of meticillin-resistant Staphylococcus aureus (MRSA) in healthcare facilities - Journal of Hospital Infection
https://doi.org10.1016/j.jhin.202109.22

Joint Healthcare Infection Society (HIS) and Infection Prevention Society (IPS) guidelines for the prevention and control of meticillin-resistant Staphylococcus aureus (MRSA) in healthcare facilities - Journal of Hospital Infection
Coia JE et al; 2006; Guidelines for the control and prevention of Meticillin-resistant *Staphylococcus aureus* (MRSA) in healthcare facilities by the Joint BSAC / HIS / ICNA Working Party on MRSA; *Journal of Hospital Infection*: Supplement 1; Volume 63.

https://www.gov.uk/guidance/enterococcus-species-and-glycopeptide-resistant-enterococci-gre

Cookson BD et al; 2006; *Working Party Guidance on the Control of Multi-Resistant Acinetobacter Outbreaks*; https://www.gov.uk/government/publications/acinetobacter-working-party-guidance-on-the-control-of-multi-resistant-acinetobacter-outbreaks/working-party-guidance-on-the-control-of-multi-resistant-acinetobacter-outbreaks

Department of Health (2014) Implementation of modified admission MRSA screening guidance for NHS. Department of Health Expert Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI)

Gould K *et a*l; 2008; Guidelines for the prophylaxis and treatment of Meticillin-Resistant *Staphylococcus aureus* [MRSA] infections in the UK; *Journal of Antimicrobial Chemotherapy*; 63: 849-861

Public Health England (2021) Framework of actions to contain Carbapenemase-producing Enterobacterales
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/923385/Framework_of_actions_to_contain_CPE.pdf
Public Health England (2013) Panton-Valentine Leucocidin (PVL): guidance data and analysis.
http://www.gov.uk/government/collections/panton-valentine-leukocidin-pvl-guidance-data-and-analysis
Assessment of risk to close contacts of patients with lower respiratory tract infection due to Panton-Valentine leukocidin-positive Staphylococcus aureus in England Version 1.3 (publishing.service.gov.uk)

IP01 Hand Hygiene Policy

IP08 Operational Policy

IP10 Isolation Policy for Infectious diseases

IP12 Standard Precautions

IP13 Outbreaks of Communicable Infection Policy

IP19 Blood and Body fluid spillage Policy

OP41 Induction and Mandatory Training Policy

HR22 Staff Dress Code Policy

Hospital Visiting Standard Operating Procedure

MP05 Antimicrobial Prescribing Policy

RWT Antimicrobial prescribing Guidelines

MRSA care Pathway MI_7080314

Part A - Document Control

<table>
<tr><td>Policy number and Policy version:

IP03
Version 9.0</td><td>Policy Title

Prevention and Control of MRSA, VRE and other Antibiotic Resistant Organisms</td><td colspan="2">Status:

Final</td><td>Author:
S Harper IPN

Director Sponsor:
D.Hickman
Director of Nursing</td></tr>
<tr><td rowspan="4">Version / Amendment History</td><td>Version</td><td>Date</td><td>Author</td><td>Reason</td></tr>
<tr><td>8.0</td><td>September 2019</td><td>IPN Manager</td><td>Review</td></tr>
<tr><td>9.0</td><td>May 2022</td><td>Sue Harper</td><td>Current version expires in September 2022 and National guidance has been revised</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="5">Intended Recipients: All Clinical Staff</td></tr>
<tr><td colspan="5">Consultation Group / Role Titles and Date: Infection Prevention Team, Microbiologist and Antimicrobial Pharmacist, Matron for Antenatal care</td></tr>
<tr><td colspan="2">Name and date of Trust level group where reviewed</td><td colspan="3">For IPCG review by June 2022
Trust Policy Group -September 2022</td></tr>
<tr><td colspan="2">Name and date of final approval committee</td><td colspan="3">Trust Management Committee – September 2022</td></tr>
<tr><td colspan="2">Date of Policy issue</td><td colspan="3">October 2022</td></tr>
<tr><td colspan="2">Review Date and Frequency (standard review frequency is 3 yearly unless otherwise indicated)</td><td colspan="3">September 2025 every 3 years and where new guidance is available</td></tr>
<tr><td colspan="5">Training and Dissemination: Trust intranet Policy site to replace existing version,Educational sessions provided for RWT</td></tr>
<tr><td colspan="5">To be read in conjunction with: IP01Hand Hygiene Policy, IP08 Operational Policy,IP10 Isolation Policy for Infectious diseases,IP12 Standard Precautions,IP13 Outbreaks of Communicable Infection Policy,IP19 Blood and Body fluid spillage Policy,OP41 Induction and Mandatory Training Policy,HR22 Staff Dress Code Policy,CP43 Visiting Policy,MPO5 Antimicrobial Prescribing Policy, RWT Antimicrobial prescribing Guidelines</td></tr>
<tr><td colspan="5">Initial Equality Impact Assessment (all policies): Completed Yes Full Equality Impact assessment (as required):Existing policy Completed Yes If you require this document in an alternative format e.g., larger print please contact Policy Administrator8904</td></tr>
</table>

Monitoring arrangements and Committee	For approval of revised content by IPCG
Document summary/key issues covered. Replacement of existing policy as that expires later in 2022.Policy focuses on management of Antimicrobial Resistant Organisms within the Trust to prevent transmission to other patients and prevention of outbreaks.	
Key words for intranet searching purposes	
High Risk Policy? **Definition:** • Contains information in the public domain that may present additional risk to the public e.g. contains detailed images of means of strangulation. • References to individually identifiable cases. • References to commercially sensitive or confidential systems. If a policy is considered to be high risk it will be the responsibility of the author and chief officer sponsor to ensure it is redacted to the requestee.	**Yes / No (delete as appropriate)** If Yes include the following sentence and relevant information in the Intended Recipients section above – In the event that this is policy is made available to the public the following information should be redacted:

Part B **Ratification Assurance Statement**

Name of document: IP03 Prevention and Control of MRSA, VRE and other Antibiotic Resistant Organisms

Name of author: Sue Harper Job Title: Senior IPN

I, Sue Harper the above named author confirm that: IP03

- The Policy presented for ratification meet all legislative, best practice and other guidance issued and known to me at the time of development of the said document.
- I am not aware of any omissions to the said document, and I will bring to the attention of the Executive Director any information which may affect the validity of the document presented as soon as this becomes known.
- The document meets the requirements as outlined in the document entitled Governance of Trust- wide Policy and Local Procedure and Guidelines(OP01).
- The document meets the requirements of the NHSLA Risk Management Standards to achieve as a minimum level 2 compliance, where applicable.
- I have undertaken appropriate and thorough consultation on this document and I have detailed the names of those individuals who responded as part of the consultation within the document. I have also fed back to responders to the consultation on the changes made to the document following consultation.
- I will send the document and signed ratification checklist to the Policy Administrator for publication at my earliest opportunity following ratification.
- I will keep this document under review and ensure that it is reviewed prior to the review date.

Signature of Author: Sue Harper

Date: 02/08/2022

Name of Person Ratifying this document (Chief Officer or Nominee):
Job Title:
Signature:

- I, the named Chief Officer (or their nominee) am responsible for the overall good governance and management of this document including its timely review and updates and confirming a new author should the current post-holder/author change.

To the person approving this document:

Please ensure this page has been completed correctly, then print, sign and email this page only to: The Policy Administrator

IMPLEMENTATION PLAN

To be completed when submitted to the appropriate committee for consideration/approval

Policy number and policy version	**Policy Title** Prevention and Control of MRSA, VRE and other Antibiotic Resistant Organisms	Version 9
Reviewing Group	IPT, Cons Microbiologist, Antimicrobial Pharmacist, and IPCG	**Date reviewed: June/July 2022**
Implementation lead: Kim Corbett Senior Matron Infection Prevention		
Implementation Issue to be considered (add additional issues where necessary)	**Action Summary**	**Action lead / s (Timescale for completion)**
Strategy; **Consider** (if appropriate) 1. Development of a pocket guide of strategy aims for staff 2. Include responsibilities of staff in relation to strategy in pocket guide.	N/A	N/A
Training; Consider 1. Mandatory training approval process 2. Completion of mandatory training form		Elements are included currently in Mandatory training packages
Development of Forms, leaflets etc; Consider 1. Any forms developed for use and retention within the clinical record **MUST** be approved by Health Records Group prior to roll out. 2. Type, quantity required, where they will be kept / accessed/stored when completed	MRSA and CPE patient Leaflets already approved and in use.	Revision of Maternity focused Ipatient information eaflet for MRSA underway – Sue Harper
Policy communication; Consider 1. Key communication messages from the policy / procedure, who to and how?	Via RWT Intranet and Comms bulletin	
Financial cost implementation Consider Business case development	N/A	N/A

Other specific Policy issues / actions as required e.g. Risks of failure to implement, gaps or barriers to implementation	Availability of Isolation facilities impedes the implementation of this policy	

Special Outbreak Measures for Outbreaks of ARO's

1.0 If an unusually high number of patients (above upper control on statistical process control chart) is identified by the microbiologists in an area within the Trust with a specific ARO, a single case of PVL associated MRSA, or an organism with an antibiotic resistance pattern previously unseen in the Trust (e.g., CPE, Vancomycin-resistant S*taphylococcus aureus etc.*), the IPT will instigate special outbreak measures. These may include the following.

