10X Essentials: Infectious Disease Diagnostics in the Geisinger Health System

VRE (vanA) Polymerase Chain Reaction (PCR) Testing FAQ

GEISINGER MEDICAL LABORATORIES

Clinical and Diagnostic Utility

- PCR is the most sensitive method to identify patients colonized/infected with *Enterococcus* spp. that harbor the vancomycin (*van*A) gene, i.e., vancomycin-resistant *Enterococcus* spp. (VRE).
- The VRE PCR assay detects the *van*A gene sequence, and will not detect the *van*B gene. (*van*B is not commonly associated with hospital outbreaks. If suspected, please notify Microbiology Laboratory.)
- Compared to other molecular methods, analytical sensitivity and specificity generally range above 95 -100%.
- The test delivers on-demand results - TAT is 2 hours from receipt in laboratory (1st and 2nd shift only).
- The 95%-limit of detection (LOD) was 150 colony forming units (CFU)/swab for *vanA.*
- *Enterococci* cause about 1/8 hospital infections; 30% of those are caused by VRE with higher rates in high risk groups, (immunocompromised or ICU). Attributable mortality can exceed 10%; extended length of stay, 6.2 days; incremental cost, $12,800/case.

Testing Criteria - Test code/Test name: VREP/VRE Screen, PCR (old test code/test name: VRESC/VRE Screen Culture)

- Limit testing to patients that require active surveillance for VRE.
- Do NOT submit multiple specimens for testing. No improvement to yield (test positive predictive value) is achieved by testing multiple specimens.
- Due to the high sensitivity of the PCR assay, we recommend only 1 specimen be tested per patient admission.

Specimens and Stability:

- **Perianal swab collection (white cap swab, molecular testing swab): Using the double Molecular Testing swab, swab the perianal region/area (3) times with both swabs (i.e., swab like you are wiping after a bowel movement). Carefully place in swab transport container.**
- **Note:** The swabs should stay attached to the white cap at all times.
- **Stability:** 15–30 C for < 24 hours; **5 days refrigerated at 2-8 C**.

Cautions/Limitations to Testing

- An assay positive result does not rule out the presence of other pathogens.
- Because the detection of VRE is dependent on the number of organisms present in the sample, reliable results are dependent on proper specimen collection, handling, and storage.
- A positive test result does not necessarily indicate the presence of viable organism. However, it is presumptive for the presence of VRE.
- Test results might also be affected by concurrent antibiotic therapy. Therefore, do not assess therapeutic success or failure using this test because DNA might persist following antimicrobial therapy.
- Mutations or polymorphisms in primer or probe binding regions may affect detection of new or unknown VRE (*van*A) variants resulting in a false negative result.
- Potentially **interfering substances** include hydrocortisone cream and Pepto-Bismol.
- Collection of peri-anal specimens is generally associated with slightly lower detection rates than stool specimens; however stool specimens can yield false positive results; therefore peri-anal specimens are the specimen of choice in the GHS system.

lms,dmw: vrep
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ALERT: Institute "**Contact Precautions**" for VRE (*van*A) patients