Infection Prevention and Control

Vancomycin Resistant Enterococci (VRE) Policy

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# Consultation and Distribution Record

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1. Introduction

This policy is written to support the control of Vancomycin/Gycopeptide Resistant Enterococci within the inpatient NHS Lothian healthcare setting. Enterococci are an increasingly common cause of healthcare associated infection. Infections caused by Vancomycin Resistant Enterococci (VRE) that become resistant to both Vancomycin and Teicoplanin they are known as Glycopeptide Resistant Enterococci (GRE). The infection control principles for individual cases or when there are clusters are the same for VRE and GRE therefore for the purposes of this policy the term VRE will be used.

The guidance in this policy should be read in conjunction with the National Infection Prevention and Control Manual 2016, as adapted by NHS Lothian.

2. Aim of the policy

This policy aims to guide staff in the safe management of hospital in patients who have laboratory proven or clinically suspected VRE infection and/or colonisation, in order to prevent transmission of infection.

3. Key objectives

All NHS Lothian employees are required to follow this policy. If any part of this guidance cannot be complied with then a risk assessment should be made of any exceptions. The risk assessment must be documented in the patient’s records and the Infection Prevention and Control Team informed.

4. Policy scope

This policy applies to all NHS Lothian (HCWs) clinical and non-clinical, working within NHS Lothian Healthcare who work with, or may have contact with patients who have laboratory confirmed or suspected VRE infection and/or colonisation.

5. Identification, Care and Management of a patient with VRE infection and/or colonisation.

5.1 Overview

Enterococci (Enterococcus species) are a group of bacteria naturally present in the intestinal tract of humans and normally cause no harm (colonisation). However sometimes enterococci can cause infections in wounds, urine and in more serious infections in blood. Most infections are caused by the patient's own bacteria but cross-infection between patients in hospital can happen.

VRE are enterococci that are resistant to an antibiotic called Vancomycin. VRE are often resistant to other types of antibiotics and this can make them
**Colonisation** is the presence, growth and multiplication of the bacteria without observable signs or symptoms of infections.

**Infections** refer to invasion of the bacteria into the patient tissues with signs or symptoms of infection/illness.

**Table 1: Summary Overview**

<table>
<thead>
<tr>
<th>Causative Organism</th>
<th>Enterococci (<em>Enterococcus</em> species) are a group of bacteria</th>
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</thead>
<tbody>
<tr>
<td>Clinical Manifestation</td>
<td>Signs and symptoms of wound, urine and blood stream infections.</td>
</tr>
<tr>
<td>Incubation Period</td>
<td>Variable</td>
</tr>
<tr>
<td>Period of Infectivity</td>
<td>Once positive infection and/or colonisation has been identified in NHS Lothian the patient is always presumed colonised thereafter.</td>
</tr>
</tbody>
</table>
| Mode of Transmission | • Direct contact with contaminated hands of health care workers or colonised/infected patients  
• Indirectly via contaminated medical and patient care equipment or frequently touched surfaces |
| Reservoirs | • Enterococci including VRE are found in the patient’s bowel and passed in faeces.  
• VRE may contaminate the environment around a patient and their bed space and toilet. If the patient has diarrhoea this will increase the risk of VRE contamination of the patients’ environment..  
• VRE can survive on contaminated surfaces and equipment e.g. commodes for several days to weeks. |
| Risk factors for VRE carriage | • Previous use of Vancomycin or combination of other antibiotics  
• Surgical procedures  
• Invasive medical devices e.g. central venous catheter (CVC)  
• Inpatient stay within Intensive Care Unit  
• Persons with weakened immune systems |
| Patient factors that increase the risk of transmission of VRE | • Discharging wounds that cannot be contained by a dressing  
• Diarrhoea or uncontained faecal incontinence  
• Presence of a stoma  
• Poor compliance with, or inability to manage personal hygiene. |
Risk factors for VRE spread in a healthcare setting

- Dirty and/or contaminated patient equipment and surfaces
- Dirty and/or contaminated hands of healthcare workers
- Patients with known/suspected VRE infections not isolated in single rooms with transmission based precautions in place.
- Patients known to be colonised with VRE who have diarrhoea (Type 5, 6, or 7 stool on Bristol Stool Chart) not isolated in single rooms with transmission based precautions in place.

6. Guidelines for Management

6.1 General Principles.

The prevention of infection with VRE relies on the diligent use of standard infection control precautions by all staff caring for all patients at all times.

Prompt single room isolation care of patients with suspected/confirmed VRE infection and use of transmission-based precautions.

Prompt single room isolation care of patients and use of transmission-based precautions with confirmed VRE colonisation who have diarrhoea (Type 5, 6, or 7 stool on Bristol Stool Chart)

A patient’s management should not be adversely impacted on the basis of their VRE status. Measures implemented to eliminate or minimise transmission should not interrupt the normal course of treatment required for the patients’ care/recovery.

6.2 Surveillance and screening.

Routine hospital-wide admission screening is currently not recommended. However, selective admission and/or interval screening on high risk groups may be undertaken on advice of infection control service.

Screening during suspected outbreaks and in response to important incidents will be at request of Infection Control Doctor.

