Vancomycin resistant *enterococci* (VRE)

Control and Management of patients Colonised or Infected with Vancomycin resistant *enterococci* (VRE)

TARGET AUDIENCE	NHSL wide, Acute, Health and Social Care Partnerships
PATIENT GROUP	All patients in particular immunocompromised

Clinical Guidelines Summary

- *Enterococci* are micro-organisms most commonly found in the human gut and are generally of low virulence however they can cause serious infections in vulnerable patients.
- The two main species are *Enterococcus faecalis* and *Enterococcus faecium.*
- Vancomycin resistance in these organisms is becoming increasingly common in hospitals reducing therapeutic options, particularly for those who are immunocompromised and /or requiring long term complicated healthcare.
- There are no effective decolonisation treatments available and therefore, colonisation as well as infection can result in the direct or indirect transmission of VRE to other patients and the environment.

Guideline Body

1. INTRODUCTION

This guideline has been developed for use in NHS Lanarkshire (NHSL) as part of the National Infection Prevention and Control Manual NIPCM

Chapter 1: Standard Infection Control Precautions (SICPS)
Chapter 2: Transmission Based Precautions: (TBPS)
Chapter 3: Healthcare Infection Incidents, Outbreak and data exceedance.
Chapter 4: Infection control in the built Environment and Decontamination

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2. AIM, PURPOSE AND OUTCOMES

- To ensure that identified patients receive appropriate timely treatment and management in line with current national guidelines and best practice.
- To aid NHSL staff on the identification and diagnosis of patients colonised/infected with VRE
- To ensure NHSL staff implement appropriate precautions to minimise the transmission of VRE

3. SCOPE

3.1 Who is the Guideline intended to Benefit or Affect?

This guideline is designed to safeguard patients, staff and the wider public from the risk of VRE. The guideline is aimed at all healthcare staff working or contracted in NHSL.

3.2. Who are the Stakeholders

Patients, Carers and relatives, staff and those defined within Section 5 - Roles and Responsibilities.

4. PRINCIPAL CONTENT

4.1 Patients at risk and routes of transmission

Table 1

Causative organism	Vancomycin Resistant Enterococci (VRE).
Clinical Manifestation	Patients can be colonised or infected with VRE. It can cause urinary tract infection, invasive device related infections, endocarditis and bacteraemia. Enterococci are bacteria that are commonly found in the bowels (gut) of humans. Occasionally enterococci can cause infections in the urinary tract, wounds and blood stream. These are usually treated with an antibiotic called vancomycin. Sometimes the enterococci become resistant to this antibiotic, so it no longer works against them. These are called Vancomycin Resistant Enterococci or VRE.
Incubation period	Not applicable.
Period of infectivity	Whilst patients are colonised or infected with VRE colonisation can remain indefinitely.
Mode of transmission	• Direct & Indirect Contact: • Higher risk when patient is having loose stools or draining wounds • Contaminated hands of Health Care Workers (HCWs) • Contaminated equipment and environment.
Reservoirs	Patients; Environment.
Population at risk	• Immunnosuppressed patients, patients with renal impairment. • Patients with severe illness and require critical care.
Persons at risk of acquisition	Patients with a proximity to a VRE positive patient.
Persons at risk of infection	• Patients who are colonised, have a haematological condition or are on renal dialysis. • Patients admitted to hospital regularly and for long periods of time.

4.2 Case Definitions

Table 2

Definition	Criteria
VRE Colonisation	VRE can be isolated from the patients rectal swab stool, wound exudate, drain fluid or other body sites but no clinical signs of infection are present.
VRE Infection	VRE can be isolated from wound exudate, drain fluid, blood cultures, or other body sites where there is ongoing clinical infection and the VRE is thought to be at least one of the organisms causing the infection.
Confirmed case	Any individual with a positive laboratory isolate for VRE.

4.3 Community/Care Homes and Day Centre

Community	There are no specific infection control precautions required for patients with VRE who live in their own homes. Good environmental and hand hygiene compliance is advised for patients and carers.
Care Homes and Day Centres	Infection control practices should be of the same standard as would apply to any other resident within the home. The resident should be encouraged to live normally. They should be free to: • Share a room with another person providing neither have open wounds; catheters or invasive devices. • Join others in communal areas such as sitting/dining rooms providing any sores/wounds are covered. • Receive visitors and go out of the home e.g. to visit family or friends.

4.4 Additional Measures during a data exceedance of VRE:

Patient screening:

- Screening should be carried out as advised by the IPCT, in a ward/department where a number of infections has arisen.
- Ongoing screening of patients in high risk areas such as haematology may be warranted alongside stringent infection prevention and control measures such as enhanced cleaning.
- Screening of HCWs is not routinely recommended.

