



St. Helens Council



Shaping a healthier Warrington
Analysis Improvement Protection

PROCEDURE FOR MANAGEMENT OF PATIENTS WITH MULTI DRUG RESISTANT ORGANISMS

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1. Introduction

Antibiotic / Antimicrobial resistance is the ability of microbes to resist the effects of drugs – that is, the germs are not killed, and their growth is not stopped. Although some people are at greater risk than others, no one can completely avoid the risk of antibiotic-resistant infections. Infections with resistant organisms are difficult to treat, requiring costly and sometimes toxic alternatives. Many existing antimicrobials are becoming less effective as bacteria, viruses and fungi are adapting and becoming resistant to medicines.

Bacteria will inevitably find ways of resisting the antibiotics developed by humans, which is why aggressive action is needed now to keep new resistance from developing and to prevent the resistance that already exists from spreading.

The use of antibiotics is the single most important factor leading to antibiotic resistance around the world. Simply using antibiotics creates resistance. These drugs should only be used to manage infections.

There are few public health issues of greater importance than antimicrobial resistance (AMR) in terms of impact on society. This problem is not restricted to the UK. It concerns the entire world and requires action at local, national and global level. AMR cannot be eradicated but a multi-disciplinary approach involving a wide range of partners will limit the risk of AMR and minimise its impact for health, now and in the future.

The harsh reality is that infections are increasingly developing that cannot be treated. The rapid spread of multi-drug resistant (MDR) bacteria means that we could be close to reaching a point where we may not be able to prevent or treat everyday infections or diseases.

Many existing antimicrobials are becoming less effective. Bacteria, viruses and fungi are adapting naturally and becoming increasingly resistant to medicines used to treat the infections they cause. Inappropriate use of these valuable medicines has added to the problem.

2. Scope

This procedure applies to all staff working in health care settings and social care settings in the community.

3. What are Multi Drug Resistant Organisms?

3.1 Multi-Resistant Gram-negative Bacteria

Common multi-resistant gram-negative bacteria can include:-

- Escherichia coli
- Enterobacter species
- Klebsiella species
- Pseudomonas aeruginosa resistant to more than 2 first line antibiotics
- Acinetobacter baumannii

3.2 Extended spectrum beta lactamase producers (ESBLs)

These organisms have an ability to produce enzymes (extended spectrum beta lactamases) [ESBLs] that can destroy almost all available cephalosporin antibiotics.

3.3 Multi-Resistant Acinetobacter

Multi-resistant Acinetobacter is defined as Acinetobacter isolates that are resistant to any aminoglycoside antibiotic (e.g. Gentamicin) and any third generation cephalosporin antibiotic (e.g. Ceftazidime, Cefotaxime).

3.4 Glycopeptide/Vancomycin Resistant Enterococci

Enterococci are bacteria that are commonly found in the bowels of most humans. Gastrointestinal colonisation with VRE may persist for long periods of time and serves as a reservoir for transmission of VRE to other patients. There are many different species of Enterococci, but only a few have the potential to cause infections in humans. More than 95% of Enterococcal infections are caused by two species:-

- Enterococcus faecalis
- Enterococcus faecium

3.5 Carbapenemase producing Enterobacteriaceae (CPE)

Enterobacteriaceae are a large family of bacteria that usually live harmlessly in the gut of all humans and animals. However, these organisms are also some of the most common causes of opportunistic urinary tract infections, intra-abdominal and bloodstream infections. They include species such as:-

- Escherichia coli,
- Klebsiella spp.
- Enterobacter spp.

Carbapenems are a valuable family of antibiotics normally reserved for serious infections caused by drug-resistant Gram-negative bacteria (including Enterobacteriaceae). These antibiotics are used in hospital settings.

Carbapenemases are enzymes that destroy carbapenem antibiotics, conferring resistance. They are made by a small but growing number of Enterobacteriaceae strains. There are different types of carbapenemases, of which the following are most commonly seen.

- KPC,
- OXA-48,
- NDM
- VIM .

Guidance for the management of patients with CPE's on the community is available in the tool kit published by Public Health England.