6.3 Screening for discontinuation of contact precautions for VRE carriers

Colonisation with VRE may persist for years, and even if the results of rectal or stool cultures are negative, true clearance may be difficult to achieve. Re-emergence of VRE in faecal specimens frequently occurs after antibiotic therapy. For this reason
routine discontinuation of isolation and contact precaution of VRE infected and/or colonised patients is not recommended.

6.4 Alerting of patient records

An electronic Trak alert will be placed on the patient’s record by the Infection Prevention and Control team. This alert will remain in place even if the patient has subsequent VRE negative clinical or screening specimens.

6.5 Transmission based precautions

<table>
<thead>
<tr>
<th>Patient Placement</th>
<th>Single room or geographical isolation, with a dedicated toilet &amp; bathroom/shower room. If this is not possible ensure this is documented clearly and reported to infection prevention and control team.</th>
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</thead>
<tbody>
<tr>
<td>Contact Precautions</td>
<td>Transmission based precautions. Infection control sign must be placed on isolation room door.</td>
</tr>
<tr>
<td>Management of patient care equipment</td>
<td>Use of dedicated patient equipment where possible. If this is not possible shared patient equipment must be cleaned and disinfected with Chlor-clean (1000ppm available chlorine) prior to use on other patients.</td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>Staff should wear apron and gloves as a minimum when in contact with the patient and/or their environment. Staff should also ensure that before undertaking any procedure they assess any likely exposure and ensure that the PPE worn is that provides adequate protection against the risks associated with the procedure or task being undertaken.</td>
</tr>
<tr>
<td>Management of Care Environment</td>
<td>Patient bed area/room and sanitary facilities must be decontaminated at least daily with Chlor-clean (1000ppm available chlorine). <a href="#">NHS Lothian Infection Prevention and Control Manual</a></td>
</tr>
<tr>
<td>Patient discharge</td>
<td>Terminal cleaning of patient bed space/isolation room and toilet facilities on patient discharge/transfer or bed move as per NHS Scotland National Cleaning Specifications Terminal Cleaning Protocol.</td>
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6.6 Patient movement

Departments should be informed of patients VRE infection and/or colonisation prior to attendance. Contact precautions should be adhered to for care of the patient and their environment. Where not detrimental to the patient’s health, patients with VRE should be last on any operation list (to support logistics of ensuring appropriate environmental decontamination can take place).
6.7 Diseased patients

The precautions taken when carrying out the last offices of the diseased patient with VRE are the same as in life. Deceased Patient Procedure (Last Offices)

6.8 Patient Information

Patients and their relatives should be offered an information leaflet by their clinical team and given the opportunity to discuss the information. Relatives and visitors should be advised to wash their hands before entering and leaving the patient’s room. They do not have to wear any PPE.

6.9 Antimicrobial stewardship

Procedures should be in place to promote judicious antibiotic use, particularly of broad spectrum antibiotics, in order to limit the increased development of antibiotic resistant micro-organisms.

Staff should adhere to NHS Lothian University Hospital Divisions (UHD) Adult Antimicrobial Guidance & NHS Lothian University Hospital Divisions (UHD) Antimicrobial Prescribing Guideline in Children.

6.10 Outbreak Management

If an outbreak of VRE infection/colonisation is suspected a number of actions to assist with the investigation and control of the incident will need to be undertaken as per Outbreak Policy.
Quick Reference Guide: Vancomycin Resistant Enterococci (VRE)

| Organism: | Enterococci (Enterococcus species) are a group of bacteria |
| Signs & symptoms: | Present with symptoms of wound, urine, blood stream infection and endocarditis. |
| Transmission (spread): | Contact – direct and indirect |
| Person to person spread possible? | Yes |
| Incubation period: | Variable |
| People most at risk: | Patients with severe neutropenia  
Patients undergoing solid organ transplant  
Patients requiring admission to intensive care or neonatal units  
Presence of indwelling devices (e.g. urinary catheter) |
| Treatment: | As per NHS Lothian University Hospital Divisions UHD) Adult Antimicrobial Guidance & NHS Lothian UHD Antimicrobial Prescribing Guideline in Children. |
| Key management & control measures (MUST DO’S): | Transmission based Contact precautions should be used where there is a risk of direct or indirect contact with the patient and/or their environment and includes the following elements  
Single room or geographical isolation, with a dedicated toilet & bathroom.  
Infection control signage on isolation room door, Contact poster should be used.  
Use of dedicated patient equipment where possible. If this is not possible shared patient equipment must be cleaned and disinfected with Chlor-clean (1000ppm available chlorine) prior to use on other patients.  
Appropriate use of Personal Protective Equipment (PPE with gloves and apron worn as a minimum.  
Daily cleaning of patient bed area/room and toilet facilities with Chlor-clean (1000ppm available chlorine).  
Terminal cleaning of patient bed space/isolation room and toilet facilities on patient discharge/transfer or bed move as per NHS Lothian Terminal Cleaning Protocol. |

NB: Major risk factors for transmission of VRE in any healthcare setting are poor hand hygiene and poor environmental cleaning.
References and Further reading


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


Recommendations for Preventing the Spread of Vancomycin Resistance. 