4.5 Standard Infection Control Precautions (SICPs) / Transmission Based Precautions (TBPs)

(refer also to the National Infection Prevention & Control Manual)

SICPs & TBPs	
Patient Information	The clinical team with overall responsibility for the patient must inform the patient of their status and provide the patient/relatives with a VRE patient information leaflet. VRE Patient information leaflet The clinical team should document this in the patient's notes and provide information to the patient if discharged when a positive Lab result is available.
Patient placement	• While patient is VRE positive, isolate patient in a single-room with en-suite facilities or if no single-room available, seek advice from the IPCT..If a side room is not available a risk assessment must be completed and documented within the Personal Care Record. Priority should be given to patients who pose a greater source of cross transmission e.g. patients with diarrhoea or wound drainage. In these instances the patient's clinical condition may not support the placement of the patient in a side room a risk assessment must be completed and the reasons documented in the personal care record. • To minimise the spread to adjacent areas side room doors should be closed with appropriate signage fixed to the outside of the door. If the door being closed compromises patient care, a risk assessment should be made regarding whether the door may be kept open. This must be documented in the personal care record. • Please see Nurse in Charge Poster should be displayed on room door.
Hand hygiene	• Hand hygiene is the single most important measure to prevent cross-transmission of microorganisms. Hands must be decontaminated before and after each episodes of direct patient care and after contact with the patient's environment, regardless if Personal Protective Equipment (PPE) is donned. Soap and water should be used for hand hygiene when patients have loose stools. Alcohol based hand rub can be used to decontaminate hands if hands are visibly clean. Refer to Hand Hygiene Policy.
VRE Aide Memoire	• A VRE Aide Memoire for staff information is available via First-port.
Patient Screening	• Patient screening should take place following advice from IPCT.
Moving between wards, hospitals and	• Patient movement should be kept to a minimum. Prior to transfer, HCWs from the ward where the patient is located must inform the receiving ward/hospital of the patient's VRE status. A record of this should be recorded on the transfer document and inserted into the patients'

SICPs & TBPs	
departments	personal care record. When the patient requires to attend other departments the receiving area should put in place arrangements to minimise contact with other patients and arrange for additional cleaning if required. • Patients should attend physiotherapy/occupational therapy departments provided SICPs and TBPs are adhered to. The IPCT can be contacted for advice if required.
Equipment	• Use single-use items if possible. • Where possible allocate equipment for individual patient use e.g. washbowl, commodes etc.
Equipment & Environmental cleaning	• VRE can survive in the environment for long periods of time and survival periods on surfaces of 1 to 16 weeks and longer have been reported. • Surface contamination has mainly been associated with near patient surfaces/ frequently touched sites, and items of reusable patient care equipment. • Environmental cleaning is therefore important in helping to control spread. Careful and frequent hand decontamination is also essential to prevent cross-transmission. • Daily environmental and equipment cleaning must be undertaken with a solution of 1,000ppm available Chlorine releasing agent. • Dedicated equipment – clean as above after each use. • Clinell disinfectant wipes can be used to clean smaller pieces of equipment.
Personal Protective Equipment (PPE)	• Aprons must be worn for direct contact with the patient or the patient's environment/equipment. Gloves and aprons must be worn when exposure to blood and/or body fluids and /or contact with contaminated surfaces is likely/anticipated. Gloves and aprons are single use and must be discarded immediately after completion of task, discarded as clinical waste and hands decontaminated. NB: Gloves are not required for simple tasks such as placing meal trays in room.
Linen	• Linen should be treated as 'infectious linen' as outlined in the Laundry Bagging & tagging poster. • Linen hamper bags must be tagged appropriately (e.g. date, hospital ward/care area) to ensure traceability. • Bed linen and patient clothing should be changed daily.
Patient Clothing	There are no special requirements when handling patients clothing, however, advise relatives to wash hands thoroughly after clothing is put into the washing machine. Clothes should be washed at the temperatures advised on the clothing labels. Laundry Guidelines information leaflet is available if required – if this leaflet is provided document this in the personal care record.

SICPs & TBPs	
Waste	Waste from patients with VRE who remain symptomatic and who are considered to be infectious must be designated as clinical waste.
Removing Precautions	Patients infected and/or colonised should remain in isolation for the duration of their stay and only removed from single room following discussion with the IPCT.
Terminal Cleaning ***Following transfer, discharge or once the patient is no longer considered infectious***	Remove all of the following from the vacated single room: • healthcare waste and any other disposable items (bagged before removal from the room); • bedding/bed screens/curtains and manage as infectious linen (bagged before removal from the room); and • Reusable non-invasive care equipment (decontaminated in the room prior to removal). The room should be decontaminated: with a solution of 1,000ppm available Chlorine releasing agent. • The room must be cleaned from the highest to lowest point and from the least to most contaminated point.
Discharge Planning	The clinical team with overall responsibility for the patient must inform the General Practitioner and others in the community care team of the patients VRE status.
Last Offices	No additional precautions required.
Visitors	No restrictions on visitors. Advise visitors to perform hand hygiene with either ABHR or liquid soap and water before entering and leaving the facility.

