Royal Devon and Exeter NHS
NHS Foundation Trust

VANCOMYCIN/GLYCOPEPTIDE RESISTANT ENTEROCOCCI (VRE/GRE) GUIDELINES

Post holder responsible for Policy:	**Lead Nurse**
Directorate/Department responsible for Policy:	**Infection Prevention & Control**
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This document replaces:	**Vancomycin/Glycopeptide Resistant Enterococci (VRE/GRE) Guidelines - 2009**

Please *specify* standard/criterion numbers and tick ✓ other boxes as appropriate

The Strategic Directions 2007-2012 were agreed by the Board of Directors in October 2007 to support the Trust's vision "Respond, Deliver, Enable". The Key Milestones below will ensure there is a shared understanding about what needs to be delivered.

Monitoring Information		**Strategic Directions – Key Milestones**	
Patient Experience		Waiting	
Assurance Framework		Privacy and Dignity	
Monitor/Finance/Performance		Efficiency and Effectiveness	
Care Quality Commission Outcomes:	8	Delivery of Care Closer to Home	
		Infection Control	✓
NHSLA Risk Management Standards for Acute Trusts			
NHSLA CNST Maternity Clinical Risk Management Standards:			
Other *(please specify)*:			
Note: This policy has been assessed for any equality, diversity or human rights implications			

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1. General Information

Enterococci or faecal streptococci colonise the gut of most healthy people. They are also capable of causing both endogenous infection from the patient's own flora, and more frequently in recent years have been shown to cause hospital acquired infection. Infection occurs more commonly in compromised patients and can range from urinary tract infection to wound infection or, more seriously, bacteraemia and endocarditis.

Resistance to glycopeptides such as vancomycin has emerged, in particular in *Enterococcus faecalis* and *Enterococcus faecium*. The emergence of VRE in Europe is thought to be linked to the use of the glycopeptide antibiotic avoparcin, used as a growth promoter in the livestock industry. Hence, animal strains of VRE may colonise the gut of healthy individuals via contaminated food. In the USA, where avoparcin has not been used, glycopeptide use is commonly linked with the use of vancomycin itself in hospitals and especially in certain specialties, e.g. haematology, transplantation and renal medicine.

2. Significance

Resistance to glycopeptides reduces the options for antibiotic treatment where clinical infection is evident.

Resistance in Enterococci can transfer to other organisms. For example, the first detected clinical case of Vancomycin Resistant *Staphylococcus aureus* (VRSA) occurred in the USA in 2002. This was caused by vancomycin resistant genes transferring to Meticillin Resistant *Staphylococcus aureus* (MRSA). Since then further cases have been reported in the USA and elsewhere in the world. The risk of VRSA and potentially untreatable *Staph. aureus* infections is an important reason for controlling the spread of VRE.

3. Patient Risk Groups

Currently surveillance cultures in the RD&E are only conducted in high risk groups, e.g. for neutropenic inpatients. Therefore unless isolated from a significant specimen such as a blood culture, the presence of VRE may be missed. However, although it is detected in at risk populations, at present VRE appears to be sporadic rather than endemic in the RD&E.

The emergence of VRE as a clinical problem is probably often due to the convergence of multiple risk factors. Prior and prolonged antibiotic use is an important risk factor. Widespread use of broad spectrum antibiotics, especially cephalosporins is a feature of outbreaks of VRE. Glycopeptide (vancomycin and teicoplanin) use is particularly associated with VRE emergence.

Other risk factors for acquiring hospital infection with VRE include significant immuno-suppression, admission to a haematology, renal or intensive care unit and prolonged or multiple hospital admissions. Transfer of patients from hospitals with a high rate of VRE may also introduce the problem.

4. Prevention

Prevention of VRE requires recognised risks to be minimised or avoided.

Appropriate antibiotic prescribing is essential. Cephalosporins should be avoided where possible, especially in high risk areas. Vancomycin use must be controlled. Vancomycin can be used as a first line agent with caution and according to current treatment guidelines for treating patients with *Clostridium difficile* diarrhoea or colitis as many of the risk factors for VRE exist in these patients.

As with other organisms, good infection control practice and hygiene are the cornerstone of prevention. This includes appropriate surveillance and isolation of known VRE patients in high risk areas.

5. Transmission

Within a hospital setting transmission is by contact. This usually occurs via the unwashed hands of healthcare workers following contact with colonised or infected patients, their equipment or their environment.

