GP 07

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NHS

MDROs INCLUDING ESBL AND CPO

Community Infection Prevention and Control Policy for General Practice

(also suitable for adoption by other healthcare providers, e.g. Dental Practice, Podiatry)

MDROs including ESBL and CPO

(Multidrug-resistant organisms including Extended-Spectrum Beta-Lactamase and carbapenemase-producing organism)

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GP 07

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Please note that the internet version 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.

This document has been adopted as a Policy by:

Organisation: ..... …

Signed: .....

Job Title: .....

Date Adopted: .....

Review Date: .....

If your organisation would like to exclude or include any additional points to this document, please include below. Please note, the Community IPC Team cannot endorse or be held responsible for any addendums.

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MDROs INCLUDING ESBL AND CPO

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MDROs INCLUDING ESBL AND CPO (MULTIDRUG-RESISTANT ORGANISMS INCLUDING EXTENDED-SPECTRUM BETA-LACTAMASE AND CARBAPENEMASE-PRODUCING ORGANISM)

1. Introduction

Multidrug-resistant organisms (MDROs) are microorganisms that have become resistant to the drugs normally used to treat them.

MDROs include bacteria, fungi, viruses and parasites, however this policy will focus on bacteria only.

Antimicrobial resistance is the ability of bacteria to resist the effects of antibiotics normally used to treat them, so the bacteria are not killed, this is known as ‘antibiotic resistance’.

Antibiotic resistance makes infections difficult to treat. It may also increase the length of severity of illness, the period of infection, adverse reactions (due to the need to use less safe alternative drugs), length of hospital admission and overall costs.

Numerous bacteria are normally found in the bowel. Not all are resistant to antibiotics and not all will cause serious illness. Species of bacteria commonly found include *Escherichia coli* (*E. Coli*), Klebsiella, Proteus, Pseudomonas Enterobacter and Acinetobacter. Collectively these bacteria are referred to as Gram-negative bacilli (GNB). These bacteria, under certain circumstances, can become resistant to antibiotics and may require infection control management. They are referred to as multidrug-resistant organisms (MDROs), formerly known as multi-resistant Gram-negative bacteria (MRGNB).

Some MDROs contain beta-lactamases (**extended spectrum beta lactamases** or ESBL's) which can destroy/inactivate even broad spectrum antibiotics, such as cefuroxime and cefotaxime.

Newer MDROs known as MDRO CPO (**carbapenemase-producing organism**), formerly known as CPE (carbapenemase-producing *Enterobacteriaceae*), have recently been identified. These resistant strains of bacteria produce an enzyme that destroys the powerful group of antibiotics, such as imipenem, which are used in hospitals. Until now, these have been the ‘last resort’ antibiotics medics have relied on when other antibiotics have failed to treat infections.

Other MDROs include Gram-positive bacteria (for example 'Vancomycin-resistant Enterococcus (VRE), MDRO Tuberculosis (TB), caused by the bacterium *Mycobacterium tuberculosis* and Meticillin resistant *Staphylococcus aureus (MRSA),* refer to the 'MRSA Policy for General Practice'.

The increasing prevalence of antibiotic resistant microorganisms, especially those with multiple resistance, is an international concern. In November 2016, the UK government announced plans to reduce infections across the NHS. This included plans to reduce the number of healthcare associated Gram-negative bloodstream infections by 50%, by financial year 2020 to 2021. In response to this, Public Health England expanded their collection of Gram-negative blood stream infections from *E. coli* bacteraemia (mandated to be reported in July 2011) to include Pseudomonas aeruginosa and Klebsiella spp.

