

Document Details		
Title	Prevention and Control of Multi-Resistant Gram Negative Bacteria (MR-GNB) Policy	
Trust Ref No	1429-86899	
Local Ref (optional)		
Main points the document covers	This policy details: Specific Multi-Resistant Gram Negative Bacteria information; Infection Prevention and Control Precautions including advice on isolation, specimens, standard precautions and treatment	
Who is the document aimed at?	Clinical Staff	
Author	Deputy Director of Infection Prevention and Control	
Approval process		
Who has been consulted in the development of this policy?	This policy has been developed by the IPC team in consultation with appropriate senior Operations and Quality managers, Locality Clinical Managers, Specialist Nurses, Medicine Management	
Approved by (Committee/Director)	Infection Prevention and Control Committee – notified to Quality and Safety Committee	
Approval Date	22 January 2024	
Initial Equality Impact Screening	Yes	
Full Equality Impact Assessment	N/A	
Lead Director	Director of Nursing, Clinical Performance, Workforce and IPC	
Category	Clinical	
Sub Category	Infection Prevention and Control	
Review date	January 2027	
Distribution		
Who the policy will be distributed to	IPC Committee Members	
Method	Electronically to IPC Committee Members and available to all staff via the Trust website	
Document Links		
Required by CQC	Yes	
Key Words	Carbapenemase-producing Enterobacteriaceae (CPE); AmpC; Extended Spectrum Beta-Lactamase (ESBL); Klebsiella; Pseudomonas	
Amendments History		
No	Date	Amendment
1		

Contents

Policy on a page	1
1 Introduction	1
2 Purpose.....	1
3 Definitions and Abbreviations	1
4 Duties	2
4.1 Responsibility for Infection Prevention and Control (IPC) outside the immediate scope of this policy	2
5 Multi-Resistant Gram-Negative Bacteria.....	2
5.1 Enterobacteriaceae (Coliforms).....	2
5.2 Extended Spectrum Beta-Lactamase (ESBL)/ AmpC beta lactamases producing coliforms.	2
5.3 Carbapenemase-producing Enterobacteriaceae (CPE).....	3
5.3.1 Treatment of CPE	4
5.4 Pseudomonas	4
5.5 Acinetobacter	4
6 Risk Factors.....	5
7 Route of Spread.....	5
8 Infection Prevention and Control Precautions, including Isolation	5
8.1 Additional Isolation Management for CPE Patients	6
8.2 Management of a Patient Colonised With MR-GNB	7
8.3 Duration of Isolation	7
9 Prevention of Spread.....	7
9.1 Patient Equipment.....	7
9.2 Toilet Facilities	8
9.3 Environmental Cleaning	8
9.4 Flower Vases	8
10 Treatment and Clearance of a Patient with MR-GNB Infection.....	8
10.1 Treatment	8
10.2 Criteria for Clearance after Treatment.....	9
11 Movement of Patients.....	9
11.1 Visiting Other Departments	9
11.2 Ambulance Transportation or Discharge	9
11.3 Transfer or Discharge of Patients with MR-GNB	9
12 Death of a Patient with MR-GNB.....	9
13 Infection Risks within the Patient's Home	9
14 Guidance to Relatives and Carers.....	10
15 Consultation	10
15.1 Approval Process.....	10
16 Dissemination and Implementation.....	10
16.1 Advice	10
16.2 Training.....	10

17	Monitoring Compliance.....	11
18	References	11
19	Associated Documents	12
	Appendix 1 – Rectal swab screening procedure advice for staff.....	13

Policy on a page

ESBL/AmpC

New case:

- Isolate in single room
- Commence treatment if active infection
- Send samples 48 hours post treatment
- Commence twice daily cleaning with Trust approved disinfectant
- Provide the patient with relevant leaflets
- Commence isolation audits
- Patient to remain in isolation unless IPCT advise otherwise
- Weekly testing while an in-patient

History of:

- Admit to isolation in a single room if possible
- Take a urine sample and wound swab if applicable on admission
- Review results; if positive treat as new case

Treatment of urinary tract infection with an MR-GNB for catheterised patients:

- If antibiotics have been commenced change the catheter 24-48 hours post treatment

Policy on a page

CPE

Positive result

- Isolate patient immediately in a single room with ensuite facilities
- Contact IPCT or on call microbiologist to assist with risk assessment if side rooms are full with patients with positive organisms
- Treatment if required MUST be discussed with a Microbiologist
- Wear a long-sleeved fluid repellent gown if risk of extensive splashing instead of an apron
- Full clean with Trust approved disinfectant twice a day to include all equipment
- Use single use/single patient use equipment if possible i.e. BP Cuffs
- Commence isolation audits
- Patient is to remain isolated for duration of stay
- Weekly testing while an in-patient