- Convening of an outbreak control group.
- Increased surveillance in the area of the outbreak and additional screening of patients and the environment – dependant on the organism.
- Additional environmental cleaning - as agreed following discussion with the microbiologist.
- Recommendations on the suitability of the environment for the patient group.
- Changes in antibiotic prescribing.
- Cohort care of patients.
- Ward or Care Home closure (in conjunction with the on-call director). Refer to IP13 Outbreaks of Communicable Infection Policy
- Additional infection control practices or procedures – as agreed following discussion with the microbiologist.
- Assessment of staffing levels (including nursing, medical and hotel services staff).
- RCA on the outbreak – the lead will be agreed at the Outbreak Meeting

In the event of such an occurrence, the clinical leaders for the areas, the IP Senior Matron or Head of Nursing Corporate Support Services, the Directorate Manager, Matron and Ward Sister or Charge Nurse will be informed and the outbreak policy initiated.

Identification of a Patient with an Existing ARO

1.0 Results of patient specimens from which an ARO is isolated will be communicated to the registered nurse in charge of the ward or a nurse or doctor responsible for that patient the same day as the isolate is detected.

2.0 All patients with an ARO will have a risk alert identified on the Patient Administration System (PAS) as below. This will be applied by a member of the IPT on receipt of a positive isolate.

INF – Infection refer to case notes.

3.0 All patients with an ARO will have a risk alert identified on Clinical Web Portal as below.

RISK – Infection refer to case notes.

4.0 Patients with an ARO will have the organism and its consequences for the patient's health and well-being explained by the clinical team at the earliest opportunity, including potentially prolonged length of stay, treatment and discharge advice.

5.0 Written information on an ARO will be available for staff to use when informing patients of the presence of the ARO. This information is also suitable for visitors.

6.0 Patients with an ARO will have a letter from the IPT uploaded to Clinical Web Portal confirming the positive isolate, and the GP will be notified of the initial result.

7.0 For CPE positive isolates, further information will be added to the clinical notes section of Clinical Web Portal advising of any additional actions that need to be taken when caring for the patient either in the hospital or community setting. The Emergency Department will be notified by the IPT where new cases of CPE colonisation are identified to be included in the electronic system used by ED.

MRSA and MSSA Screening and Compliance Monitoring Guidelines

The groups of patients described in this document must be screened for MRSA prior to admission. This is part of the strategy to prevent serious MRSA infection (e.g., MRSA bacteraemia) and to reduce MRSA in the Health Economy. The process for the monitoring of compliance with MRSA screening is also provided.

It is imperative to undertake a full MRSA admission screen, including any invasive devices, breaks in the skin or sputum if a productive cough is identified.

Antibiotics and antimicrobial wound dressings may affect an MRSA screen. Screens must be taken at least 48 hours after these treatments have been completed.

1.0 All patients entered onto the PAS system as an 'admission' to Royal Wolverhampton NHS Trust

1.1 This includes patients who are admitted directly to wards, those for day surgery and for specific procedures. Patients in pre-operative clinics may be swabbed up to 18 weeks before surgery and the result considered valid unless:

- They have had hospital admissions in the time between screen and admission, or
- They have been admitted to a nursing or residential home in the time between screen and admission, or
- They have had treatment for MRSA in the time between initial screen and admission.

NB In all these circumstances an MRSA screen must be done on admission for a surgical procedure and antibiotic prophylaxis considered

1.2 For non-elective procedures and admissions, an MRSA admission screen is still required as the results may still prevent future HCAIs.

1.3 The admitting ward must ensure that a full MRSA admission screen including wounds and devices has been obtained **on admission** and confirm if the screen has been completed fully in AMU.

2.0 All patients who are in hospital for more than 30 days

2.1 All inpatients must be screened every 30 days during their inpatient stay.

2.2 A clear record of this must be kept in the current section of the notes in case the patient moves wards.

3.0 All patients in critical care units including ICCU and NNU

3.1 All patients admitted to these areas must be screened on admission and weekly thereafter.

3.2 The results must be proactively sought and acted on immediately.

4.0 All patients who have previously been colonised with MRSA

4.1 Patients who have previously been colonised with MRSA must have 3 consecutive clear screens (nose, axilla, groin, and any affected sites e.g., wound and sputum) before they can be considered to have had their MRSA suppressed.

4.2 Each screen must be approximately 1 week apart, and the patient must not be on any antibiotics for the treatment of MRSA or within 48 hours of receiving MRSA decolonisation treatment at the time of the screens.

4.3 During the admission period decolonisation treatment must be restarted after re-screening whilst awaiting the result. It can be stopped if the result is negative, and the repeat screens must be taken at precise 7-day intervals

4.4 During an inpatient stay and following successful suppression treatment (i.e., 3 clear screens) weekly nose swabs are needed for the remainder of their inpatient stay (though isolation can be stopped).

4.5 In the Health system low risk patients living in their own homes require just one rescreen following treatment

Low risk patients are patients who:

- Have no regular healthcare from Hospital, GP, or Community Services, and
- The original MRSA positive sample was a nose, axilla and groin screen only.

High risk patients require three rescreens and are patients who:

- Were previously MRSA positive,
- Have underlying medical conditions that require regular hospital admissions, for example renal patients receiving haemodialysis or oncology patients,
- Have open wounds,
- Have any devices including urinary catheter, PEG, tracheostomy etc.,
- Are a Healthcare worker, or
- Are a resident in a care home.

5.0 All women booked for childbirth at New Cross

5.1 Women attending their 20-week developmental scan will be screened for ARO colonisation including MRSA and CPE.

5.2 If the woman is MRSA positive, treatment needs to be commenced as soon as possible and three rescreens need to be completed prior to delivery.

5.3 Women for planned caesarean section must be screened subsequently for MRSA prior to their admission for delivery.

5.4 Women with a history of MRSA during pregnancy require commencement of decolonisation treatment 48 hours prior to the planned surgical procedure. This treatment must continue until the course is completed and screening obtained as per RWT policy.

5.5 Women requiring emergency caesarean section must be screened for MRSA as per hospital policy within 24 hours of admission.

5.6 Women identified as CPE positive must be isolated on admission with ensuite facilities for the duration of their inpatient stay.

6.0 Ophthalmology patients

6.1 Those that are planned as inpatient (overnight stay) for their surgery.

6.2 Day case surgery patients to be screened only if they are living in a nursing home OR if they are known to be MRSA positive in the past.

7.0 Monitoring compliance with MRSA screening

7.1 It is the responsibility of all ward Senior Sisters and Charge Nurses and department managers to ensure that all admitted patients are screened.

7.2 The IPT and divisional management team will support areas to achieve 100% compliance with MRSA screening.

8.0 MSSA screening

8.1 Quarterly screens of nose, axilla and groin and any affected sites are obtained from all patients on renal dialysis at the same time as screening for MRSA

9.0 How to Screen for MRSA and MSSA

9.1 The standard MRSA screen is nose, axilla, groin and a sample from any additional risk-areas present. Single site nasal screen must only be used when it is inappropriate to undress a patient for the axilla and groin screens.

The liquid COPAN e swab system is used for taking an MRSA screen - the Nose/Axilla/Groin screen. This system is used in both the acute and community setting and has 2 swabs: one with a pink stem for the nose and one with a white stem for the axilla and groin.

1. Using the pink swab, take nasal samples and insert the swab into the tube. DO NOT try to break off this swab.
2. Using the white swab, take the axilla and groin samples. Insert the swab into the tube.
3. REMOVE the pink swab only (nasal sample) from the tube and discard the swab. Break off the white swab at the marked breaking point.
4. Replace the cap on the tube and secure tightly. Label and send the sample to the microbiology laboratory

Please note if you are only taking a nasal swab, please use the WHITE swab.

- NEVER moisten the swab before taking a sample.
- NEVER discard the liquid transport medium.
- In the event of accidental spillage, the entire process must be repeated as there may be insufficient liquid sample for testing and this will delay the result.

All samples taken for MRSA/MSSA can be sent to microbiology on the same laboratory request.

9.2 In addition to the basic screen, other sites as detailed below, if present on a patient, must be sampled at the same time as the initial screen. All other sites must be swabbed using the single liquid swab, which replaces the standard charcoal swab. These may include one or more of the following.

- Line insertion sites (PEG, renal line, Hickman line, peripheral venous cannula, Midline and PICC lines).
- Wounds (chronic ulcers, burns, pressure ulcers, blisters, rashes, and surgical wounds).
- Catheters (CSU required rather than swab).
- Sputum sample if the patient has a productive cough.
- Any other site where there is a break in the skin or the normal physical barriers to infection.
- Technique for these swabs must be as nose swab (i.e., rotating) for non-intact skin and invasive device sites and rubbing technique for intact skin.

10.0 Documentation of Screens

All screens taken must be recorded in the relevant documentation relating to that admission such as nursing notes and medical records, including MRSA integrated care pathways.

11.0 Management of MRSA in Health Economy

- Treatment to eradicate MRSA colonisation is recommended to reduce the risk of transmission to others in community settings.
- Patients identified as MRSA positive living in their own homes may be prescribed decolonisation treatment by their General Practitioner. In their own homes, carriers are a low health risk to other family and friends. Good hand hygiene and basic infection control measures prevent transmission to others. An MRSA leaflet is available from the Trust and will be provided to all MRSA positive patients.
- A care home resident who is identified with MRSA colonisation will not require isolation.
- Care home residents will be offered decolonisation treatment.
- Decolonisation regimens are detailed in Attachment 6.
- Following a course of decolonisation, all patients must be rescreened for MRSA. If the patient is high risk of readmission to hospital or resides in a care home, 3 negative rescreens are required to confirm successful decolonisation
- If the patient requires antimicrobial therapy for their MRSA infection or other infection this must be prescribed in accordance with local antimicrobial prescribing guidelines.

