Algorithm for Testing *S. aureus* with Vancomycin (VA)

**Acceptable Primary Test Methods**

**Include:**

1. Laboratories using automated MIC methods that have not been validated for VRSA detection and laboratories using disk diffusion should add a commercial BHIA VA agar screen plate (6 µg/ml).
2. Disk diffusion will not differentiate VISA (MICs 4-8) from susceptible strains (MICs 0.5-2). The vancomycin disk test will detect VRSA isolates containing the vanA resistance gene by showing no zone of inhibition around the disk (zone = 6 mm). VA screen plate will not reliably detect strains for which MIC = 4 µg/ml.
3. If concerned about a result based on a patient’s history, send to a reference lab for MIC testing.
4. Report only isolates with MIC ≥ 8 µg/ml or zone diameter = 6 mm to CDC by email: SEARCH@cdc.gov

**Clinical and Laboratory Standards Institute**

*S. aureus/Vancomycin Breakpoints*

- **Susceptible:** ≤2 µg/ml (VSSA) Vancomycin-susceptible *S. aureus*
- **Intermediate:** 4-8 µg/ml (VISA) Vancomycin-intermediate *S. aureus*
- **Resistant:** ≥16 µg/ml (VRSA) Vancomycin-resistant *S. aureus*

**Algorithm for Testing *S. aureus* with Vancomycin (VA)**

1. **VA MIC < 2 µg/ml AND NO growth on VA screen plate**
   - Report VSSA³

2. **VA MIC ≥ 4 µg/ml AND/OR GROWTH on VA screen plate**
   - Possible VISA/VRSA

3. **VA zone < 15 mm AND/OR GROWTH on VA screen plate**
   - Possible VISA/VRSA

4. **VA zone > 15 mm AND GROWTH on VA screen plate**
   - Report Probable VSSA³

**CHECK for purity**

**CONFIRM isolate ID**

**RETEST using an MIC method**

**SAVE ISOLATE**

**NOTIFY infection control, physician, local health department and CDC**

**SEND S. aureus with vancomycin MIC ≥8 to CDC for MIC confirmation and van gene detection**

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**Important Footnotes**

1. Laboratories using automated MIC methods that have not been validated for VRSA detection and laboratories using disk diffusion should add a commercial BHIA VA agar screen plate (6 µg/ml).
2. Disk diffusion will not differentiate VISA (MICs 4-8) from susceptible strains (MICs 0.5-2). The vancomycin disk test will detect VRSA isolates containing the vanA resistance gene by showing no zone of inhibition around the disk (zone = 6 mm). VA screen plate will not reliably detect strains for which MIC = 4 µg/ml.
3. If concerned about a result based on a patient’s history, send to a reference lab for MIC testing.
4. Report only isolates with MIC ≥ 8 µg/ml or zone diameter = 6 mm to CDC by email: SEARCH@cdc.gov