- Patient has a history of CPE
- Has been nursed in a high risk hospital in the UK e.g. London, Manchester within the last 12 months
- Has been nursed abroad in the last 12 months

Yes, to any of the above:

- Send three rectal swabs 48 hours apart
- Send a urine: state MSU/CSU
- Swabs from manipulated sites i.e. PEG, Tracheostomy
- All swabs/samples MUST be labelled as CPE screen. Specimens to be sent that day including weekends and bank holidays
- Treat as per positive result until all swabs/samples are back. If all are negative, isolation is not required

No to all of the above

No action required

Increased transmission risks:

- Diarrhoea
- Incontinence
- Discharging wounds
- High risk of walking with intent and non-compliance with hygiene practices
- Medical device in place

1 Introduction

Multi-resistant Gram negative bacteria (MR-GNB) are commonly found in the gastrointestinal tract, water and soil. The colon contains large numbers of Gram negative bacilli. Their ability to acquire resistance to antibiotics to virtually all antimicrobial agents presents a therapeutic problem and although they are often colonising organisms, they can become a source of infection to patients. In rare instances, there may be no antibiotic treatment available.

2 Purpose

The policy is intended to provide guidance on preventing and controlling the spread of MRGNB in all care settings provided by Shropshire Community Health Trust (SCHT). The principles contained within this policy reflect best practices and should be adopted by all staff. This policy applies to all services directly provided by SCHT and all clinical staff should familiarise themselves with the policy.

3 Definitions and Abbreviations

Term / Abbreviation	Explanation / Definition
AmpC beta lactamases producing Enterobacteriaceae	Produce enzymes which mediate resistance to a wide variety of B-lactam antibiotics e.g. amoxicillin
CCR	Clinical Case Review
Colonisation	The presence of micro-organisms living harmlessly on a body surface e.g. the skin, mouth, intestines or airway and causing no signs or symptoms of infection.
CPE	Carbapenemase-producing Enterobacteriaceae
CSU	Catheter Specimen of Urine
DIPC	Director of Infection Prevention and Control
ESBL	Extended Spectrum Beta-Lactamase
HCAI	Healthcare Associated Infection
Infection	The presence of micro-organisms in the body causing adverse signs or symptoms.
IPC	Infection Prevention and Control
IPCT	Infection Prevention and Control Team
IV	Intravenous
MRSA	Meticillin-resistant <i>Staphylococcus aureus</i>
MR-GNB	Multi-Resistant Gram Negative Bacteria
MSU	Midstream Specimen of Urine
Opportunistic infections	Where usually harmless microorganisms are able to cause disease in individuals with impaired defences.
PIR	Post Infection Review
PPE	Personal Protective Equipment
RCA	Root Cause Analysis
Rectal swab	A rectal swab is a specimen taken by gently inserting a swab inside the rectum 3-4cms beyond the anal sphincter, rotating gently and removing. Normal saline can be used to moisten the swab prior to insertion. The swab should have visible faecal material to enable organism detection in the laboratory.
SaTH	Shrewsbury and Telford Hospitals

SCHT	Shropshire Community Health Trust
SIP	Service Improvement Plan
Standard Precautions	A set of principles, requiring identification of high risk procedures, minimising exposure to and transmission of microorganisms, including: hand hygiene; managing breaks to the skin; use of PPE; cough etiquette; uniforms; safe disposal of sharps, waste and laundry; management of blood and body fluids.

4 Duties

4.1 Responsibility for Infection Prevention and Control (IPC) outside the immediate scope of this policy

For duties and responsibilities for IPC practices outside the specific scope of this policy, please refer to the IPC Arrangements and Responsibilities Policy on the Staff Zone [SCHT Staff Zone \(shropcom.nhs.uk\)](https://shropcom.nhs.uk).

5 Multi-Resistant Gram-Negative Bacteria

5.1 Enterobacteriaceae (Coliforms)

Enterobacteriaceae, commonly known as Coliforms, are a general term given to a broad group of organisms that normally inhabit the gut but they can survive in all moist areas. They can survive in both aerobic and anaerobic environments. Coliforms, which include *Escherichia coli* (*E.coli*), *Klebsiella* spp., *Enterobacter* spp. *Serratia* spp. and *Proteus* spp., can acquire resistance to virtually any antimicrobial agent.