- Patients who have MRSA infected wounds must keep them covered at all times. Please discuss the use of appropriate antimicrobial dressings with the Tissue Viability Team.

12.0 References

UKHSA (2021) Staphylococcus aureus: guidance, data, and analysis.

https://www.gov.uk/government/collections/staphylococcus-aureus-guidance-data-and-analysis#full-publication-update-history

The Royal Wolverhampton NHS Trust

Type of admission	Speciality/Ward	When to screen
Emergency/ Non Elective admissions	All wards	Screened on admission but wi hours
	PAU attenders staying longer than 4 hours	After 4 hours
	Endoscopy	Screened at first point of conta RWT
Elective admissions	Pre Op	Screened within 18 weeks of s
	Dermatology - surgical removal of lesions	Screened within 18 weeks of s
	Ophthalmology - all high-risk patients / high-risk surgery	Screened within 18 weeks of s
	Radiotherapy- implants	Screened at first point of conta RWT
	Cardio day care - ICD/TAVI/Angio/Pacemaker	Screened at first point of conta RWT
Regular attenders	Haematology/Oncology/ Rheumatology	Screen on admission then eve
	Renal	Screen on admission then eve
	Urology - regular cystoscopies	Screen on admission then eve
Maternity admissions	Screened at 20-week scan and prior to planned Caesarean section or following emergency procedure	Screen at 20 weeks and listin planned caesarean section
Cannock Orthopaedics		Screened within 18 weeks of s

Rescreens	Frequency
NNU and ITU	Rescreen weekly
All patients remaining as in patients	Rescreened after 30 days

The Royal Wolverhampton NHS Trust

Screening Table MRSA

WHO	NOSE	AXILLA/ GROIN	DEVICES (if insitu)	WOUNDS/BREAKS IN SKIN (if present)	SPUT (if expect

All patients admitted to the Trust on admission	√	√	√	√	√
All patients transferred from other healthcare facilities	√	√	√	√	√
Previously MRSA positive patients being treated in any speciality	√	√	√	√	√
All inpatients every 30 days	√	√	√	√	√
Eye Patients – Surgical procedures not injections (unless they fit into categories above)	√				
Dermatology patients who are having surgical procedures within a theatre environment	√	√	√	√	√
Maternity: Women at 20-week scan or when presenting if later for first appointment. Women requiring Caesarean Section Elective pre operatively on listing and Emergency within 24 hours	√	√	√	√	√

Risk Assessment for Isolation of Patients with Antibiotic Resistant Organisms

1.0 On identification of a patient who is colonised or infected with an ARO, arrangements for their transfer to a side room for the purposes of isolation must be considered. The decision whether to isolate or not must be based on an individual patient risk assessment according to:

- Side room availability,
- Patient safety,
- Patient condition, and
- Special Outbreak Measures (see Attachment 1).
-

All patients with an ARO are a high priority for isolation and must be isolated immediately unless there is a clear reason why this is contraindicated. This may involve movement of patients to another clinical area and must be fully documented in the patient's records.

In care homes, residents are not isolated but contact with susceptible residents is reduced to a minimum.

2.0 The following groups of patients present the highest risk for spread of an ARO and must be prioritised for isolation in a single room:

- Patients with an organism isolated from the respiratory tract,
- Patients with eczema or a similar exfoliating skin condition,
- Patients with wounds which are exuding large volumes of fluid (i.e., requiring multiple dressing changes in a day to control exudate),
- Patients who are incontinent of either urine or faeces if the ARO is present in the urine or the faeces respectively,
- Patients with a urinary catheter if the ARO is present in the urine
- Patients identified as at risk of PVL (e.g., recurrent boils / abscesses),
- Patients transferred from healthcare establishments outside of RWT (See Isolation policy IP10), and
- Patients with CPE, because they **must** have en-suite facilities.

3.0 Patients who may not be suitable for isolation in a single room and would require a risk assessment to be completed by the nurse looking after the patient to balance their condition against the risk of spread of infection include:

- Confused patients who present a risk to themselves if not constantly observed,
- Critically ill patients who cannot be adequately observed or for whom the move to a single room is likely to further destabilise their clinical condition,
- Patients with a history of depression, and
- Patients with a history of claustrophobia.

4.0 Patients who have an ESBL-producing organism isolated from a midstream specimen of urine (MSU) who are continent and not catheterised do not require a side room.

Infection Prevention and Control
Measures for Antibiotic Resistant Organisms

Whether or not the patient is isolated in a single room the following points must be followed

1.0 Scrupulous hand hygiene, adhering to the Five Moments of Hand Hygiene, must be undertaken: before and after patient contact, before and after contact with vulnerable sites on the patient (e.g., wounds, lines, catheters etc.), and after contact with the patient's immediate environment (e.g., bed clothes, bed curtains etc.). Please see the Trust's IP01 Hand Hygiene Policy.

2.0 Disposable aprons and gloves must be used where significant contact with the patient's skin, bodily fluids, immediate environment or vulnerable sites is anticipated (please see the Trust's IP12 Standard Precautions Policy).

3.0 Used hospital linen must be disposed of as infected linen. Please refer to IP05 Linen Policy.

4.0 High standards of ANTT must be observed when dealing with wounds, lines or devices.

5.0 High standards of environmental cleanliness must be maintained, in particular, dust control on horizontal surfaces and the cleaning of medical equipment between patients. Decontamination and "I am clean" stickers must be used as stated in HS12 Decontamination of re-usable medical devices.

6.0 In theatre environments there must be sufficient time available to enable thorough decontamination between each surgical case to minimise the risk of transfer of an ARO between patients. This includes those known and those not known to have an antibiotic resistant organism. This cleaning will include the following as a minimum:

- Cleaning with detergent and water and drying of all non-electrical surfaces which come into direct contact with the patient,
- Disposal of all single use and single patient use items,
- Disposal of any linen (see IP05 Linen Policy),
- Cleaning of electrical equipment that comes into direct contact with the patient with a universal detergent wipe,
- Removal of spillages of blood and body fluids with detergent and water followed by 10,000ppm of chlorine (see IP19 Blood and Body fluid spillage policy), and
- Removal of gloves, gowns, masks (if worn) and aprons followed by appropriate hand decontamination by all staff in the theatre.

7.0 Patients with AROs who are expected to undergo surgical procedures do not need to be at the end of the list, but the processes in point 6.0 must be followed. Advice on individual patients may be sought from the IPT where necessary.

8.0 Intra-hospital transfers must be minimised. If a transfer is necessary, the receiving ward must be informed of the patient's infection status using the SBARD handover tool.

9.0 All antimicrobial prescribing including specific procedure and surgical prophylaxis must be in line with the most recent version of the Trust's Antimicrobial Prescribing Guidelines that are available on the intranet site. The Microguide app is also available to support prescribing decisions for prophylaxis.

MRSA Decolonisation Treatment

1.0 General Principles

1.1 There is currently only one standard decolonisation treatment for MRSA. For all other AROs, if required, decolonisation will be prescribed on an individual patient basis in conjunction with the microbiologists or as a special outbreak measure.

1.2 Colonisation with MRSA is more frequent than infection; therefore, patients must be reviewed by a doctor before commencing antimicrobial treatment.

1.3 If antimicrobial treatment is necessary, then the drug selected must be based upon susceptibility testing of the organism involved. The Trust's most recent Antimicrobial Prescribing Guidelines are located on the Intranet, or via the Microguide App advice is available from the microbiologists or the antimicrobial pharmacists.

1.4 MRSA infections of the blood or urinary tract are likely to be associated with intravenous or urinary devices. Wherever possible these devices must be removed or replaced following the reporting of a positive isolate.

1.5 Patients who have confirmed MRSA infection will usually require a course of antibiotics and will also need nasal and skin decolonisation treatment.

1.6 In-patients who have MRSA confirmed from any site require commencement of the MRSA Care Pathway MI_7080314.

2.0 Decolonisation Treatment

2.1 All patients found to be infected or colonised with MRSA must be assessed for their suitability for decolonisation treatment (see 2.4). This applies whether or not the patient is being treated for an infection with antimicrobial therapy. The Trust decolonisation regime for MRSA is provided in points 2.2 and 2.3. Please also see the flow chart at the end of this protocol for the treatment timing and subsequent screening required.

2.2 The standard decolonisation regime for MRSA and PVL associated strains of MRSA / MSSA is outlined in the table below.

Drug	**Route**	**Frequency**	**Length of treatment course**
Mupirocin nasal ointment 2% (Bactroban) See below for resistant strains	Per nasal (to interior nares)	3 times / day	5 days

4% chlorhexidine* (Hibiscrub) Dermol 500 if chlorhexidine allergic or sensitive	Topically (as skin wash) apply neat for 1-3 minutes before rinsing where possible	Once daily	5 days
4% chlorhexidine* (Hibiscrub) Dermol 500 if chlorhexidine allergic or sensitive	Shampoo hair	Twice during the 5 day treatment	Day 2 and 4
Octenidine as an alternative	Topically (as skin wash)	Once daily	5 days
Mupirocin ointment 2% (Bactroban)	Topically to small wounds if present (see 2.4 below)	Twice daily	5 days
Naseptin* nasal cream for resistant strains	Per nasal (to interior nares)	4 times a day	10 days

***NB - Naseptin cannot be used if the patient has a peanut allergy.**

***NB – Chlorhexidine cannot be used if there is an allergy to peanuts or soya.**

1.1 If wounds are colonised or infected with an ARO, they must be assessed for their suitability for treatment. Only wounds which have a surface area less than 2.5 cm^2 and where all edges of the wound can be observed are suitable for treatment with topical mupirocin (Bactroban ®). If larger wounds are present or wounds such as a sinus are found to be colonised or infected with MRSA, then advice will be sought from the Tissue Viability Service and the Wound Care Formulary as to the suitability of alternative topical agents and the promotion of wound healing.