4.6 Risk Assessment in Healthcare Settings:

- Effective management of VRE depends upon assessing the risk to the individual patient and the risk that this patient could pose to others. Advice on risk assessment can be obtained from the IPCT.

On admission and transfer ensure that TrakCare has been checked to verify if the patient is previously VRE positive. This is identified by a pink star

Who	Roles & Responsibilities
NHS Board	• To implement this guideline across NHS Board
Hospital Management Teams	• Support the HCWs, HPT and the IPCT in following this guideline.

Who	Roles & Responsibilities
IPCT/HPT	• Keep this guideline up to date. • Engage with staff to support implementation of IPC precautions described in this guideline as required. • Review national guidance • Provide education opportunities on this guideline. • IPCT to add an alert (pink star) onto TrakCare.
Microbiology	• To provide laboratory testing, clinical support and interpretation of results for clinical staff and the IPCT. • To liaise with appropriate reference laboratories to coordinate additional specimen investigation. • Outwith IPC core hours, contact the ward to advise the staff of new isolates of VRE. • The microbiology laboratory will inform the Infection Prevention and Control Nurse (IPCN) of any new/re-isolates. The results will be reported to the wards via the IPCN, however staff have the responsibility to review any outstanding screens. • The microbiology laboratory will inform the Infection Prevention and Control Nurse (IPCN) of any new/re-isolates. The results will be reported to the wards via the IPCN, however staff have the responsibility to review any outstanding specimens.
Senior Charge Nurse (Ward Manager) **Care Home Manager** **Health and Social Care Partnerships**	• To provide leadership within the clinical area and act as role models in relation to IPCT. • To ensure implementation and ongoing compliance with SICPs and TBPs and take appropriate action to address any area of non compliance. • To report any difficulty in accessing or providing sufficient resource to achieve this. • Recognise and report to the IPCT/HPT any incidences of clinical conditions where the signs/symptoms are suggestive of an outbreak.
HCWs and Clinicians	• To ensure implementation and ongoing compliance with SICPs and TBPs. • Recognise and report to the IPCT/HPT any incidences of clinical conditions where the signs/symptoms are suggestive of an outbreak. • Inform a member of the Infection Prevention and Control Team (IPCT) if this guideline cannot be followed and inform their clinical lead or line manager. • Prompt recognition and appropriate management and treatment of patients displaying symptoms • Isolate the patient.
PSSD	• To provide support services including domestic services to NHSL to maintain the cleanliness and safety of premises in line with local/national guideline.

Who	Roles & Responsibilities
SALUS occupational health & safety	• To provide specialist advice and support to clinical teams and the IPCT in relation to staff health and other matters of health & safety
Communications Department	• To lead on the development and dissemination of media statements and other key information to NHS Lanarkshire and external agencies. • To take the lead on public communication.

6. COMMUNICATION

Policy will be launched and distributed as follows:

- Staff brief
- First port -Infection prevention and Control section
- Acute and Health and Social Care Partnerships Hygiene Groups

7. ABBREVIATIONS

HCWs	Health Care Workers
HPT	Health Protection Team
IPC	Infection Prevention and Control
IPCN	Infection Prevention and Control Nurse
IPCT	Infection Prevention and Control Team
NHSL	NHS Lanarkshire
PPE	Personal Protective Equipment
PSSD	Property Support Services Department
SICPS	Standard Infection Control Precautions
TBPS	Transmission Based Precautions
VRE	Vancomycin-resistant enterococci
NIPCM	National Infection Prevention and Control Manual

References/Evidence

Vancomycin-resistant enterococci (VRE): Information for healthcare workers
https://www.nipcm.hps.scot.nhs.uk/media/1761/1_vre-hcw-leaflet-final-190708.pdf

Vancomycin-resistant enterococci (VRE): Information for patients
https://www.nipcm.scot.nhs.uk/media/1760/1_vre-patient-leaflet-final-190708.pdf

National Infection prevention and Control Manual (NIPCM)
http://www.nipcm.hps.scot.nhs.uk/

Appendices

1. Governance information for Guidance document

Lead Author(s):	Lee Macready
Endorsing Body:	Infection Control Committee (ICC)
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Responsible Person (if different from lead author)	Head of Infection Prevention and Control