Coliforms can be transferred to other sites on patients by their own hands or to other patients on the hands of healthcare workers. Coliforms may continue to survive anywhere in the environment if it is constantly wet or moist and such environments provide a common source of organisms. They may also be spread via equipment such as humidifiers, air conditioning units, nebulisers, wash bowls, solutions, ointments, mops and mop buckets or any shared equipment. They often colonise sites where the normal defence mechanisms are breached, such as intravenous cannulas, urinary catheters and endotracheal or tracheostomy tubes.

5.2 Extended Spectrum Beta-Lactamase (ESBL)/ AmpC beta lactamases producing coliforms

ESBL producing coliforms are resistant to all cephalosporins and penicillins, and often also to ciprofloxacin, trimethoprim and sometimes gentamicin. Faecal carriage is prolonged for a number of years which can act as the source of recurrent infection and cannot be cleared. They are usually susceptible to carbapenems such as meropenem and ertapenem although there are rare enzymes which also destroy these antibiotics.

AmpC beta lactamases producing Enterobacteriaceae have a different mechanism of resistance to B-lactam antibiotics. They produce enzymes which mediate resistance to a wide variety of B-lactam antibiotics, e.g. amoxicillin, coamoxiclav, cephalexin, cefotaxime, ceftazidime and ceftriaxone. These enzymes are mainly produced by *E. coli*, *Klebsiella*, and *Enterobacter* species.

Treatment advice: Refer to the Trust Community Antibiotic Policy and/or discuss with Consultant Microbiologist. **Contact via SaTH switchboard 01743 261000.**

5.3 Carbapenemase-producing Enterobacteriaceae (CPE)

Infections due to MR-GNB, including those with extended-spectrum beta-lactamases (ESBL) are often treated with carbapenems (e.g. meropenem, ertapenem and doripenem). However, CPEs produce an enzyme that breaks down carbapenems which means that they cannot be used for treatment of infection.

CPE has spread globally and has been an increasing cause of healthcare associated infections. Their transmission characteristics and pathogenesis resemble those of more sensitive Enterobacteriaceae, but the infections are much more difficult to treat. As with other MR-GNB colonisation is much more common than infection.

Patients with the following risk factors for CPE should be isolated and screened on admission:

- Any patient with a history of CPE.
- Transferred directly from a hospital abroad or from a UK hospital with high rates of CPE.
 - Staff must be alert to the increased risk of infection or colonisation with patient transfers / admissions from high risk overseas countries, including Bangladesh, China, Cyprus, Greece, India, Israel, Italy, North Africa (all), Malta, the Middle East (all), Pakistan, Taiwan, Turkey and the USA
 - High risk areas in the UK include Manchester and London
- Within the last month, have been hospitalised abroad or in a UK hospital with high rates of CPE.
- Any patient known to have been exposed to CPE (infected and colonised).

If a patient is admitted with a known risk factor as described above, screening will be required. The following samples should be taken:

- Rectal Swabs: if it is not possible to obtain a rectal swab, a stool specimen can be sent but must be marked 'CPE screen'. (See Appendix 1 for rectal swab screening procedure).
- Samples from any wounds and device-related sites:
 - Wound swab: any surgical wounds, leg ulcers, breaks in skin or other lesions.
 - Swabs from manipulated sites: lines, cannulae, tracheostomy, percutaneous endoscopic gastrostomy (PEG), drain sites, urine or catheter specimen of urine (CSU).

The IPC team must be informed via telephone that there is a planned admission, high risk patient or patient with a positive CPE result.

All specimens should be labelled on the form clearly as 'CPE screening'. Specimens must be transported to the laboratory the same day; this includes weekends and bank holidays.

Notify the Microbiology laboratory if multiple specimens are being sent.

A sample can be confirmed negative in 24 hours; however a positive sample can take 3-4 days. When a specimen is positive the microbiology laboratory will inform the Public Health England (PHE) Reference Laboratory.

Once a positive specimen is identified, further specimens are not required as the patient is deemed to be colonised with CPE.

5.3.1 Treatment of CPE

IPCT must be informed of a CPE positive specimen.

Because CPE normally live in the gut without causing problems (colonisation) they do not always need to be treated. However, if they cause an infection then treatment may be required. Treatment with antibiotics can be very difficult; it is vital to prevent its spread. Therefore, the positive patient with CPE must be discussed with a Consultant Microbiologist.

Treatment of infection due to CPE MUST be discussed with a Consultant Microbiologist. Contact via SaTH switchboard 01743 261000.

5.4 Pseudomonas

Pseudomonas is commonly found in soil and water. The main pathogenic species is *Pseudomonas aeruginosa*, which can cause infection in burns, wounds and the urinary tract.