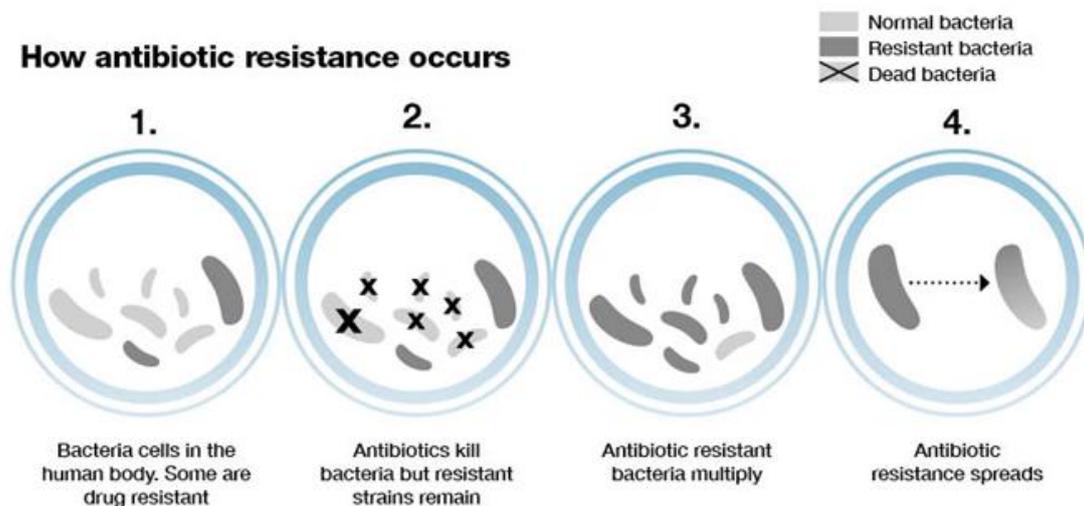
Carbapenemase-producing Enterobacteriaceae: non-acute and community toolkit

See Link <https://www.gov.uk/government/publications/carbapenemase-producing-enterobacteriaceae-non-acute-and-community-toolkit>.

Patients in hospital are risk assessed and screened if indicated; patients in the community are not screened however we may be aware of patients in the community that have been screened in hospital and identified as being colonised or infected with CPE.

Patients with CPE are provided with an alert card which they should show to healthcare professionals especially if admission to hospital is required. If patients known to be colonised with CPE need admission to hospital from care home please ensure their status is recorded on the transfer documentation.

4. How antibiotic resistance occurs



5. Risk factors for developing drug resistant organisms.

People who are healthy are at low risk for developing Multi drug resistant infections. The risk factors for acquiring Multi drug resistant organisms include:

- An existing severe illness
- An underlying disease or chronic condition
- Receiving dialysis

- Previous use of antibiotics
- Invasive procedures or the use of medical devices (e.g., urinary catheters, endotracheal tubes, vascular catheters)
- Repeat contact with the healthcare system particularly if the resident has had admissions to healthcare organisations which are known to be high risk for multi drug resistant organisms.
- Previous colonisation with multi drug resistant organisms.
- Advanced age (65 and older)
- Taking immunosuppressant drugs
- Complex surgeries (e.g., open abdominal and chest surgeries)
- Chemotherapy for cancer treatment

6. Management of Patients with Multi drug resistant organisms

6.1 Standard Infection Control Precautions.

It is important that health care workers adhere to standard infection control precautions for all patients at all times to reduce the risk of transmission of infections. Patient identified as having multi drug resistant organisms may require additional precautions i.e. isolation and this should be discussed with the Community Infection Control team on 01925 867707.

6.2 Hand Hygiene

Hand hygiene is the single most effective way of preventing the spread of infections. All health care staff should :-

- Observe the World Health Organisation 5 moments for Hand Hygiene and decontaminate the hands using soap and water or alcohol gel:-
 1. Before touching a patient
 2. Before clean/aseptic procedure
 3. After body fluid exposure risk
 4. After touching a patient
 5. After touching a patient's environment
- Have access to adequate hand washing facilities i.e. Liquid soap and paper towels.
- Always use the correct technique when using alcohol gel or hand washing with soap and water
- Be "bare below the elbow" whenever on duty. i.e. no watches or wrist jewellery, no rings other than a plain non stoned wedding band, no acrylic nails, nail extensions or nail varnish, no long sleeve cardigans.

6.3 Environmental Precautions

Many multi drug resistant organisms can survive for long periods on environmental surfaces in Care homes and in patient homes.

- Cleaning schedules should be in place and environmental cleanliness should be monitored.