CONSULTATION AND DISTRIBUTION RECORD	
Contributing Author(s):	• Infection Prevention and Control Team (IPCT) • Health Protection Team (HPT)
Consultation Process / Stakeholders:	• IPCT • HPT • Property and Support Services Department (PSSD) • Microbiologists • Infection Prevention and Control Doctor • Lead Antimicrobial Pharmacist • Chief of Nursing Services • Chief of Medical Services • Corporate Management Team • Infection Control Committee (ICC)
Distribution:	• NHS Lanarkshire intranet - First Port • NHS Lanarkshire internet

CHANGE RECORD			
Date	**Author**	**Change**	**Version No.**
27-02-2019	Governance Review Group	Changed from Policy to Guideline	1.0
06-07-2021	Governance Review Group	Reviewed and updated in line with the Vale of Leven recommendations	2.0
14-06-2023	Infection Prevention and Control	The review date has been extended in line with NHSL guidance:	3.0
21-05-2024	Governance Review Group	Reviewed in line with NHS Lanarkshire's guidelines	4.0

Appendix 1: Vancomycin-resistant Enterococcus – (VRE) Aide Memoire

Daily Risk-assessments – only complete sections required	Notes	Dates and initials for each risk-assessment assessed					
Patient symptoms and/or organism (if suspected or confirmed) e.g loose stools with VRE - ***Please state***							
Identified infection control risk e.g. unable to isolate/not safe to close single-room door/no en-suite room available - ***Please state***							
Reason unable to isolate patient in a single-room/ close door to single room e.g. falls risk/close observation required/ deteriorating patient - ***Please state***							
Mitigations put in place to reduce patient to patient transmission if no single room available e.g. nursed next to a clinical hand-wash basin, placed at rear of room or ward/provided with own commode/shared toilet decontaminated after each use/ clinical waste bin placed next to bed space - ***Please state***							
Patient (and family/visitors as appropriate) have been provided with IPC advice to help reduce risk of transmitting infection e.g. verbal/patient information leaflets/Hand-washing advice - ***Please state***							
IPC team have been made aware of the risk-assessment for this patient and inability to implement the recommended IPC precautions? ***Please state***							
Please provide information regarding resolutions to any of the risks noted above e.g. patient transferred to a single room/ clearance criteria for organism now met/ patient discharged from facility ***Please state***	If risk assessments are no longer required, please date and sign below: - **Date:** **Sign:**						

Control and Management of patients Colonised or Infected with Vancomycin resistant enterococci (VRE) Guideline

Follow NHS Lanarkshire VRE guidance if patient is suspected, previously or currently known to be VRE positive:

- Implement the VRE guidance for IPC control measures, as outlined in the blue box →
- For more information refer to National Infection Prevention and Control Manual (NIPCM) Transmission-Based Precautions (TBPs) Chapter 2.
- Isolate in a single room with en-suite facilities.
- Contact the IPCT to support with risk-assessing the patients.
- Keep the door to the patients' room closed – if risk assessed as not suitable this should be documented in the patient notes.

Risk-Assess Daily

YES To any

- **Is the patient currently admitted to a high-risk area e.g. High dependency/ITU/ haemato-oncology/Renal unit?**
- **Has the patient been symptomatic of loose stools within the past 48 hours?**
- **Is the patient incontinent of urine and/or faeces?**
- **Does the patient have leaking wounds and/or drains/drain sites?**

NO to all

- Ensure that a Terminal Clean of the patient's room (or bed space as appropriate) is carried out.
- Discontinue TBPs.
- Document risk-assessment in the patient's notes.

VRE – guidance for IPC control measures

Patient Placement – while patient is VRE positive, isolate patient in a single-room with en-suite facilities or if no single-room available, seek advice from the IPCT.

Hand Hygiene – Liquid soap and water or alcohol rub.

Personal Protective Equipment (PPE)- Disposable gloves and apron for patient contact.

Patient Environment – Twice daily cleans with 1,000ppm chlorine releasing agent.

Patient Equipment – Clean between patients and after each use with 1,000ppm chlorine releasing agent.

VRE organism – general information

Two types that commonly colonise the human gut, *Enterococcus faecalis* and *Entercoccus faecium*

Patient may be colonised in the gut without signs of infection.

Mode of transmission - Contact:

Direct – via contaminated hands and **Indirect** – contaminated patient care equipment or environmental surfaces.

Faecal-Oral route – where hands or items contaminated with faecal organisms are placed directly into the mouth.

Lead Author	**Lee Macready**	**Date approved**	**20-06-2024**
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