Pseudomonas aeruginosa is sometimes found in the bowel of healthy people but rapidly colonises in the gut of hospital patients. After a few weeks in hospital, up to 50% of patients will have the organism in their faeces.

Just like coliforms, moist equipment such as humidifiers, suction catheters and

contaminated fluids constitute a reservoir for pseudomonads, which can provide a source of organisms for the direct colonisation and infection of patients.

Pseudomonads are intrinsically resistant to most antimicrobials but are normally sensitive to aminoglycosides (gentamicin), some quinolones (norfloxacin and ciprofloxacin), certain broad-spectrum penicillins (piperacillin/tazobactam) and ceftazidime. In cystic fibrosis and bronchiectasis, chronic colonisation of the respiratory tract with a subgroup of mucoid strains of these organisms is common and these organisms cause long-term recurrent infection and respiratory damage leading to reduced life expectancy.

Pseudomonas septicaemia is associated with higher mortality than coliform infection but it is unclear if this is due to failure to use appropriate antibiotics in early treatment or the innate virulence of the organisms.

Most cases of *Pseudomonas* represent colonisation and do not require antibiotics. However if treatment is necessary consult microbiology.

Treatment advice: Refer to the Trust Community Antibiotic Policy; contact the IPC Team on **01743 277671** or the Consultant Microbiologist **via SaTH switchboard 01743 261000**.

5.5 Acinetobacter

Acinetobacters are bacteria found widely in the environment and are also part of the normal flora of the skin. They can cause a range of infections in susceptible patients, including pneumonia, UTIs, septicaemia and wound infections. Hospital strains are sometimes resistant to many antibiotics. They also have an affinity for warm, moist places and outbreaks of infection have been related to respiratory equipment and damaged mattresses.

Acinetobacter is able to survive on dry surfaces for several days. Outbreaks of infection have been reported, particularly in intensive care and burn units, where spread between patients has most likely been from the hands of staff.

Treatment advice: contact the IPC Team on 01743 277671 or the Consultant Microbiologist. Contact via SaTH switchboard 01743 261000.

6 Risk Factors

Patients may become infected with MR-GNR either because they have gut or biliary disease or by spread from the perianal and groin area to the urine. Some patients, especially those receiving antibiotics and those who are severely ill, may acquire extensive colonisation of their skin. The skin then acts as a source of organisms for the contamination of staff hands and transmission to other patients.

Colonisation of the stomach and upper respiratory tract commonly follows reduction of the gastric acid barrier by administration of H2 antagonists or proton pump inhibitors. Reflux of intestinal contents, or contaminated nasogastric feeds, or oral suction equipment can be the source of these organisms.

Risk factors for infection by MR-GNB include:

- Inappropriate antibiotic usage particularly broad-spectrum agents
- Prolonged hospital stay
- Admission to Intensive Care Units (ICU), renal or haematology units
- Previously hospitalised abroad
- Long term care facilities have been identified as reservoirs of antibiotic resistance, more so for colonisation

7 Route of Spread

- Person to person contact (directly or indirectly)
- Faecal oral spread
- Hand contact
- Indirect via equipment and or environment

Transmission within hospitals mainly occurs via the hands of healthcare workers which have been contaminated by contact with colonised or infected patients, contaminated surfaces or inanimate objects. Gram-negative bacteria may contaminate the environment around a patient and can survive there for weeks on dry surfaces. Environmental contamination is increased when patients have diarrhoea or colonised skin lesions.

Although MR-GNB can be spread on equipment, the most common route is by contact with an infected or colonised patient, underlining the importance of good hand hygiene before and after direct patient contact and after contact with a patient's environment.

8 Infection Prevention and Control Precautions, including Isolation

Any in-patient, who is found to be infected/colonised with a MR-GNB or has risk factors for the acquisition of CPE, must be placed in isolation. Contact the IPC Team or Consultant Microbiologist immediately if the patient is at risk of or has a positive CPE result.

Alerts for Shropshire Community Health Trust are to be added onto Rio under the alert section for that patient.

*The isolation risk assessment tool can be found in the isolation policy and the IPC page on the Trust website:

- Place patient in a single room, with a contact precautions isolation sign on the door.

