

**LABORATORY ALLIANCE** of Central New York, LLC

PCR Test for Detection of Methicillin Susceptible and Methicillin Resistant Strains of Staphylococcus aureus in Nasal Specimens

Effective October 25, 2010, the Microbiology department of Laboratory Alliance of Central New York will be offering a new PCR-based amplification test for the detection of Methicillin-Susceptible Staphylococcus aureus (MSSA) and Methicillin-Resistant S. aureus (MRSA) in nasal specimens. This new test offers significant advantages over previously used PCR assays because it can simultaneously detect and differentiate MSSA and MRSA colonization in nasal carriers. In addition, the test is highly accurate and reliable with test results available as early as 1 hour of specimen receipt.

Clinical Significance:

Over 90% of hospital-acquired S. aureus infections result from the patient's own colonized flora with nasal carriers of MSSA and/or MRSA nearly 9 times more likely to develop surgical site infections than non-carriers (1, 2). Dialysis, burn and ICU patients are also at greater risk of developing self-infection if they are nasal carriers of S. aureus (2-4). More recently, studies have shown that patients undergoing orthopedic implant or cardiac surgery are at considerable greater risk of developing post-operative infections if they are nasal carriers of either MSSA or MRSA (5,6). **These same studies have shown that prescreening patients for nasal carriage of MSSA and MRSA, followed by the decolonization of these patients who test positive for MSSA and/or MRSA, significantly reduces post-surgical implant infections due to these staphylococci.**

The new test service, called the STAPH PCR SCREEN, is the only gene amplification assay available that is designed specifically for the simultaneous detection and differentiation of MSSA and MRSA in nasal specimens. The intended purpose of this new test is to rapidly and reliably screen nasal carriers for MSSA and MRSA prior to undergoing elective cardiac or orthopedic implant surgery. Patients identified as being nasal carriers with MSSA and/or MRSA will receive appropriate decolonization therapy prior to surgery to minimize the risk of post-operative infection due to these organisms.

Test Name: STAPH PCR SCREEN

Test Code: SAPCR

Method: PCR



Specimen Collect: Nasal swab using the Red Cap collection device with liquid Stuart's



Transport: Transport at RT for Rapid Response Lab specimens and refrigerate all other specimens. The specimen is stable for 24 hours at RT (15-28 °C) and 5 days at 2 – 8 °C.

Scheduled of Testing: 0700- 1530, 7 days per week

CPT Code: 87640 and 87641

Billing Code: 3010368

For More Information:

For questions or concerns regarding this testing, please contact Russell Rawling, Microbiology Manager at 410-7060.

References:

1. Critchley, I.A. et. al. 2006. Eradication of MRSA nasal colonization as a strategy for infection prevention. *Drug Discovery Today*. 3: 189-195.
2. Yu, V.L. et al. 1986. *Staphylococcus aureus* nasal carriage and infection in patients on hemodialysis. *N. Engl. J. Med.* 315: 91-96.
3. Mackie, D.P. et al. 1994. Reduction in *Staphylococcus aureus* wound colonization. *Burns*. 20: S14-S18.
4. Kooistra-Smid, M. et al. 2004. Molecular epidemiology of *Staphylococcus aureus* colonization in a burn center. *Burns*. 30: 27-33.
5. Bode, L.G.M. et al. 2010. Preventing surgical-site infections in nasal carriers of *Staphylococcus aureus*. *N. Engl. J. Med.* 362: 9-17.
6. Kim, D.H. et al. 2010. Institutional prescreening for detection and eradication of methicillin-resistant *Staphylococcus aureus* in patients undergoing elective orthopaedic surgery. *J. Bone Joint. Surg.* 92: 1820-1826.