1.2 Contraindications for MRSA decolonisation treatment include the following:

- Pre-term babies (must receive nasal decolonisation only),
- Patients on the End-of-Life pathway where the insertion of nasal treatment may cause discomfort or distress,
- Patients who are allergic or sensitive to chlorhexidine,
- Patients who have an acute or chronic skin condition that the use of chlorhexidine might further exacerbate, and
- Patients with non-healing large wounds, which are yet to undergo tissue viability specialist assessment.

1.3 Re-screening to establish the effect of decolonisation treatment must only take place when the following criteria are met:

- The decolonisation treatment has been stopped or suspended for at least 48 hours **and**
- Any antimicrobial treatment aimed at resolving infection with MRSA has been stopped or suspended for at least 48 hours.

1.4 If the criteria in 1.5 are met then the following sites must be screened:

- Nose,
- Axilla,
- Groin,
- Devices insitu (including IV access sites, catheter specimen of urine if catheterised, wound swabs etc.),
- Sputum if productive cough present, and
- The original site of infection or colonisation if still present.

1.5 A maximum of three consecutive decolonisation treatment courses will be given. If further courses are required, then liaison must take place with a member of the IPT or a microbiologist. Three consecutive clear screens are required for decolonisation treatment to be considered successful.

1.6 Renal patients expected to have a renal dialysis catheter inserted will be offered the additional treatment below.

- All patients who are able to do so will be requested to shower with chlorhexidine prior to the line insertion. If they are unable to shower, they will be requested to wash with chlorhexidine. Staff must ensure that the patient does not have an allergy or sensitivity to chlorhexidine prior to any use of that product.
- All patients must be screened within 1 week prior to line insertion.
- Patients undergoing emergency line insertion will have mupirocin ointment inserted into their nostrils immediately prior to line insertion.
- Patients found to be positive before line insertion will ideally have received a minimum of 48 hours decolonisation treatment prior to line insertion.

1.7 Renal, rheumatology, oncology, haematology and urology patients who attend on a regular basis will be routinely screened on a three-monthly basis.

1.8 Patients who are colonised with MRSA and waiting for routine elective surgery should ideally be decolonised and have a 3 negative screens prior to admission.

1.9 If MRSA decolonisation treatment is unsuccessful, it is not usually necessary to cancel or further delay a surgical procedure.

- At least 1 course of decolonisation treatment must be completed prior to elective surgical admission.
- All patients known to be previously or currently MRSA positive (regardless of number of negative screens) must be commenced on decolonisation treatment 1-2 days before the day of surgery and continue this for a 5-day course.
- If the procedure would normally involve surgical prophylaxis, please consult the RWT Antimicrobial Guidelines on the intranet or via the Microguide App. to see if the prophylaxis requires modification in these circumstances.
- Individual cases can be discussed with a consultant microbiologist or the IPT

Flow chart for inpatient MRSA Decolonisation and Treatment INPATIENT AREAS

Commence MRSA Care Pathway

MRSA Isolated

Full screen
Nose, Groin, Axilla.
Catheter / Sputum specimen / Wound swab.
Risk assess for isolation.
Commence isolation procedures

A YES to any question indicates a HIGH priority for a side ward	YES	NO
Positive sputum with cough or on nebuliser therapy?		
Exfoliating skin condition?		
Large amounts of exudate from positive leg wounds?		
Open wounds which cannot be covered?		

Prescribe decolonisation treatment

Assess suitability for decolonisation (Skin)

NO

Continue isolation precautions
Contact Infection Prevention for decolonisation advice

YES

Skin / hair decolonisation for 5 days
Topical wound management if applicable

Suspend treatment for 2 days

Is the patient on antimicrobial therapy? For MRSA treatment

YES

Await completion of antimicrobial course
Wait 2 days following treatment

NO

RESCREEN and recommence decolonisation treatment

If on antimicrobial treatment

POSITIVE RESULT

Complete 5 days of decolonisation treatment
Suspend for 2 days and re-screen

NEGATIVE RESULT

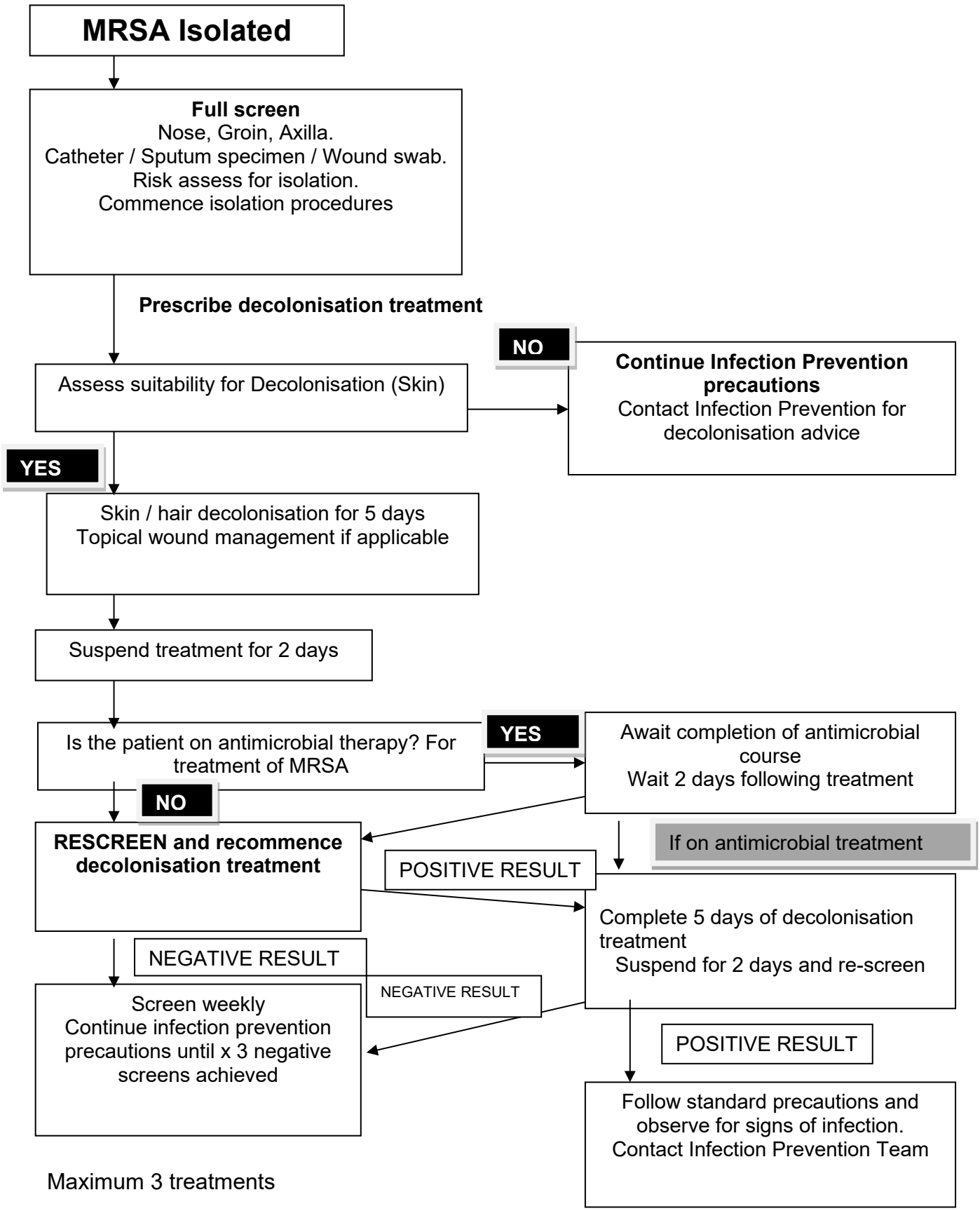
NEGATIVE RESULT

Screen weekly
Continue isolation precautions until x 3 negative screens achieved

POSITIVE RESULT

Patient is a high priority for single room isolation.
Follow isolation precautions and observe for signs of infection.
Contact Infection Prevention Team

Flow chart for a resident in a care home MRSA Decolonisation and Treatment



Maximum 3 treatments

Procedure for Carrying Out MRSA Decolonisation Treatment

1.0 General Points

1.1 MRSA decolonisation treatment is suitable for MRSA and MSSA including PVL strains except when in PVL cases open boils are present.

1.2 Sheets and towels should be changed daily whenever possible.

1.3 Dust in patient areas must be kept to a minimum.

1.4 The eyes must be avoided when using decolonisation products.

1.5 Use individual flannels or disposable cloths.

1.6 Baths sinks and shower areas must be cleaned with detergent and water using a disposable cloth after use.

2.0 Chlorhexidine 4% body-wash / shampoo

2.1 Apply Hibiscrub (chlorhexidine 4% body-wash**)** to a clean sponge or flannel and wash all over then rinse with water. Whether the patient bathes, showers or washes at a basin apply the Hibiscrub neat and wash thoroughly then wash off paying particular attention to the groins, axillae, and any folds in the skin.