- If there is no available single room, a risk assessment should be carried out to ascertain which other patients could share a bay with the patient e.g. not to share with patients who have an invasive device.
- Staff who have any concerns regarding the risk to themselves in exceptional circumstances please seek advice from the IPC team and Occupational Health.
- Patients must be isolated in a single room with the door closed at all times, unless a documented risk assessment is undertaken e.g. due to a risk of falls. In this instance, the door must be closed when there is activity within the room.
- Patients must have their own toilet or designated commode and bathroom facility. If this is not ensuite it must be located where the patient does not have to walk past other patients to gain access, thorough cleaning of bathroom facilities must be completed with disinfectant such as Tristel Fuse.
- If there are a number of patients, they may be cohorted in a bay on the advice of the IPC team, this accommodation must have doors that are closed at all times. A bay with ensuite facilities is preferable. If this is not available then toilet and bathroom facilities must be provided for the sole use of these patients, located where they do not have to walk past other patient areas to access them.
- Strict hand hygiene is of paramount importance and the frequent use of alcohol gel is encouraged. Patients and visitors must be informed of the need for hand hygiene and products/facilities made available.
- Staff such as Allied Health Professionals (AHPs) should see patients after all other patients.
- Staff must wear appropriate PPE as per national guidance.
- Equipment must be kept to an absolute minimum and designated for the sole use of the patient in isolation or cohorted in a bay. This includes a blood pressure monitor, tympanic thermometer, dressing trolley and commode, as required.
- The transfer of patients to other areas and departments must be avoided where possible. If unavoidable, the receiving area and the relevant IPC team must be informed in order to put IPC measures in place.
- Tristel is to be used for cleaning the environment. Equipment may be cleaned with the disinfectant wipe.
- Inform patients and their relatives of infection prevention and control measures and provide them with the Trust's advice leaflet.
- Inform all multidisciplinary staff members including hotel services of the need to adhere to Standard Precautions.
- Linen to be disposed of in a red linen bag with alginate bag lining, to be removed immediately and not left in patient's room.

8.1 Additional Isolation Management for CPE Patients

- All suspected CPE patients, including those previously positive, must be isolated until screening results are known. If the patient is positive on screening for CPE or is a laboratory-confirmed case (colonisation or infection) they should remain in isolation for the duration of their hospital stay. However a risk assessment with IPC should be carried out to ensure their rehabilitation is not compromised.
- Staff must wear gloves and an apron – a risk assessment must be made, dependant on the task e.g. for close contact with the patient or environment where there is a risk of extensive splashing, an apron may not be sufficient to protect the uniform or clothing,

a long-sleeved gown should be worn. Ensure current personal protective equipment national guidance is followed.

- Isolation of the CPE patient may require priority over MRSA– discuss with IPC team or Consultant Microbiologist
- Patients with confirmed or suspected CPE should have designated staff to care for them. Staff caring for cohorted patients in a bay should not care for other patients on the ward. It is accepted that if the ward only has one patient receiving these precautions this may not be practicable. Where possible, infected patients in the cohort bay should be treated last.
- Non-essential staff should be excluded from contact with confirmed or suspected CPE patients e.g. volunteers, hairdressers. Contact the IPC team on 01743 277671 for further advice, if out of hours please contact the on call Microbiologist on 01743 261000.

8.2 Management of a Patient Colonised With MR-GNB

- In many cases a patient may be colonised rather than infected with multi-resistant bacteria e.g. faecal carriage of MR-GNB.
- Infection control management of a patient from whom MR-GNB has been isolated must be based on risk assessment i.e. assessment of the risk of spread from that patient. The factors that need to be considered when assessing the risk of spread to other patients include:
 - The organism isolated
 - The site or specimen from which a MR-GNB has been isolated e.g. wound, sputum, urine
 - Whether the patient has a urinary catheter or is continent of urine and faeces
 - The environment in which the patient is being managed

Examples of higher risk include, diarrhoea leaking wounds; drains and urinary catheters in situ; exfoliating skin problems; coughing and expectorating patients (in sputum positives) or those with the organism present in their urine and experiencing incontinence.

8.3 Duration of Isolation

Isolation should continue until the IPC team advises that the patient can be taken out of isolation. This decision will depend on the results of microbiological samples and risk assessment. Risk factors such as the presence of a urinary catheter and the patient's own level of hand hygiene will be taken into consideration.

9 Prevention of Spread

9.1 Patient Equipment

Where possible, disposable, single use equipment should be used or single-patient use equipment designated for the affected patient. Where it is necessary to use reusable equipment, it must be appropriately decontaminated during use by/with the affected patient and before it can be used on another patient. Refer to the Trust's Cleaning and Disinfection Policy.

Particular attention should be made to pillows and mattresses ensuring they are covered with an impermeable surface that can be cleaned effectively and that they are not damaged in any way. Any damaged or internally soiled mattresses or pillows must be disposed of. A mattress check and cleaning according to the manufacturer's instructions must be performed when the patient is discharged and/or at monthly intervals. Where the facility is available, specialist mattresses should be returned to the manufacturer to be cleaned. Mattresses are of particular

importance: conventional mattress covers should be cleaned and disinfected. Dynamic mattresses should be disassembled, cleaned and disinfected, usually by specialist external contractors.