- There should be meticulous attention to environmental cleaning and disinfection with a cleaning agent which contains sodium hypochlorite. Particular attention should be paid to surfaces that are frequently touched such as toilets, door handles and work surfaces.
- Use colour coded disposable cloths, mop heads and mop buckets and ensure that the national colour coding poster is displayed in the cleaning cupboard.
- Ensure that the resident's care environment is uncluttered to facilitate high standards of cleaning and decontamination
- In Care homes terminal cleaning of a resident's room should be carried out for all residents who have transferred or discharged. Terminal cleaning should include systematic cleaning of all horizontal and vertical surfaces from high level to low level. All soft furnishing i.e. curtains, bedspreads and cushions should be removed and cleaned appropriately.

6.4 Decontamination of Equipment

- Processes should be in place in the care home setting to ensure that any communal equipment is decontaminated after each use and stored appropriately to reduce the risk of transmission of microorganisms from one resident to another.
- If a resident is in isolation, and they do not have en-suite facilities a commode which is used solely for that resident should be kept in the residents room.
- All equipment should be decontaminated according to manufacturer's guidance.

6.5 Isolation

• Isolation precautions are not required for patients living in their own homes. Patients who are resident in care homes may need to be isolated depending on whether the patient is infected or colonised, the type of microorganism and should include assessment of other factors.

- Isolation may be required for some residents who may pose a risk for the transmission of multi drug resistant organism. A risk assessment should be completed to identify if the resident has any history of diarrhoea, draining wounds, incontinence of urine or faeces or copious respiratory secretions.
- Specialist advice should be sought from the Community Infection Control team on 01925 867707

6.6 Residents and Visitors.

- A patient who is found to be newly-colonised or infected with an multi drug resistant organism should be informed about his colonisation/infection status by the nurse in charge. The resident should be provided with information about multi drug resistant organisms.
- The importance of hand hygiene should be explained to residents visitors and they should be encouraged with hand washing and the use of alcohol hand gel.
- If basic good hygiene precautions are followed, residents who are colonised with multi drug resistant organisms are not a hazard to other residents, family members or staff in the care home.

7. Transfer of patient with Multi Drug Resistant Organisms.

- Patient's that are transferred from Secondary care to Care facilities and vice versa should have their infection status clearly communicated on their discharge/transfer summary.
- The Acute Infection Control team always inform the Community Infection control team about the status of patients who have been diagnosed with multi drug resistant organisms and is transferring from hospital into the community.
- Residents in care facilities should have any history of multi drug resistant organisms clearly recorded on their care records. Advice should be sought from the Infection Control team if care home staff need advice/support regarding the care of their residents.

8. Consultation

Public Health Infection Control Group members
Community Infection control Specialist nurses.
Acute Hospital Infection control Nurse Specialists
Lead Nurses for Warrington, Halton and St Helens CCG.

9. References

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World Health Organisation, (2015) Anti-Microbial Resistance Fact Sheet 194 .

<http://www.who.int/mediacentre/factsheets/fs19>

Appendix 1 – Care plan for the management of residents with MDRO

Date	No	Identified issue	Action to be taken	On-going assessment/r eview date	sign	comments
	1	Requirement for single room Accommodation	<ul style="list-style-type: none"> When an individual is infected with VRE they should be placed in a single room with en-suite facilities. If an en-suite room is not available, the individual should be placed in a single room with a designated commode with easy access to hand washing facilities. Standard infection control precautions apply. 			If isolation is not deemed possible, the reasons must be fully documented in the risk assessment and alternative measures for preventing spread of infection identified, for example providing a designated carer and instituting enhanced cleaning
	2	Hand hygiene to prevent cross infection	<ul style="list-style-type: none"> Ensure hand hygiene facilities are offered to patient especially after using toilet and prior to eating Hand hygiene must be performed with liquid soap and water – <ul style="list-style-type: none"> - After giving personal care - After bed making - After removing protective clothing Use gloves to reduce risk of hand contamination 			Hand wash basin in each resident's room, and wall mounted liquid soap and paper towels (for staff.)
	3	Personal Protective Equipment (PPE)	<ul style="list-style-type: none"> Disposable gloves and aprons must be worn for all direct contact with resident's infected wound and disposed of as clinical waste. For performing personal care Whilst making bed 			