2.2 Do this for 5 consecutive days.

2.3 During this time wash the patient's hair on two of the days using Hibiscrub instead of shampoo. Conditioner can be used afterwards if required.

2.4 The chlorhexidine solution must stay in contact with the skin for approximately 1-3 minutes.

2.5 Rinse off well before drying skin thoroughly.

2.6 Towels must be changed daily.

3.0 Mupirocin (Bactroban nasal ointment)

3.1 Apply a matchstick head sized amount (less for a child in proportion to the size of the nostril) to the inner surface of each nostril. Press the sides of the nose together and massage gently to spread the ointment inside the nostrils.

3.2 Repeat this three times a day for 5 days.

3.3 Skin decolonisation needs to be undertaken for 5 days

4.0 Naseptin nasal cream

4. 1 Apply a matchstick head sized amount to the inner surface of each nostril as for mupirocin.

4.2 Repeat this four times a day for 10 days.

4.3 If the patient is on Naseptin nasal ointment, the skin wash must continue for 5 days

5.0 For colonised wounds refer to the Trust wound dressing formulary and guidelines or seek advice from the Tissue Viability Team.

Clinical Features and Risk Factors for PVL associated *Staphylococcus aureus (PVL-SA)*

1.0 Clinical Features

These strains of *Staphylococcus aureus* usually present in the community; however, they have spread in hospitals as MRSA and caused outbreaks in the UK and abroad. The clinical features of PVL-SA are listed below. Many are common presentations of staphylococcal infections. Therefore, this list must be read in conjunction with the risk factors below. The IPT or the on-call consultant microbiologist must then be alerted to any suspicion of PVL-SA.

1.1 Skin and soft tissue infections

- Boils (furunculosis), carbuncles, folliculitis, cellulitis and purulent eyelid infections.
- Cutaneous lesions ≥ 5cm in diameter, which need different treatment from smaller lesions.
- Pain and erythema out of proportion to the severity of cutaneous findings.
- Necrosis.

1.2 Invasive infections

- Necrotising pneumonia.
- Osteomyelitis, septic arthritis and pyomyositis.
- Purpura fulminans.

2.0 Risk factors for PVL-SA

The risk factors, investigation and management of PVL- SA are similar to MRSA. The risk factors and groups are associated with groups of people living in close communities with close contact and where contaminated items may be shared including military camps, gyms, prisons and care homes.

2.2 Contaminated items

- Shared towels and flannels.
- Equipment.
- Environment.

2.2 Close contact

- Contact sports.
- Household contacts with PVL-SA.
- Gym activities.

2.3 Crowding

- Residential care settings.
- Prisons.
- Military training camps.

2.4 Cuts and other compromised skin integrity

- Wounds.
- Pressure damage.
- Ulcers.
- Eczema or psoriasis.

3.0 If a PVL –SA is identified from routine microbiological swabs and sputum samples, close contacts require a nose, axilla and groin screen with a specific request for PVL-SA written on the request form.

Treatment of these infections must follow antibiotic prescribing guidelines and the microbiological susceptibility results produced by the laboratory. Please seek clinical advice from a microbiologist. It is important to decolonise the patient as well as treat the primary infection. The spread of these infections can be reduced by maintaining a high level of standard precautions such as:

- Covering infected skin,
- Good hand hygiene,
- Using tissues that are disposed of immediately to absorb coughing and sneezing, followed by hand washing,
- Use of individual personal towels and face clothes,
- Regular vacuum and damp dusting, and
- Regular changes of bed linen.

Following positive result of a patient refer to:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/322857/Guidance_on_the_diagnosis_and_management_of_PVL_associated_SA_infections_in_England_2_Ed.pdf

Decolonisation must include treatment as for MRSA.

Following decolonisation 3 rescreens are required to confirm decolonisation has been successful.

UKHSA are informed of all cases of PVL and will contact the patient's GP to follow up each case. Infection Prevention are contacted to offer support to the GP.
UKHSA Guidance for the follow up of contacts of PVL cases can be found below.

4.0 References

https://www.gov.uk/government/collections/panton-valentine-leukocidin-pvl-guidance-data-and-analysis

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/322857/Guidance_on_the_diagnosis_and_management_of_PVL_associated_SA_infections_in_England_2_Ed.pdf

Specific Protocol for Preventing the Spread of PVL strains of *Staphylococcus aureus* and Management of PVL-SA including Positive Healthcare Workers

1.0 Preventing the spread of PVL-SA

1.1 Patients admitted to hospitals with PVL strains of *Staphylococcus aureus* may be admitted for skin and soft tissue infections such as incision and drainage of abscesses or cellulitis. Less commonly they may have necrotising pneumonia.

1.2 All inpatients with PVL associated strains of *Staphylococcus aureus* must be cared for in single room isolation if there are no contraindications.

1.3 The same precautions must be taken as for MRSA detailed in Attachment 5 for skin and soft tissue infections.

1.4 If necrotising pneumonia is suspected then the following must also be done.

1.4.1 Surgical masks must be worn for intubation, chest physiotherapy and other respiratory care where a cough may be induced.

1.4.2 Closed tracheal suction must be used if the patient requires ventilation.

1.4.2 Screening of close contacts for carriage of PVL associated strains must be carried out (UKHSA Team co-ordination)

1.4.3 Health care workers in direct contact with respiratory secretions who have not worn adequate protection as in 1.4.1 must be screened 3-7 days after the contact and given the contact details of a physician to contact should symptoms of infection develop subsequently.

2.0 Management of PVL-SA positive Healthcare Workers

2.1 All staff screening will be arranged through Occupational Health and Wellbeing in liaison with the IPT.

2.2 Healthcare workers screened with a positive result must be treated with decolonisation treatment detailed in Attachment 6.

2.3 Any staff with clinical symptoms and a positive screen for PVL-SA must not work until the acute infection has resolved and the first 2

days of the five-day decolonisation treatment programme has been completed.

2.4 Positive staff must be questioned as to household contacts so that they can be simultaneously decolonised. This will be on the advice of UKHSA.

2.5 Follow up screens following decolonisation treatment must follow the same process as for MRSA Attachment 6.

2.6 Once screened negative, previously PVL-SA positive health care workers must be advised of possible symptoms of reoccurrence and to stop work immediately should these occur. OCWB must be informed.

3.0 Hospital acquired PVL-SA infections / colonisation

3.1 A risk assessment will be undertaken by the IPT to establish which patients must be screened following identification of a case. This will vary based on the location and specific patient details.

3.2 The microbiologists will co-ordinate a search of the laboratory database to identify any other patients with the same antibiogram.

3.3 Where available, these specimens and that of the current case will be sent to the Staphylococcal Reference Unit for PVL testing.

3.4 Actions to further reduce spread will be in line with MRSA special outbreak measures detailed in Attachment 1.

Specific Protocol for Preventing the Spread of CPE

1.0 Preventing the spread of CPE

Carbapenem-resistant Enterbacteriales (CPE) are currently rare but are an emerging threat. The most prevalent of this group of multi-resistant organisms in the UK are those that produce the NDM (New Delhi metallo β-lactamase), OXA- 48 or KPC (*Klebsiella pneumoniae* Carbapenemase) enzymes, though there are several other enzymes that confer resistance to this group of antibiotics.

1.1 Infections caused by these bacteria are more difficult to treat. Up until recently most cases in the UK had had recent medical exposure in high-risk countries (Indian subcontinent, Greece, Italy, and Turkey but there is a potential risk of CPE from travel to any foreign country). Now, however, acquisition is occurring in the UK, particularly in the Northwest Region of England.

1.2 To try to recognise patients who might be carriers of or infected with Carbapenemase producing organisms, a CPE risk assessment must be completed for **ALL** emergency, elective and transfer patients admitted to RWT. The following questions must be asked on admission and the answers documented in the healthcare record.

1. Has the patient had an overnight hospital stay in the UK or abroad in the last 12 months (excluding RWT)?

2. Has the patient travelled abroad in the last 12 months?*
Patients who have travelled to the highest risk countries (see paragraph 1.1 above) will take priority and need to be isolated in a side room with en-suite facilities.

3. If answer is positive to any of the above, state where and approximate date.

4. If answer is positive to any of the above:

- **Rectal screen for CPE must be obtained*,**
- **Patient isolated pending result (See Appendix 1 IP10 Isolation policy for guidance on who to isolate),**
- **IP high risk CPE patient precautions in place (Detailed in Attachment 15), and**
- **IP Team informed on Ext 85282**

A CPE risk assessment is required for these patients along with a CPE rectal screen if they are identified as high risk for CPE.