9.2 Toilet Facilities

An ensuite toilet, a designated toilet, or designated commode is required. Decontaminate after each use in accordance with the Trust's Cleaning and Disinfection Policy. Blockages to the hand wash basin and toilet must be reported urgently.

9.3 Environmental Cleaning

Hotel Services' staff must be informed of cleaning requirements for the isolation room or cohort bay, according to the Trust's Cleaning and Disinfection policy. Rooms must be cleaned at least daily, paying special attention to dust collecting areas and horizontal surfaces. Separate cleaning equipment must be used for isolation rooms. The isolation room(s) should be cleaned last.

Ward staff to ensure cleaning of touch points with Tristel or disinfectant wipes at least twice daily.

When the patient is removed from isolation or is discharged the room must be terminally cleaned using a combined detergent/chlorine based disinfectant. Special attention must be paid to dust collecting areas, horizontal surfaces and floors. Thorough cleaning of the hand wash basin must be completed in the correct way please see cleaning and disinfection policy for method. Curtains must be changed. Only visible splashes on walls need to be removed; full wall-washing is not necessary.

9.4 Flower Vases

There is no infection prevention and control reason why flowers in vases should not be allowed in community hospitals except where patients are nursed in protective isolation. There may be other reasons such as lack of space or too few staff to look after them that may lead wards to ask visitors not to bring in too many flowers. Water for flowers can become contaminated with *Pseudomonas* or other coliforms from the patient or environment but provided this is not spilt, and hand hygiene and standard precautions are observed, such as use of gloves and alcohol hand rub after changing flower water, flowers are of no infection hazard to patients.

10 Treatment and Clearance of a Patient with MR-GNB Infection

10.1 Treatment

Refer to individual organism sections above for treatment advice.

Treatment of infection due to CPE must be discussed with a Consultant Microbiologist. Contact via SaTH switchboard 01743 261000.

Antimicrobial treatment of individual patients with all MR-GNB infection should be based on clinical assessment. Reference to laboratory report for antibiotic sensitivities should also be made to inform prescribing decisions and discussion with Consultant Microbiologist.

When infection is associated with an intravenous (IV) cannula it should be removed and resited if IV therapy is still required.

In the urinary catheterised patient, antibiotic therapy has limited effect on the bacteriuria while the catheter is in situ. If treatment is commenced the catheter should be changed 2448 hours after starting antibiotic.

10.2 Criteria for Clearance after Treatment

Within community services, clearance specimens following treatment may not be required; therefore advice should be sought from the IPC team or the Consultant Microbiologist. Any clearance specimens which are required should be sent at least 48 hours after discontinuing antibiotic therapy.

11 Movement of Patients

11.1 Visiting Other Departments

The adoption of Standard Precautions at all times will allow patients to visit or attend other departments. These patients should spend the minimum time in the department, being sent for only when the department is ready and not left in a waiting area with other patients.

Any colonised or infected lesions should be covered with impermeable dressings wherever possible.

Multi-use items of equipment such as trolleys and wheelchairs should be cleaned with warm water and detergent after use. Surfaces with which the patient has had direct contact should be cleaned and disinfected with Tristel Jet.

Refer to the Trust's Cleaning and Disinfection policy.

Staff collecting the patient from the ward need only wear protective clothing if their assistance is required to have direct contact with the patient. In that case the protective clothing should be removed as usual prior to exiting the room and hands then decontaminated.

11.2 Ambulance Transportation or Discharge

The ambulance service should be notified in advance by ward staff. The ambulance service should have their own policies for transport of patients with communicable diseases.

11.3 Transfer or Discharge of Patients with MR-GNB

Patients can be discharged from hospital when their clinical condition allows. Continued carriage of MR-GNB is not a contraindication for the patients to be discharged home or transferred to a residential or nursing home. The General Practitioner (GP) and other relevant health/social care agencies should be informed of the patient's infection status by ward staff and the details included on the patient's transfer/discharge form.

The ICB IPC Team should be informed when patients are discharged to care homes.

12 Death of a Patient with MR-GNB

The infection prevention and control standard precautions for handling deceased patients are the same as those in life. Any lesion should be covered with impermeable dressings.

13 Infection Risks within the Patient's Home

The presence of the bacteria, which may disappear quite naturally, should not affect the patient or family at home. Usual personal hygiene and household cleaning is sufficient and there are no restrictions to activities or visitors. However, as MR-GNB spreads via the faecal oral route, patients should be advised on the importance of effective hand hygiene before eating and after toileting.