2. Key points

- Bacteria commonly achieve antibiotic resistance by producing an enzyme, beta-lactamase. This counters the effect of specific antibiotics.
- The genes that carry antibiotic resistance can spread to other bacteria and control of MDROs requires comprehensive infection control and antibiotic prescribing policies and stewardship.
- Many MDROs are likely to be passed on via the faecal oral route.
- MDROs can cause urinary tract infections, pneumonia and surgical site infections. However, the majority of patients with MDROs are colonised which means bacteria are present, but they do not have symptoms of infection. MDROs are usually identified in stool and urine specimens. If the patient does not have active infection, i.e. they are colonised, antibiotic treatment is not required.
- Patients who are colonised with a MDRO do not usually pose a risk to healthy people, but may be a risk to those who are vulnerable.
- People at increased risk of being colonised or infected with a MDRO are:
    - Those who in the last 12 months have:
        - Been an inpatient in any hospital, UK or abroad
        - Had multiple hospital treatments, e.g. dialysis, or have had cancer chemotherapy
        - Been previously identified as CPO positive (includes household and care home contacts of known cases)
        - Been admitted to a hospital augmented care or high-risk unit

    Or:

    - Based on local epidemiology:
        - Are immunosuppressed

- Have had previous exposure to broad-spectrum antibiotic courses, particularly carbapenems in last month
- Are resident in 'Long Term Care Facilities', particularly where higher levels of interventional care are provided, e.g. long-term respiratory ventilation

3. Routes of transmission

- Direct spread via hands of staff and patients.
- Care equipment that has not been appropriately decontaminated.
- Environmental contamination.

Although MDROs can be spread via care equipment, the most common route is by contact with an infected or colonised patient. Therefore, the importance of good hand hygiene before and after direct contact with a patient is essential.

4. Treatment

Giving antibiotics to asymptomatic (colonised) patients to clear the organism is not recommended.

Treatment is only advocated for those patients who have clinical signs of infection. If required, advice on antibiotic treatment can be obtained from your local Consultant Microbiologist.

5. Clearance specimens

MDROs clearance specimens, including faecal samples or swabs for CPO, are not required. Repeat specimens should only be taken if the patient has clinical signs of an infection, e.g. pyrexia, pain on micturition.

6. Precautions for MDROs

- Standard infection control precautions and, where required, transmission based precautions (SICPs and TBPs) should be used for patients confirmed or suspected to have a MDRO. Colonisation with a MDRO may be long term, therefore SICPs and TBPs should be followed by all staff at all times, to reduce the risk of transmission of infection. Refer to the 'SICPs and TBPs Policy for General Practice'.

- When a patient is confirmed or suspected to have a CPO infection or colonisation, staff should apply contact TBPs on a risk assessment basis, particularly where there is a presence of wound drainage, diarrhoea or faecal incontinence. In these situations, there is increased potential for environmental contamination and subsequent risk of transmission.
- For all patients with profuse diarrhoea, appropriate medical management and enhanced cleaning of any toilet facilities used by the patient should be undertaken.
- Patients with a MDRO attending for a procedure, e.g. wound dressings, where possible, should be scheduled at the end of the session to allow for environmental cleaning.
- Prior to any examination or treatment, a risk assessment to determine the personal protective equipment (PPE) required should be undertaken, e.g. wear disposable gloves and apron when in contact with a patient's body fluids, e.g. wound, urine. These should be disposed of after each procedure and hands cleaned. Refer to the 'PPE Policy for General Practice'.
- If a patient is suspected or known to have a CPO infection or colonisation, long sleeved fluid repellent gowns should be worn if there is a risk of extensive splashing of body fluids to the uniform, e.g. dealing with an ileostomy.
- Hand hygiene is essential before and after direct contact with a patient using liquid soap and warm running water or alcohol handrub.
- Waste contaminated with body fluids should be disposed of as infectious waste, refer to the 'Safe disposal of waste Policy for General Practice'.

7. Environmental and care equipment cleaning

If a patient has attended for an examination or procedure, reusable medical devices, care equipment, the treatment couch and immediate area, should be cleaned and disinfected, refer to the 'Safe management of care equipment Policy for General Practice' and 'Safe management of the care environment Policy for General Practice'.

8. Referral or transfer to another health or social care provider

- If it is necessary to refer or transfer a patient to another health or social care provider, e.g. ambulance service, hospital, they should be informed of the patient's MDROs status prior to the transfer. This will enable a risk assessment to be undertaken to determine the appropriate infection prevention and control (IPC) measures to be taken, e.g. transported without other patients, isolated on admission.