***A stool sample can also be obtained if a patient refuses a rectal screen. See ward-based protocols in Attachment 15.**

2.0 CPE risk assessment and screening matrix

Type of admission	Specialty/ward	When to risk assess and screen if applicable	Area responsible for screen
Emergency/ Non-Elective admissions	All wards	On admission	ED to complete risk assessment. Admitting ward to screen
Elective admissions	Pre op	At pre op assessment appointment.	Pre op clinic
All day case surgery	Day case Units	Risk assessment must be completed on admission, but no screen required.	No screening is required for these patients unless they are to be admitted to an inpatient area
ICCU		All screened on admission and then patients who fulfil high risk criteria to be rescreened weekly until 4 negative results obtained.	ICCU
Regular attenders	Haematology/Oncology	At first referral. **N.B.** reassess patient for subsequent foreign travel or hospital admissions elsewhere following first screen.	Admitting ward/OPD
	Renal	On admission **N.B.** reassess patient for subsequent foreign travel or hospital admissions elsewhere following first	Admitting ward/OPD

		screen (See Renal Services protocol in attachment 15).	
Maternity Services: Screen at 20-week USS appointment if meet criteria On admission for Intra-uterine transfers Within 24hours for Emergency C section	Maternity	To be risk assessed and screened at 20-week scan.	Antenatal clinic / Maternity Ward Triage/MLU Delivery Suite
Paediatrics Emergency or Elective	Paediatrics	On admission. Please note a stool sample must be taken instead of a rectal swab and request CPE screen.	Admitting ward or PAU
Patients having a Gastro-intestinal endoscpy	Endoscopy	On admission	Endoscopy

3.0 Risk assessment and screening exclusions

The following patients are exempt and do not require a CPE risk assessment or rectal screen on admission to RWT.

Specialty/Ward	Comments
Ophthalmology day cases	
Interventional Radiology	Unless the patient has had bowel prep*
Non-GI Endoscopy	
Dermatology	
Rheumatology	

4.0 Known Positive CPE patients

Some patients may be carrying a card issued by a healthcare provider stating that they have been previously identified as being a carrier of a CPE. Such patients are a very high priority to be nursed in a side room, preferably en-suite. If this is not possible, a none en-suite side room is acceptable, but the patient must have a commode for their exclusive use and not use any toilet used by other patients. The IPT (duty microbiologist outside normal office hours) must be informed of the patient's admission.

5.0 Infection Prevention Precautions

Adherence to standard infection prevention precautions with patients isolated in a single room with en-suite bathroom or dedicated commode is sufficient to prevent spread of these organisms (see Attachment 15 or the Intranet for further details). Particular attention must also be paid to:

- Hand hygiene with soap and water at all '5-moment' occasions,
- Effective decontamination of equipment using chlorine-based product,
- PPE including long sleeved fluid repellent gowns for close contact and toileting, and
- Adequate communication to other healthcare providers (see below).

Room Cleaning

Chlorine based product at 5,000ppm must be used for the routine cleaning of the room and fittings. If the patient is moved or discharged, the room and equipment must be decontaminated with hydrogen peroxide vapour. (See Attachment 15)

Treatment

CPE's are resistant to most antibiotics. If antimicrobial treatment is being considered for a patient infected with one of these organisms, this must be discussed with the duty microbiologist.

Screening

People who have been in contact with patients found to be carrying or infected with CPE may require screening. The microbiologists and IPT will advise on this on a case-by-case basis.

Communication

If a CPE positive patient has received hospital care in another hospital in the UK within the past year, and it is thought possible that the organism was acquired there or that the patient may have been positive at the time they were discharged from that hospital, the IPT of that hospital must be informed; the RWT IPT will do this.

The patient (or the patient's carers) must be notified of the positive results and be given an explanation of what this means. There are patient information leaflets available (mi000914, mi001114, mi784613) and the IPT or microbiologists are available to help with this.

The patient (or the patient's carers) must be issued with a card (that will be provided by the RWT IPT) to show to the clinical or admissions staff whenever the patient accesses any type of healthcare in the future. The importance of doing this must be explained to the patient (or the patient's carers).

CPE Positive Patient

Infection Prevention Team

- Add Carbapenemase-Producing Enterobacteriaceae tag on ICNet for the positive patient if not already filtered through from the lab.
- Email ED administration manager to request an infection risk tag be added to MSS.
- Infection Prevention Nurse to generate positive letters for patient and GP.
- Email a copy of the GP letter to IP Admin Team to be uploaded to Clinical Web Portal. Admin to send a copy of the letter to GP along with the CPE positive patient leaflet. If patient is an out of area patient, IPN must speak to relevant out of area IPT team.
- IP team to take or send the letter to the patient with yellow alert card and information leaflets (hand deliver on the next working day; post it on the next working day if discharged).
- If detected in a GP sample, community IPT team to visit the patient to deliver the alert card and leaflets and give advice.
- Isolate the patient in single room with en-suite facilities (if no en-suite available – dedicated toileting facilities, if not feasible to do this then dedicated commode).
- PPE- long sleeved fluid repellent gowns for up close and personal patient care e.g turning, bathing, hygiene needs etc. – **Order Code BWK 206.**
- Cleaning regime – chlorine-based solution at 5000ppm for side room (plus HPV cleaning on discharge). Equipment to be cleaned with Chlorox (chlorine 5,000ppm) wipes.
- No further screening required (once positive, always positive - strict precautions on all subsequent admissions)
- Datix each positive case if there has been proven ongoing transmission with further positives found from cloud screening.
- Complete ICNet extended properties to capture risk factor data.
- Change all curtains within the bay and chlorine clean at 5000ppm – best practice is to ask to decant the bay and HPV clean. Risk assess on a case-by-case basis.
- HPV all ward toilets following a positive result risk assess. Consider UV cleaning if unable to HPV.
- Enhanced cleaning with chlorine-based solution at 5000ppm should be implemented on the ward until negative contact screens have been obtained.
- Write in the notes section on Clinical Web Portal with information regarding CPE positive result. Include all precautions required at next visit/admission. e.g. PPE required, cleaning regime.
- Risk assess close family and friend contacts for screening (e.g. immuno-suppressed relatives or having frequent healthcare).

Contact tracing: process for identifying contacts and cloud screening new positive or /known cases admitted (into a bay) <48hours after admission

- If patient is bed bound (no toilet facilities used), cloud screen bay contacts only.
- If patient has used toilet facilities risk assessment required:
  - If patient has only used toilet in the bay, cloud screen bay contacts only, but
  - If toilets are accessed by patients from all bays, cloud screen the whole ward.
  - Screening to be done on days **3, 7, 10 and 14 after exposure.**
- Look back at contacts from previous wards if applicable e.g., AMU.
- If any positives found among bay contacts, cloud screen the whole ward.

New positive or known case admitted (into a bay) >48hours after admission

- Cloud screen whole ward day **0 and then days 3,7, 10 and 14 post-exposure.**
- Look back at contacts from previous wards, if applicable e.g., AMU.

Screening regime

- Inform ward which patients require a CPE rectal screen.
- All contacts to be tagged as CPE contact on ICNet.
- Contact patients will require a CPE rectal screen as per regime above.
- Further screening may be required depending on results. To be guided by consultant microbiologist. If positive contacts are detected, screening to continue twice weekly until decided by the IPT or a microbiologist that can be stopped.
- Liaise with Microbiology Laboratory if ward cloud screening is required.
- Ensure screens have been taken and add as ‘tasks’ on ICNet.
- Inform relevant ward of patient screening if patient is transferred.
- If positive result is detected, then follow CPE positive process and discuss further with consultant microbiologist regarding further actions
- If patient discharged prior to screen, if and when he or she is readmitted, just 1 screen required molecular (PCR) testing.
- Provide leaflets for all contact screen patients (ward to fund).

Suspected/ Confirmed case of CPE

Infection Prevention Team/Reactive IPN informed by Microbiology or clinical area if a suspected case of CPE

Patient has presented in a department and has informed staff of known CPE carrier/infection or has shown yellow alert card or has an Infection Risk of CPE on Clinical Portal, or
Microbiology has identified a CPE from a specimen, or
Patient has responded positive to the questions asked on admission*

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Infection Prevention Team/Ward Sister/Charge Nurse

1) **IMMEDIATE** strict single room isolation requirements (including en-suite facility/ dedicated commode)
2) **Ensure PPE is readily available including long sleeved fluid repellent gowns to be used when giving personal care. Emergency stock can be obtained from theatres and cross charged.**
3) Patient to be screened by obtaining a rectal swab as soon as clinically possible
4) Patient to be issued with leaflets informing them of the organism and what to do
5) Issue the yellow alert card
6) Follow Protocol 6 in IP08 Operational Policy

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Infection Prevention Team/Senior Sister/Charge Nurse/Manager

Ensure environmental decontamination occurs using:

1) Manual clean using hypochlorite solution, at a concentration of 5,000ppm on a daily basis
2) Hydrogen Peroxide Vapour (HPV) to be completed on discharge or when isolation is no longer necessary

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Infection Prevention Team

Ensure an ALERT has been added to PAS and case has been created on ICNet. Notes added to Clinical Portal and letter generated and uploaded to Clinical Portal
IPT notify ED to include patient alert as CPE positive within ED system for future attendances

*If patient has had an in-patient stay in another hospital in the UK or abroad in the preceding year, the IPT must establish which hospitals the patient has been in (and in which country) and try to establish whether this is a hospital (or country) where CPEs are endemic. If no suitable information is available from UKHSA, the consultant microbiologists need to be asked if there is a known problem in that institution / country. All patients giving a history of an in-patient stay in an endemic hospital or country must have a screening sample for CPE (rectal swab or faeces sample) and be isolated as above if possible until the results of the screen sample is known. A risk assessment may be necessary if isolation is not immediately available.

Transfer / Discharge of Patients with an ARO.

1.0 Patients with an ARO must not have necessary aspects of their care compromised due to the presence of the organism (e.g., physiotherapy, occupational therapy, outpatient appointments etc.). Where the risk is unclear advice must be sought from a member of the IPT.

2.0 Additional care and supervision may be required to ensure that the patient is safely cared for during their transportation and stay in a temporary setting.