If the hand wash facilities are poor in the patient's home, healthcare workers must take supplies of liquid soap and paper towels or skin cleansing wipes and alcohol hand gel.

14 Guidance to Relatives and Carers

If visitors are visiting other patients in the hospital, they should be requested to visit the infected patient last.

Visitors should perform hand hygiene before and after direct contact with the patient and their environment. They may be asked to wear an apron e.g. if close contact or environmental contamination of clothing is likely. Visitors only need to wear gloves if they are actively involved in the patient's care.

The patient should be given a copy of the patient information leaflet on MR-GNB – available on the IPC page of the Trust website [here](#)

15 Consultation

This policy has been developed by the IPC team in consultation with appropriate Locality Clinical Managers, advisors/specialists (e.g., Medical Advisor, Specialist Nurses, Medicine Management), PHE and IPC Governance Meeting members.

A total of three weeks consultation period was allowed and comments incorporated as appropriate.

15.1 Approval Process

The IPC Committee members will approve this policy and its approval will be notified to the Quality and Safety Committee.

16 Dissemination and Implementation

This policy will be disseminated by the following methods:

- Managers informed via Datix who then confirm they have disseminated to staff as appropriate
- Awareness raising by the IPC team
- Published to the Staff Zone of the Trust website

The web version of this policy is the only version that is maintained. Any printed copies should therefore be viewed as 'uncontrolled' and as such, may not necessarily contain the latest updates and amendments. When superseded by another version, it will be archived for evidence in the electronic document library.

16.1 Advice

Individual Services' IPC Link staff act as a resource, role model and are a link between the IPC team and their own clinical area and should be contacted in the first instance if appropriate.

Further advice is readily available from the IPC team or the Consultant Microbiologist.

16.2 Training

Managers and service leads must ensure that all staff are familiar with this policy through IPC induction and update undertaken in their area of practice.

In accordance with the Trust's mandatory training policy and procedure the IPC team will support/deliver training associated with this policy. IPC training detailed in the core mandatory training programme includes Standard Infection Control Precautions and details regarding key IPC policies. Other staff may require additional role specific essential IPC training, as identified between staff, their managers and / or the IPC team as appropriate. The systems for planning,

advertising and ensuring staff undertake training are detailed in the Mandatory Training Policy and procedure. Staff who fail to undertake training will be followed up according to the policy.

Further training needs may be identified through other management routes, including Clinical Case Review (CCR), Root Cause Analysis (RCA) and Post Infection review (PIR), following an incident/infection outbreak or following audit findings. Additional ad hoc targeted training sessions may be provided by the IPC team.

17 Monitoring Compliance

Compliance with this policy will be monitored as follows:

- Hand hygiene will be audited in accordance with the Hand Hygiene Policy and via peer Hand Washing Assessments
- Cleaning standards within Community Hospitals will be monitored in accordance with the Publicly Available Specification (PAS) 5748 framework
- Environmental and patient equipment cleaning will be monitored as part of local routine cleanliness audits
- Audited locally using the HCAI Prevention audits undertaken by the IPC team and by staff as Self- audits as part of the IPC audit programme
- Additional periodic auditing and self-audits by clinical teams
- The IPC Governance Meeting will monitor compliance of the cleanliness audit scores and the IPC team audit programme

Numbers of staff undertaking IPC training, which includes Standard Infection Control Precautions will be monitored by the Organisational Development and Workforce Department

As appropriate the IPC team will support Services' Leads to undertake IPC CCRs/RCAs/PIRs. Managers and Services' Leads will monitor subsequent service improvement plans and report to the IPC Governance Meeting.

Knowledge gained from CCR/RCA/PIR and IPC audits will be shared with relevant staff groups using a variety of methods such as reports, posters, group sessions and individual feedback.

The IPC team will monitor IPC related incidents reported on the Trust incident reporting system and, liaising with the Risk Manager, advise on appropriate remedial actions to be taken.

18 References

Aranega-Bou. P, George. R.P, Verlander. N.Q, Paton.S, Bennett.A, Moore.G, TRACE investigators Group (2019), Carbapenem-resistant Enterobacteriaceae dispersal from sinks is linked to drain position and drainage rates in a laboratory model system, Journal of Hospital Infection 102 pp 63-69

Department of Health (2012) Infection Control Prevention of healthcare-associated Infection in Primary & Community Care. London. National Institute of Clinical Excellence.

Fraise A P and Bradley C (Editors) (2009) Ayliffe's Control of Health-care Associated Infection. (Fifth Edition). Hodder Arnold, London.

