



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

### **New Multiplex PCR Assay for Detection of Influenza A/B Viruses Performed at Rapid Response Laboratories**

Effective December 10, 2012, Laboratory Alliance of Central New York is pleased to announce that the Rapid Response Laboratories (RRLs) at St. Joseph's Hospital, Crouse Hospital, and Upstate University Hospital at Community General will be performing a multiplex Polymerase Chain Reaction (PCR) assay for the rapid and reliable detection of seasonal influenza A, H1N1 influenza A, and influenza B directly from nasopharyngeal swab specimens. This PCR assay is the same test that the Microbiology Department at Laboratory Alliance's Operation Center has been using since December of 2011. This confirmatory PCR test will be performed 24 hours per day, seven days per week and will be replacing our previously used less sensitive Enzyme Immunoassay (EIA) method.

#### **Clinical Significance**

Influenza, otherwise known as the "flu", is an acute, contagious, respiratory illness caused by influenza A, B, and C viruses. Of these, only influenza A and B are thought to cause significant disease in humans, with influenza B virus infections usually being milder than infections caused by influenza A virus. Common symptoms of influenza infection include fever, chills, sore throat, muscle pains, severe headache, weakness/fatigue, and a non-productive cough.<sup>1</sup>

In an effort to rapidly identify emergency room and hospitalized patients who might have influenza respiratory infections, each hospital RRL will be performing a state-of-the-art, highly sensitive, molecular-based, multiplex PCR test for the direct detection of seasonal influenza A, H1N1 influenza A (also known as the swine flu), and influenza B in nasopharyngeal specimens. The multiplex PCR assay has a sensitivity approaching 100% and is regarded as the new confirmatory "gold standard" for influenza testing.

The PCR assay will be replacing the previously used direct specimen EIA test performed at the RRLs that had a sensitivity of only 60 to 70% and required the reflex testing of "negative" specimens for confirmatory PCR testing performed in the Microbiology Department at Laboratory Alliance's Operations Center. The reflex testing of all negative influenza EIA tests delayed turn-around-times (TAT) by several to many hours before a final PCR confirmatory result was available.

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The availability of this PCR assay at the RRLs will provide a final confirmatory result within 70 to 80 minutes of specimen receipt. Even though the previously used EIA test could be performed in a shorter period of time, its poor sensitivity was one of the deciding factors for implementing this change. Importantly, the new PCR influenza service will be performed 24 hours per day, seven days a week which will greatly improve patient care management and the institution of appropriate infection prevention measures for hospitalized patients, when indicated.

Respiratory syncytial virus (RSV) is another important human respiratory pathogen but typically causes the most serious disease in the pediatric age group, particularly in those patients less than 2 years of age.<sup>2,3</sup> The RSV testing protocol will remain unchanged and will continue as previously established at your RRL.

<b>Test:</b>	FLUA/B and 09H1N1 BY PCR
<b>Test Code:</b>	FLUGX
<b>Method:</b>	Polymerase Chain Reaction (PCR)
<b>Specimen Requirements:</b>	Nasopharyngeal swab (NP) in Universal Transport Media (UTM)
<b>Unacceptable Specimens:</b>	Any other swab other than Dacron or flocked swabs and any other transport media other than UTM or M4.
<b>Storage and Transport:</b>	Transport human respiratory specimens refrigerated at 2 – 8°C. Store specimens refrigerated at 2 – 8°C for up to 72 hours.
<b>Schedule of Testing:</b>	24/7
<b>CPT4 Code:</b>	87502, 87503
<b>Billing Codes:</b>	3010377

If you have any questions about this upgrade in influenza testing service, please contact either Dr. Paul Granato, Director of Microbiology, (315-410-7036) or Mr. Russell Rawling, Manager of the Microbiology Department (315-410-7060).

**References:**

1. [http://en.wikipedia.org/wiki/Swine\\_influenza](http://en.wikipedia.org/wiki/Swine_influenza).
2. Hall, C.B. et al. 2009. The burden of respiratory syncytial virus infection in young children. *N. Engl. J. Med.* 360: 588-598.
3. Falsey, A.R. et al. 1995. Respiratory syncytial virus and influenza A infections in the hospitalized elderly. *J. Infect. Dis.* 172: 389-394.

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