3.0 On permanent transfer or discharge:

- The vacated bed space or side room must be cleaned using detergent and water followed by a solution of 1,000ppm available chlorine.
- For CPE discharge clean, Hydrogen Peroxide vapour must be used following a cleaning process using 5,000ppm available chlorine.
- Soft furnishings (e.g., curtains) from the bed-side or side room must be removed and treated as infected linen.
- Disposable curtains must be replaced and dated following the terminal cleaning process.
- Clinical equipment (e.g., sphygmomanometer, fans and IV infusion pumps) must be cleaned according to manufacturer's instructions. Electrical items must be wiped with a universal detergent wipe.
- Disposable items must be removed from the room and disposed of as clinical waste even if unopened (e.g., unused dressings).
- Unused linen stored in the room must be disposed of as infected linen.
- Any toiletries or patient's unwanted own belongings must be disposed of as clinical waste.

4.0 Transportation of patients within the Trust

4.1 The health care professional (usually the registered nurse) responsible for the patient's care must ensure that the receiving health care professional is aware that the patient has an ARO prior to their transfer.

4.2 The health care professional responsible for the patient's care at the destination must ensure that they have the necessary equipment and facilities and have communicated the correct information to other members of the team as appropriate.

4.3 Prior to transport the healthcare professional responsible for the patient's care must ensure and document that:

- Any lesions / wounds are covered with a suitable dressing,
- If linen is to accompany the patient (e.g., bed transfer) it has been changed prior to the transfer, and
- Staff involved in the transfer (e.g., porters and ambulance crews) are aware of the precautions they need to take to ensure their own and subsequent patients' safety.

4.4 Protective clothing (e.g., gloves and aprons) are not usually required to be worn by transporting staff unless clinical care is anticipated to be required during the journey for example if blood and /or body fluid contact is possible.

4.5 Transporting staff need only wear protective clothing if specifically requested to do so by either the health care professional caring for the patient or a member of the IPT

5.0 Transfer to theatre for a surgical procedure:

5.1 In addition to section 4 the staff responsible for the care of the patient must inform theatres at the **earliest opportunity** that the patient has an ARO. Wherever possible this must occur at least one day before the planned surgery.

6.0 Transfer to another hospital

6.1 Transfer of patients with an ARO for reasons other than clinical or social need must be avoided (e.g., due to capacity issues).

6.2 Where patient transfer is necessary, in addition to section 4, the person in charge of the receiving clinical area must be informed that the patient has an ARO, the stage of treatment and the precautions being taken to prevent spread prior to transfer. If the information only becomes available following the transfer, then the Infection Prevention Team must contact the destination hospital's Infection Prevention Team at the earliest opportunity. This information must be documented in the patient record.

7.0 Transfer requiring ambulance

7.1 In addition to actions listed in section 4 internal and external ambulances must be informed that the patient has an ARO prior to transportation (preferably at the time of booking). This information must be documented in the patient record.

8.0 Discharge to a nursing or residential home

8.1 The healthcare professional responsible for the patient's discharge arrangements must inform appropriate staff at the destination that patient has an ARO along with relevant associated details. If the home is unsure of which precautions, they need to take they should be advised to contact the Infection Prevention Team.

9.0 Discharge home

9.1 Any treatment course for colonisation of an ARO must be completed unless this causes physical difficulties for the individual following discharge (if so, discuss with family or carers if unable to assist then treatment will be discontinued on discharge).

9.2 Patients and, or their carers must be given written information prior to discharge on the ARO and relevant advice.

9.3 Patients and, or their carers (non-health care professionals) will be advised to carry out care as usual and wash their hands following care activities (e.g. assisting with washing, catheter / stoma care).

9.4 Patients and, or carers will be advised to handle laundry in the usual way and not to restrict visitors due to the ARO.

9.5 Where patients or carers have specific concerns related to other sick or frail people with whom the patient may come into contact, advice must be sought from the IPT.

9.6 Any health care worker arranged to provide care to the patient following their discharge must be informed of the ARO and the necessary precautions.

9.7 If treatment courses need to be continued following discharge from hospital and the patient is unable to self-medicate, a referral to Community staff must be made. The IPT will follow up MRSA positive patients if they have a Wolverhampton GP.

9.8 If rescreening of a patient has not been completed prior to discharge refer to the IPT.

Visitors to Patients with an Antibiotic Resistant Organism

1.0 Visitors to patients who have been found to have an ARO must not be discouraged due to the presence of the organism unless specific instructions have been given by a member of the IPT.

2.0 Information must be made available for isolation rooms via Trust signs to inform the visitor that precautions are in place and that they should seek advice from the person caring for the patient or senior nurse on the ward.

3.0 Visitors to patients with an ARO do not need to wear protective clothing (gloves and aprons) for normal social contact.

4.0 Visitors must be advised to decontaminate their hands prior to leaving the ward or care home or between patients if visiting more than one patient.

5.0 Visitors who are participating in close contact care activities (e.g., bed bathing) must be advised to wear gloves and aprons for these activities only.

6.0 Visitors who are participating in feeding the patient must be advised to clean hands prior to feeding but do not need to wear PPE.

7.0 Visitors must be advised of the actions that they need to take to prevent spread of an ARO.

8.0 The Trust Visiting Policy must be adhered to.

Guidelines on Staff Carriage of Antibiotic Resistant Organisms

1.0 Staff members with recurrent boils, abscesses or skin conditions must be referred to OHWB for assessment of carriage of *Staphylococcus aureus* (MRSA and MSSA). These individuals must not work in clinical situations until they have been fully assessed (see Attachments 8).

2.0 Unless special outbreak measures (Attachment 1) are in place, staff will not be required to be routinely screened for any ARO.

3.0 Staff members must not undertake screening of themselves or colleagues unless instructed to do so by Occupational Health and Wellbeing or the Infection Prevention Team. Staff screening samples submitted to the laboratory must be labelled as Occupational Health samples; if they are not labelled as such, they will be discarded.

4.0 If staff members are found to be colonised or infected with an ARO via their GP or a hospital admission, they must notify Occupational Health and Wellbeing, who will see them and advise on further action.

5.0 Staff members who are found to have a clinical infection with an ARO will not normally be allowed to continue clinical duties until the infection has been treated. Further advice can be sought from OHWB.

6.0 Staff members who are colonised with an ARO will normally be allowed to return to work under the supervision of OHWB.

7.0 Some staff members perform procedures of a higher risk that require infection control practices more than social hand decontamination and standard precautions (e.g., surgical procedures). For these staff, OHWB must confer with the IPT to do a risk assessment on the suitability of the member of staff to return to work. Similarly, if there is an on-going concern regarding a member of staff with an ARO, IPT advice must be taken.

Guidelines on MRSA Positive Result

1. RWT inpatients

It is the responsibility of the clinical team or nurse caring for the patient to review results for microbiology samples in a timely manner.
The IPN will ring the ward or department to inform the nurse in charge or staff member looking after the patient of the positive result on the same day or the next working day and advise that decolonisation is required and request commencement of the RWT MRSA care pathway. The IPN will also visit the patient to ensure treatment has been commenced according to Trust policy. It is the ward nurse's responsibility to inform their patient and consultant of the MRSA status and to arrange decolonisation treatment immediately. The ward nurse must record that the patient and consultant have been informed in the patient notes.

2. Discharged Patients

For patients discharged from the Trust prior to confirmation of the result, the IP admin team will generate a consultant letter (upload to Clinical Web Portal) and then email or post it to the GP for information only. If the patient is a Wolverhampton Place (Black Country ICB) patient the IPT will follow up the patient in the community and arrange decolonisation treatment.

3. Discharged patients from outside Wolverhampton

The IPT will inform the relevant area IPN of the positive result, by phone or email, the same or next working day for patients registered with a GP outside of Wolverhampton Place (Black Country ICB)

4. Outpatients

For patients who are identified as MRSA positive in an Outpatient Department (OPD) setting, the IPN will inform the appropriate Outpatient Department and the consultant's secretary with the result, by phone, the same or next working day and advise that decolonisation treatment must be commenced. It is the responsibility of the clinical team who has screened the patient to follow up the patient and offer treatment. This must all be documented in the patient notes.

5. Community MRSA Positive Results

It is the responsibility of the GP, Practice Nurse or District Nurse to follow up samples taken in the community and prescribe decolonisation treatment as required.

Ward and Department Based Protocols for Carbapenemase-producing Enterbacteriales (CPE)

1.0 CPE Positive Patient

- Information to be included in the daily safety brief to ensure all relevant staff are aware of the situation and the precautions required.
- Scrupulous hand hygiene using soap and water or hand gel as appropriate.
- PPE for close contact and toileting - long sleeved fluid repellent gowns; for general contact - aprons and gloves.
- Patient to remain in isolation during entire hospital stay (once positive, considered to be always positive). (See IP10 Isolation policy and Attachment 4)
- Cleaning - inform domestics to use chlorine based product at 5000ppm routine for cleaning (plus HPV cleaning on discharge).
  Any equipment in the room to be cleaned with chlorine-based wipe wipes
- Ensure CPE is discussed on transfer and discharge documentation (e.g. SBARD, discharge summary etc.) and that relevant parties are informed (e.g. care home, social services staff).
- Outpatients - appointments must be planned for the end of the day.
- If patient requires diagnostic tests or a procedure that cannot be undertaken in the patient's room, it must be planned for the end of the day (where possible) and equipment terminally cleaned after use. If it cannot be undertaken at the end of the day, terminal cleaning of equipment will be required before use on the next patient (cleaning with chlorine-based product at 5000ppm; chlorine-based wipes can be used on equipment also as they contain 5000pm chlorine).
- Contact IP Team for any information as required.
- Daily check of antimicrobials – IV to oral and stop.
- Antimicrobials - use only if necessary and after consultation with a microbiologist.
- Devices removed as soon as clinically possible.
- Device usage rationalised – avoid or remove all devices (PVC, urinary catheters etc.).
- Update Vital Pac in a timely manner regarding devices.
- Dedicated equipment for the CPE positive patient wherever possible.
- Shared equipment must be cleaned with chlorine-based wipes before leaving the side room.
- Patient to go directly to any other areas and returned immediately following procedure e.g., x-ray.
- Masks only need to be used if CPE has been isolated in the respiratory tract.
- Eye protection to be used as necessary.

