



## Symposium 4.2

### Detecting Resistant Bacteria Fast-What's New?

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Recently, a variety of rapid testing methods based on the detection of antimicrobial resistance genes or mutations associated with antimicrobial resistance, have been described for a number of antimicrobial/micro-organism combinations. Infections caused by methicillin (oxacillin)-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococcus* spp. (VRE) have worse outcomes and higher associated costs than infections caused by methicillin (oxacillin)-susceptible *S. aureus* or vancomycin-susceptible *Enterococcus* spp. Because MRSA and VRE account for a significant percentage of nosocomial infections, much attention has focused on early detection of carriers of MRSA and VRE.

Guidelines published by The Society of Healthcare Epidemiologists of America (SHEA), advise active surveillance programs in healthcare institutions for detection of MRSA and VRE carriers. Numerous studies have shown that surveillance for and isolation of carriers of MRSA and VRE can significantly reduce the incidence of nosocomial infections by these organisms and be cost-saving.

Broad-based surveillance for MRSA or VRE, using culture-based methods, may be especially demanding if not impossible for most clinical microbiology laboratories. Moreover, the time required for a final result may take several days. Real-time PCR testing methods for both MRSA and VRE show great promise for simplifying this process and providing same day results. Notably with VRE, nearly all studies, which use either conventional PCR or real-time PCR, show improved sensitivities for detecting this pathogen from fecal specimens compared with culture.

This lecture will focus on real-time PCR strategies for early detection of MRSA and VRE carriers and include a discussion on recent reports which demonstrate the effectiveness of these test methods as a preventive approach for MRSA and VRE nosocomial infections in the U.S.