Health Protection Agency (2005) Investigations into multi-drug resistant ESBL producing *Escherichia coli* strains causing infections in England. Health Protection Agency

Health Protection Agency (2006) Cookson, B, Gergonne B, Barrett S, et al. Working party guidance on the control of multi-resistant *Acinetobacter* outbreaks

Health Protection Agency (2011) Advise on Carbapenemase Producers:

Recognition, infection control and treatment

Public Health England (2014) Patient Safety Alert: Addressing rising trends and outbreaks in carbapenemase-producing Enterobacteriaceae. Available at www.england.nhs.uk/patient-safety

Public Health England (2014) UK Standards for Microbiology Investigations. Laboratory Detection and Reporting of Bacteria with Carbapenemase-Hydrolysing β lactamases (Carbapenemases)

Public Health England (2014) Addressing Carbapenemase-producing

Enterobacteriaceae – Risk Prioritisation of Infection Prevention and Control (IP&C) Measures, Screening and Isolation – Roll-out Plan

Public Health England (2015) Toolkit for managing carbapenemase-producing

Enterobacteriaceae in non-acute and community settings. [Link here](#)

Tucker. A, George.R, Welfare.W, Cleary.P, Cawthorne.J, Dodgson.A (2019) screening for carbapenemase-producing Enterobacteriaceae in previous carriers readmitted to hospital: evaluation of a change in screening policy (2019) Journal of Hospital Infection 103 pp156-159

Wilson. A P R, Livermore. D M, Otter. J A, Warren. R E, Jenks.P, Enoch. D A, Newsholme. W, Oppenheim. B, Leanord. A, McNulty. C, Tanner. G, Bennett. S, Cann. M, Bostock. J, Collins. E, Peckitt. S, Ritchie. L, Fry. C, Hawkey. P, (2016) Prevention and control of multi-drug-resistant Gram-negative bacteria: recommendations from a joint working party, Journal of Hospital Infection, 92, S1S44

19 Associated Documents

This policy should be read in conjunction with SCHAT policies:

- Cleaning and Disinfection Policy
- Hand Hygiene Policy
- Indwelling Urinary Catheter Policy
- Isolation Policy
- Linen handling and Laundry Policy
- Standard Infection Control Precautions: Hand Hygiene and Personal Protective Equipment Policy
- Uniform and non-uniform Policy
- Waste Management Policy
- Public Health England (May 2017), Preventing healthcare associated Gram-negative bloodstream infections: an improvement resource

21 Appendices

Appendix 1 – Rectal swab screening procedure advice for staff

A rectal swab is a laboratory test used to isolate and identify organisms in the rectum that can cause gastrointestinal symptoms and disease.

Gain the patients consent by explaining reason for procedure. Check for any history of bowel/rectal problems; seek medical advice if unsure.

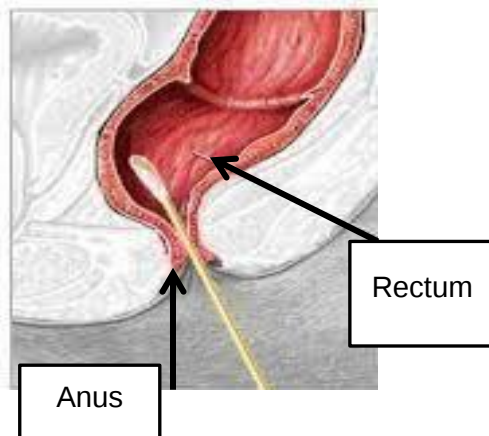
Equipment required:

- Apron
- Non-sterile gloves
- Sterile swab with transport medium
- Appropriate documentation form



Pre-procedure

1. Explain the procedure to the patient and ensure they understand what it involves for them to give valid consent.
2. Ensure the procedure is carried out in a suitable location to maintain privacy and dignity.
3. Ensure an accurate microbiology form is completed/printed to include correct patient details and the organism being screened i.e. CPE.
4. Label the transport medium and attach the adhesive label from the printed form.
5. Healthcare worker to decontaminate their hands thoroughly then don apron and gloves.
6. Pass just the tip of the swab with care through the anus into the rectum and rotate gently (this is to avoid trauma and ensure a rectal not an anal sample is obtained)



Post procedure

1. Remove cap from the transport tube.
2. Carefully place the swab into the plastic transport medium and ensure the cap is firmly secure to avoid contamination of the swab and maintain viability of the sample.
3. Remove gloves and apron and wash hand with soap and water.
4. Attach the label from the printed form to the transport medium and then place both items into the microbiology envelope.
5. Document the action within the patient's notes.