2.0 CPE High Risk

- Staff to complete risk assessment (healthcare abroad in the last 12 months, healthcare in the UK and any travel abroad), if positive response, isolate on admission with en-suite (if no en-suite, use dedicated toileting facilities; if unable to use a dedicated toilet, patient to have a dedicated commode). See IP10 Isolation policy.
- Follow IP10 Isolation risk matrix to guide prioritisation for side rooms – see below.
- Scrupulous hand hygiene using soap and water or hand gel as appropriate.

- PPE for close contact and toileting - long sleeved fluid repellent gowns; for general contact - aprons and gloves.
- If identified as risk - rectal swab using red topped swab from Microbiology, use e-request process where possible stating either ‘CPE SCREEN (faeces)’ or ‘CPE SCREEN (rectal swab)’.
- Provide patient with leaflet.
- Patient to remain in isolating until first negative result.
- Cleaning - inform domestics to use chlorine-based product at 5000ppm for routine cleaning (plus HPV Cleaning on discharge if found to be CPE positive).
- Any equipment in the room to be cleaned with chlorine-based wipes.
- Avoid shared equipment where possible and ensure any shared equipment is cleaned with a chlorine-based wipe.

3.0 CPE Contact

- Rectal swab using red topped swab from Microbiology, use e-request process where possible stating either ‘CPE SCREEN faeces)’ or ‘CPE SCREEN (rectal swab)’.
- Provide patient with leaflet.
- Scrupulous hand hygiene using soap and water or alcohol hand gel.
- PPE - aprons and gloves.
- Perform rectal screen following contact then 1 week later if remains an inpatient.
- Patient does not require isolation if part of whole ward screening.

Infection Prevention Nurse Protocol for CPE

1.0 CPE Positive Patient

- Add CPE tag on ICNet for the positive patient.
- Add the alert INF on PAS.
- IPN to generate positive letter for patient and task Admin to upload to Clinical Web Portal and send to GP (need template on ICNet).
- If patient is an Out of Area patient, then IPN must speak to relevant out of area IPN.
- IPT take letter to patient with yellow alert card and information leaflets (hand deliver next working day, next working day post if discharged).
- If detected in a GP sample, IPN to visit the patient to deliver alert card and leaflets and give advice.
- Isolate patient in single room with en-suite facilities (no en-suite – dedicated toileting facilities, if not feasible to do this then dedicated commode).
- PPE- long sleeved fluid repellent gowns.
- Cleaning regime – chlorine-based product at 5000ppm for side room (plus HPV cleaning on discharge).
- No further screening required (once positive always positive – strict precautions on all subsequent admissions).
- Datix if there are patient contacts who require screening.
- Update ICNET extended properties with risk factors.
- Inform Hotel Services to change all curtains within the bay and use a chlorine-based product at 5000ppm – best practice is to ask to decant the bay and HPV clean (risk assess on a case-by-case basis).
- Inform Hotel Services to HPV all ward toilets following a positive result.
- Chlorine based product at 5000ppm to be used across the ward until negative contact screens have been obtained.
- Write in the notes section on Clinical Web Portal with information regarding CPE positive result.
- Risk assess close family/friend contacts for screening (e.g. immuno-suppressed relatives or having frequent healthcare).

2.0 Contact tracing

- Identify all contacts through the entirety of the patient's journey - cloud screen entire ward.
- Inform ward of which patients who remain on the ward require screening.
- All contacts to be tagged as CPE contact on ICNet.
- Liaise with Microbiology as to when the contacts are to be screened for lab capacity.
- Ensure screens have been taken and add as 'tasks' on ICNet.
- Inform relevant ward of patient screening when patient has been transferred.
- Contacts to be screened initially and then 1 week later if remains an in-patient.
- Once 2nd negative received expire CPE contact TAG from ICNet
- If positive results detected then follow CPE positive process

- If patient discharged prior to screen if/when readmitted just 1 screen required (molecular testing)
- Provide leaflets for all contact screen patients – individual wards / departments to fund this from budgets as agreed with Matrons and Heads of Nursing

3.0 CPE High Risk

- Capacity team will send an email to the Generic IP email address when patients are transferred from other hospitals (then IPT ensure that screens are completed and patient isolated)
- Specialised areas such as Cardiology and Cardio-thoracic surgery will need to find out specific clinical information regarding intra hospital transfers
- Tag as High Risk CPE on ICNet
- Scrupulous hand hygiene using soap and water or hand gel as appropriate
- PPE - Close contact and toileting - long sleeved fluid repellent gowns until 1st negative screen
- General contact – aprons and gloves
- If identified as risk - Rectal swab using red topped swab from Microbiology, use e-request process where possible stating either ‘CPE SCREEN (Faeces)’ or ‘CPE SCREEN (Rectal S)’
- Only 1 CPE screen required
- Patient to remain in isolation until first negative result
- Cleaning - inform Hotel Services to use a chlorine-based product at 5000ppm for routine cleaning
- Any equipment in the room to be cleaned with chlorine-based wipes
- Avoid shared equipment where possible and ensure any shared equipment is cleaned with a chlorine-based wipe

Renal Services Protocol

Patient meeting the 'high risk' criteria for admission screening for Carbapenemase Producing Enterbacteriaceae (CPE) – admitted into/ attending Renal Services

Red Risk:

- Healthcare anywhere abroad in the last 12 months
- Healthcare in the UK in the last 12 months

Amber Risk:

- Carbapenemase Producing Enterbacteriaceae (CPE) contact
- Foreign travel to a high-risk country (no healthcare received) – Italy, Greece, Turkey and the Indian sub-continent

*This list is not exhaustive and there is a risk of CPE following travel to other foreign countries therefore patients need to be risk assessed and CPE screened accordingly.

If yes to any of the above, obtain a rectal screen for CPE as soon as possible and notify Infection Prevention Team on ext. 85282

1. Renal admission documentation utilised for assessing CPE risk must be completed as part of the admission process
2. Patients categorised as a **'red' risk for isolation** will require immediate isolation on admission (single room with en suite is the preferred option). If no en suite then a dedicated commode must stay with the patient.
3. The **'red'** risk patient must remain in isolation until 1 negative CPE screen has been obtained,.
4. **Clinical need for transfer into RWT/ admission into renal services must take priority over isolation availability – a risk management approach will be needed – contact IP for advice.**
5. Patients categorised as an **'amber' risk for isolation** will *ideally* be isolated until 1 negative screen result but a 'red' risk category patient will be higher priority
6. The **'amber'** risk patient should remain in isolation until 1 negative CPE screen has been obtained,
7. Excellent hand hygiene and appropriate use of PPE is essential for any high-risk patient
8. CPE screens should be obtained on a 3 monthly basis for frequent attenders, at the same time as other routine Microbiological samples (e.g. MRSA/MSSA)
9. Ensure effective communication occurs if the patient is transferred between clinical areas

Positive result:

1. Follow appropriate flowchart for management of a positive CPE patient

Cardiac Services Protocol

Patient meeting the 'high risk' criteria for admission screening for Carbapenemase Producing Enterbacteriaceae (CPE) – admitted into Cardiac Services

Red Risk:

- Healthcare anywhere abroad in the last 12 months

Amber Risk:

- Carbapenemase Producing Enterbacteriaceae (CPE) contact
- Healthcare in the UK in the last 12 months
- Foreign travel to a high-risk country (no healthcare received) – Italy, Greece, Turkey and the Indian sub-continent*

*This list is not exhaustive and there is a risk of CPE following travel to other foreign countries therefore patients need to be risk assessed and CPE screened accordingly.

If yes to any of the above, obtain a rectal screen for CPE as soon as possible and notify Infection Prevention Team on ext. 85282

1. Stamp/ admission documentation utilised for assessing CPE risk must be completed within admission portal as part of medical clerking process
2. Utilise **Appendix 1 of IP10 Isolation Policy** as a guide for prioritisation of isolation facilities
3. Patients categorised as a **'red' risk for isolation** will require immediate isolation on admission (single room with en suite is the preferred option). If no en suite then a dedicated commode MUST stay with the patient.
4. The **'red'** risk patient must remain in isolation until 1 negative CPE screen has been obtained,.
5. Patients categorised as an **'amber' risk for isolation** will ideally be isolated until 1 negative screen result but a 'red' risk category patient will be higher priority
6. The **'amber'** risk patient should remain in isolation until 1 negative CPE screen has been obtained, Excellent hand hygiene and appropriate use of PPE is essential for any high risk patient
7. 30 day screening to be undertaken if a long stay patient as patient could become positive if certain antibiotics are administered
8. Ensure effective communication occurs if the patient is transferred between clinical areas

Positive result:

1. Follow appropriate flowchart for management of a positive CPE patient