6. Identification of infection or colonisation

As colonisation is more common than infection, careful consideration is required when interpreting positive microbiology results. When VRE is isolated from a clinical specimen the following screening of the patient is advised prior to commencing antibiotic therapy:

- Stool sample (or, if unavailable, rectal swab)}
- Wound swabs } Request "VRE
- Central vascular catheter sites } screen only"
- Catheter specimen of urine }

If an outbreak of VRE occurs the infection control team will advise on the screening of any contacts. The above specimens should also be taken if contact screening is requested.

7. Patient treatment and ongoing management

The aim is to treat infection where present with an appropriate antibiotic. However successful treatment of infection does not always indicate clearance of VRE from the body, and therefore the following screening is recommended:

- First screen: Obtain swabs/specimens as listed above a <u>minimum</u> of 48 hours after antibiotic treatment has ceased.
- Second screen: If 1st screen results are negative then obtain second screen at least one week after the initial screen.
- Third screen: If 2nd screen results are negative then obtain third screen at least a week after previous screen.

The patient can then be considered clear if carriage has not been detected in three consecutive screens. However, stool carriage can persist for months or years, and therefore patients who are positive should be managed as detailed in section 9 whenever they are admitted to hospital.

8. Patient information

As a result of the increasing media attention to resistant micro-organisms, patients may potentially be alarmed. In addition to explanations for any treatment required, it is helpful to give patients an explanation of how VRE is transmitted and the rationale for isolation (if applicable). To supplement verbal information, a patient leaflet has been produced and is available from the Photographics Department at the Royal Devon and Exeter Hospital. If the patient/family has further questions, the Infection Control Team should be contacted.

9. Infection control measures

9.1 Isolation

If the patient is being cared for within the acute hospital setting, isolation in a single room is essential, with *en suite* facilities if available. Cohort nursing may be advised by the Infection Control Team in the event of an outbreak. In community hospitals the likelihood of VRE **infection** is considerably less than in the acute setting and therefore isolation is not always appropriate. Please consult infection control for advice.

Source isolation precautions should be initiated. Gloves and aprons must be worn by staff for direct patient contact and cleaning the environment. Protective clothing must be removed prior to leaving the room. It is unnecessary to wear protective clothing for activities that do not involve significant patient or environmental contact, e.g. giving oral medication. Hands must be cleansed immediately after glove removal, in between procedures on the same patient and before exiting the isolation room. In addition, use alcohol gel to hands after leaving the room. Keep the door closed.

9.2 Maintaining standards of care

It is important to remember that control measures should not compromise standards of care or the need for urgent specialist care. The patient's overall needs must take precedence.

9.3 Visits to other departments

Patients can undergo investigations in all departments, provided the department has been informed in advance. Staff within the department should practise standard infection control precautions. Equipment should be decontaminated, in accordance with the decontamination policy, before use on the next patient.

9.4 Mobilisation

If isolated in a single room, the patient can leave the room to allow mobilisation in an area away from the ward, e.g. main corridor. This does not mean that the patient can wander freely around the ward where close contact with other vulnerable patients is inevitable. The distinction must be explained carefully to patients who may find it confusing.

9.5 Personal hygiene

If *en suite* facilities are not available, patients may use communal facilities but these must be cleaned thoroughly after use. If patients are leaving an isolation room for this purpose, they must be advised this does not mean they can move freely around the ward.

9.6 Decontamination of equipment/environment

To minimise the risk of cross infection via the environment, attention to decontamination is crucial. Individual equipment such as a stethoscope and sphygmomanometer should be allocated for the patient's sole use. The room and any patient equipment must be cleaned routinely on a daily basis (as per decontamination guidelines) during the patient's stay. On transfer or discharge the room must be cleaned according to the terminal cleaning procedure. Curtains must be changed or steam-cleaned. Particular attention must be paid to the toilet area (or commode), bed frame, rails and mattress, call bell and items of patient equipment.

9.7 Transfer/admission of patients with VRE

If a patient is to be transferred to another ward or hospital, the receiving clinical staff should be informed. Advice can be sought from the Infection Control Team if required. If a patient who has had VRE on a previous admission is readmitted it is likely that the patient is still colonised. Contact Infection Control for more information.

9.8 Transporting by ambulance or car

If their clinical condition allows, patients with VRE can be transported in an ambulance with other patients as long as open wounds are covered, they are continent of urine and faeces and the ambulance crew maintains standard infection control precautions.

Likewise, outpatients can be transported in cars without concern for the driver or subsequent passengers, as long as the patient is continent, and any open wounds covered.