

MRSA Screen

TECHNICAL UPDATE

DESCRIPTION/BACKGROUND INFORMATION

Soon after the introduction of methicillin in 1959, methicillin-resistant *S. aureus* (MRSA) was reported in the United Kingdom. Though rare in the United States until the mid-1970s, MRSA currently accounts for more than sixty percent of *S. aureus* hospital-acquired infections. In June 2007, the Association for Professionals in Infection Control and Epidemiology (APIC) released results from the first nationwide study on the burden of MRSA on U.S. healthcare. The data showed that 46 out of every 1,000 patients (4.6%) were infected or colonized with MRSA; a rate up to eleven times greater than previous estimates. Experts at the Centers for Disease Control and Prevention (CDC) reported that MRSA cause more than 94,000 life-threatening (invasive) infections and 19,000 deaths in the U.S. Klevens et. al confirmed this finding and estimated 18,900 MRSA hospital-onset bacteremias occur annually.

The Healthcare Infection Control Practices Advisory Committee (HICPAC) issued recommendation for the management of Multidrug-Resistant Organisms (MDROs), including MRSA, in healthcare settings in 2006. Implementation of active surveillance cultures (ASC) to identify colonized patient and Contact Precautions are strongly recommended as control measures to reduce MDRO transmission.

The annual cost to treat MRSA in hospitalized patients in the U.S. is estimated at \$3.2-4.2 billion associated with increased length of stay and the cost of critical care stays associated with these complications. Rapid, accurate, and cost-effective screening tests for MRSA colonization are needed in order to reduce the economic burden of this pathogen. The use of selective culture media utilizing specific chromogens has been described as reliable and fast for screening for MRSA in comparison to traditional culture methods.

CLINICAL APPLICATION

The CDC study, "Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006," in reference to rapid detection methods states "Using conventional culture methods for active surveillance can result in a delay of 2-3 days before results are available. If the infection control precautions (e.g., Contact Precautions) are withheld until the results are available, the desired infection control measures could be delayed. If empiric precautions are used pending negative surveillance culture results, precautions may be unnecessarily implemented for many, if not most, patients. For this reason, investigators have sought methods for decreasing the time necessary to obtain a result from ASC. Commercially available media containing chromogenic enzyme substrates (CHROMagar MRSA) has been shown to have high sensitivity and specificity for identification of MRSA and facilitate detection of MRSA colonies in screening cultures as early as 16 hours after inoculation.... A mathematical model characterizing MRSA transmission dynamics predicted that, in comparison to conventional culture methods,

the use of rapid detection tests may decrease isolation needs in settings of low-endemicity and result in more rapid reduction in prevalence in highly-endemic settings.

Cultures of the nares identify most patients with MRSA.

4041 MRSA Screen

SPECIMEN:	Swab of the anterior nares on an Aerobic Culturette
SUBMISSION REQUIREMENTS:	One Culturette - Aerobic. Submit ambient temperature.
REJECTION CRITERIA:	Sources other than nares
METHODOLOGY:	Culture
REFERENCE RANGE:	Negative for MRSA
CPT CODE(S):	87070
TURN AROUND TIMES:	1 day

REFERENCES:

1. remel Spectra™ MRSA package insert, 03/03/08
2. Siegel, J.D., Rhinehart, E., Jackson, M., Chiarello, L. (2006) *Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006*

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