			<ul style="list-style-type: none"> • Hands must be washed following removal of PPE 			
	4	Decontamination of resident's equipment	<ul style="list-style-type: none"> • ALL commodes/bedpans must be washed with disposable cloth and detergent immediately after use (in sluice or decontamination room) and disinfected and stored dry. • Crockery /cutlery/medicine pots can be washed in the normal way 			
	5	Required Specimens	<ul style="list-style-type: none"> • Infection Control Nurses will advise 			
	6	Laundry	<ul style="list-style-type: none"> • No need to segregate if wash temperature 60 degrees C or more, but wash separately if washed at a temperature below 60 degrees C. 			Wash at the highest temperature if the fabric allows.
	7	Waste	<ul style="list-style-type: none"> • Dispose as domestic waste unless categorized as clinical waste. 			
	8	Environmental cleaning	<ul style="list-style-type: none"> • Avoid having extraneous equipment or large quantities of disposable items in the individual's room. • Use a designated cleaning sink to discard patient wash water, body fluids or secretions, or when cleaning/disinfecting equipment used with a colonised or infected individual. Using a hand wash basin poses a high risk of environmental contamination. • Domestic/cleaner should clean daily using a disposable cloth and a hypochlorite based product. 			
	9	Visitors	<ul style="list-style-type: none"> • No restrictions • Hand hygiene on entering and leaving the home 			Duty of candour to inform relatives of resident's status, this should be discussed with resident and relatives at point of diagnosis, usually hospital. If unsure contact infection

						control team.
	10	Personal Clothing	<ul style="list-style-type: none"> There are no special washing instructions. Relatives should wash their hands when leaving the establishment. 			
	11	Transfer to another department or hospital	<ul style="list-style-type: none"> Prior to transfer the receiving area must be informed of the resident's VRE status by filling in the Infection Control Transfer form. 			
	12	Indwelling devices or wounds	<ul style="list-style-type: none"> Wound with infection needs to be dressed as per wound care plan and be covered at all times. A discharging wound should be secured with an impermeable dressing and any environmental contamination, from the wound or other body fluids, cleaned immediately 			

** Assistance with a risk assessment (including consideration of the impact on the individual's social and psychological wellbeing) should be sought from your usual IP&C team. Following a risk assessment, if it is decided that an individual requires short-term isolation, daily reviews and defined criteria for when isolation should end (normally when the infection has cleared) should be considered. If isolation is not deemed possible, the reasons must be fully documented in the risk assessment and alternative measures for preventing spread of infection identified, for example providing a designated carer and instituting enhanced cleaning.

At all risk levels ensure the following:

- **standard precautions are maintained at all times**
- **effective environmental hygiene** : prevention of faecal and environmental contamination is crucial; remain alert to episodes that risk direct transmission to others and/or environmental contamination; ensure timely and thorough cleaning
- **hygiene advice to individual and family/contacts** : it is important to inform individuals and those around them to ensure they take appropriate personal hygiene measures to prevent the spread of infection, especially when using the toilet

Risk assessments must include consideration of the care environment, eg nursing care setting, specialist or general rehabilitation, haemodialysis unit, EMI, dementia care unit, community hospital or hospice, mental health trust, residential care, domiciliary care or detention centre/prison.

If the individual is colonised: single room with en-suite facilities including toilet or designated commode is recommended; no curtailment of communal activities is required where standard precautions and effective environmental hygiene are being maintained and there is no risk of infecting others.

If the individual is infected: conduct a risk assessment with usual IP&C advisor and/or PHE centre to discuss possible isolation (with defined end-of-isolation criteria); consider the mental and physical health and wellbeing of the individual when deciding to isolate.

Always communicate the positive status of an individual appropriately when transferring the individual between care settings

CARE NEEDS	GUIDANCE for RISK ASSESSMENT
<p>HIGH RISK</p> <p>Eg patient has: diarrhoea, discharging wound, long term ventilation, confusion/dementia, device(s) in situ, undergoing invasive procedures, smearing or 'dirty protests'</p>	<ul style="list-style-type: none"> • identify if there is an immediate risk of infecting others • discuss management with GP/clinician in charge, IP&C nurse • consider the mental and physical health and wellbeing of the individual • consider if the individual requires supervision • consider options to facilitate terminal cleaning and disinfection and minimise the risk of spread of infection where possible by: <ul style="list-style-type: none"> • giving individuals an end of list appointment • using mobile equipment away from others
<p>MEDIUM RISK</p> <p>Eg patient requires: assistance with hygiene, mobility or physical rehabilitation</p>	<ul style="list-style-type: none"> • no immediate risk of infecting others identified • standard precautions are maintained • hygiene advice is provided to individual and family/contacts as appropriate
<p>LOW RISK</p> <p>Eg patient is independent and self-caring</p>	<ul style="list-style-type: none"> • effective environmental hygiene • if unsure, contact your usual IP&C advisor or PHE Centre