

**Elliot Hospital Molecular Microbiology
Nucleic Acid Amplification Testing**

Oct 2017

MRSA Screen Test by PCR

The Microbiology Department offers 24 hour service on nasal screening by PCR for hospital and ICU admissions. This test is 86.3% sensitive, 94.9% specific, with a negative predictive value of 96.6%. Once the test is received in the laboratory, the turn-around time is 1-2 hours.

Clostridium difficile (Cdiff/Epi) Test by PCR

Clostridium difficile testing, performed by PCR, detects the toxin B gene and also presumptively detects the gene sequences found in the 027/NAP1/BI strain. This test requires a liquid or soft stool specimen. Frozen or formed stools are not acceptable. The assay has a sensitivity of 98.72% and a specificity of 90.86%. Only one specimen is needed to provide accurate information. This test is performed as a 24 hour service with a 1-2 hour turn-around time.

Group B Streptococcus Test by PCR

Group B Streptococcus (GBS) testing for pregnant women who present at delivery time with no prenatal care, or who might deliver preterm, or whose GBS status is unknown at the time of delivery. These patients may be tested by PCR. The required specimen is a vaginal/rectal swab. This test is performed as a 24 hour service with a 1-2 hour turn-around time. All negative GBS PCR will be followed up with a Group B strep screen culture.

Enterovirus Test by PCR

The PCR test for the detection of *Enterovirus* in cerebrospinal fluid specimens from patients with signs and symptoms of meningitis is available 24 hours per day. The test has a turn-around time of approximately 3 hours once the specimen is received in the laboratory.

Influenza by PCR

The multiplex RT-PCR test is intended for the detection and differentiation of influenza A and influenza B viral RNA. Nasopharyngeal swab specimens (in universal transport medium/ M5) collected from patients with signs and symptoms of critical respiratory infection will be accepted. The test is available 24 hours a day and has a turn-around time of less than 1 hour.

Respiratory Syncytial Virus (RSV) by PCR

The multiplex RT-PCR test is intended for the detection of RSV viral RNA. Nasopharyngeal swab specimens (in universal transport medium/ M5) collected from patients with signs and symptoms of critical respiratory infection will be accepted. The test is available 24 hours a day and has a turn-around time of less than 1 hour. There is no age limitation on this assay. It is encouraged that adults also be tested for this respiratory pathogen.

MRSA/SA Blood culture Test by PCR

The PCR test is a qualitative diagnostic test intended for the detection of *Staphylococcus aureus* and methicillin-resistant *Staphylococcus aureus* DNA directly from positive blood cultures. Blood culture bottles are determined by Gram stain as positive for Gram positive cocci in clusters (GPCC) or as Gram positive cocci (GPC) in singles. Once an Aerobic Plus (resin based) blood culture bottle is determined to be positive for GPCC or GPC, the PCR test has a turn-around time of about an hour.

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SA Nasal Complete PCR

The PCR test is a qualitative in vitro diagnostic test designed for rapid detection of MRSA or MSSA in nasal swabs. This test is offered as a pre-screening test for pre-operative detection of MRSA or MSSA to determine nasal colonization prior to surgery. Following an eradication protocol of identified colonized carriers, post-surgical site infections can be minimized or eliminated. The test is performed Monday through Friday, first shift. Turn-around time is 1-2 hours.

Chlamydia and Gonorrhea Test by TMA

The Aptima Combo 2 Gen-Probe test detects ribosomal RNA (rRNA) from *Chlamydia trachomatis* (CT) and/or *Neisseria gonorrhoeae* (GC) to aid in the diagnosis of chlamydial and/or gonococcal urogenital disease by Transcription-Mediated Amplification (TMA) and Dual Kinetic Assay (DKA) technologies. Acceptable specimens are Gen-Probe vaginal swab, Gen-Probe cervical swab, Gen-Probe male urethral swab, Thin Prep PAP vial, or 20-60 mLs of first voided (dirty) urine. This test is performed Monday through Friday and has a 1-2 day turn-around time. Specimens collected on miscellaneous sources (eye, throat, rectum) or on patients under 16 years of age must be sent to the reference laboratory for testing.

Trichomonas vaginalis Test by TMA

The Aptima *Trichomonas vaginalis* Gen-Probe test detects *Trichomonas vaginalis* ribosomal RNA (rRNA) to aid in the diagnosis of Trichomonas infection by Transcription-Mediated Amplification (TMA) and Dual Kinetic Assay (DKA) technologies. Acceptable specimens are Gen-Probe vaginal swab, Gen-Probe cervical swab, and a Thin Prep PAP vial. This test is performed Monday through Friday and has a 1-2 day turn-around time. Specimens collected on males, patients under 16 years of age, or female first voided urines must be sent to the reference laboratory for testing.

High Risk HPV screening by TMA

The Aptima Human Papillomavirus Gen-Probe screening test detects Human Papillomavirus messenger RNA (mRNA) from female endocervical and post-hysterectomy vaginal specimens to aid in the diagnosis of HPV infection by Transcription-Mediated Amplification (TMA) and Dual Kinetic Assay (DKA) technologies. The only acceptable specimen is a Thin Prep PAP vial. This test is performed Monday through Friday and has a 1-2 day turn-around time.

HPV 16 and 18/45 Genotyping by TMA

The Aptima HPV 16 and 18/45 Genotype test detects HPV Genotype 16 and 18/45 messenger RNA (mRNA) from female endo-cervical and post-hysterectomy vaginal specimens to aid in the diagnosis of HPV infection by Transcription-Mediated Amplification (TMA) and Dual Kinetic Assay (DKA) technologies. This test is the follow up to a positive High Risk HPV screening test. The test can be requested as an 'add-on' to a previously positive High Risk HPV specimen. The positive High Risk HPV specimens are held for one month following release of test results. This test is performed once per week.

For general questions regarding these PCR tests, please contact Sharon Cairns, the Elliot Hospital Microbiology Department Supervisor at (603) 663-3451 or the Microbiology Department general phone number at (603) 663-3456.