- Staff preparing to transfer a patient to another health or social care provider should complete the Inter-Health and Social Care Infection Control Transfer Form (see Appendix 1) or patient passport. This should accompany patient. Refer to the 'Patient placement and assessment for infection risk Policy for General Practice'.
- SICPs and TBPs should be followed whenever transferring a patient, whether they have a confirmed infection or not.
- The completed transfer documentation should be supplied to the receiving health or social care provider and a copy filed in the patient's notes.
- Ensure that care equipment used to transfer the patient, e.g. wheelchair, is decontaminated in accordance with the 'Safe management of care equipment Policy for General Practice'.

9. Information for patients and family

Information about MDROs and CPO should be given to patients and/or family. Information and factsheets are available to download at www.infectionpreventioncontrol.co.uk.

10. Infection Prevention and Control resources, education and training

The Community Infection Prevention and Control (IPC) Team have produced a wide range of innovative educational and IPC resources designed to assist your Practice in achieving compliance with *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and relation guidance* and CQC registration requirements.

These resources are either free to download from the website or available at a minimal cost covering administration and printing:

- 25 IPC Policy documents for General Practice
- 'Preventing Infection Workbook: Guidance for General Practice'
- 'IPC CQC inspection preparation Pack for General Practice'
- IPC audit tools, posters, leaflets and factsheets
- 'IPC Bulletin for GP Practice Staff'

In addition, we hold educational study events in North Yorkshire and York and can arrange bespoke training packages and 'Mock IPC CQC Inspections'. Prices vary depending on your requirements and location.

Further information on these high quality evidence-based resources is available at www.infectionpreventioncontrol.co.uk.

11. References

Department of Health (2015) *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance*

NHS England and NHS Improvement (March 2019) *Standard infection control precautions: national hand hygiene and personal protective equipment policy*

Public Health England (2020) *Framework of actions to contain carbapenemase-producing Enterobacterales* *www.gov.uk/government/publications/actions-to-contain-carbapenemase-producing-enterobacterales-cpe*

Public Health England (2017) *Gram-negative bacteria: prevention, surveillance and epidemiology* *www.gov.uk/guidance/gram-negative-bacteria-prevention-surveillance-and-epidemiology#diagnosis-prevention-and-management*

12. Appendices

Appendix 1: Inter-Health and Social Care Infection Control Transfer Form

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Inter-Health and Social Care Infection Control Transfer Form

The *Health and Social Care Act 2008: Code of Practice on the prevention and control of Infection and related guidance* (Department of Health 2015), states that "suitable accurate information on infections be provided to any person concerned with providing further support or nursing/medical care in a timely fashion". This form has been developed to help you share information with other health and social care providers. The form should accompany the patient and, where possible, a copy filed in the patient's notes.

Patient Name: ..... Address: ..... NHS number: ..... Date of birth: ..... Patient's current location:	GP Name and contact details:

Receiving facility, e.g., hospital ward, hospice: .....

If transferred by ambulance, the service has been notified: Yes ☐ N/A ☐

Is the patient an infection risk:
Please tick most appropriate box and give details of the confirmed or suspected organism

☐ Confirmed risk Organisms: .....
☐ Suspected risk Organisms: .....
☐ No known risk

Patient exposed to others with infection, e.g., D&V, Influenza: Yes ☐ No ☐ Unaware ☐

If yes, please state: .....

If the patient has a diarrhoeal illness, please indicate bowel history for last week, if known, (based on Bristol Stool Form Scale):

.....

Is diarrhoea thought to be of an infectious nature? Yes ☐ No ☐ Unknown ☐

Relevant specimen results if available

Specimen:				
Date:				
Result:				

Treatment information:

Is the patient aware of their diagnosis/risk of infection? Yes ☐ No ☐

Does the patient require isolation? Yes ☐ No ☐

If the patient requires isolation, phone the receiving facility in advance: Actioned ☐ N/A ☐

Additional information:

Name of staff member completing form: .....

Print name: .....

Contact No: ..... Date .....

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