



Creighton MEDICAL LABORATORIES

2009 H1N1 INFLUENZA (SWINE-ORIGIN) UPDATE

Creighton Medical Laboratories offers two tests for the detection of influenza virus, the rapid influenza antigen test and a molecular (RT-PCR) test. It is not yet clear how well these and other tests detect the recent H1N1 (swine) influenza virus. However, the consensus of expert opinion is that these tests are capable of detecting the swine influenza virus. In fact, the manufacturers of the rapid influenza antigen and the RT-PCR test kits that we use at CML have both stated that their products should detect the swine influenza virus. Our recommendations for testing, to include public health guidelines, and a discussion of how well these tests detect normal, seasonal influenza viruses are as follows.

Rapid influenza antigen tests have been available for many years. This test is designed to detect and distinguish influenza A and B viruses. Both CUMC and CML perform this test and it can also be performed in the clinic while the patient waits. It is rapid (20 minutes) and inexpensive, but has low sensitivity (50-70%). Thus a negative may not be reliable if used as the sole test. Specificity is good, so a positive result is reliable if influenza is prevalent in the community.

Molecular tests such as RT-PCR have been developed more recently. RT-PCR is also designed to detect influenza A and B viruses. CML has been offering this test since January 2009. Although this test is more expensive and cannot be performed in the clinic, it is nonetheless rapid (results available within the first weekday after specimen receipt), and more importantly, is more sensitive ($\geq 95\%$) than rapid antigen testing. Specificity is also excellent. This is our recommended test as either an initial test or as a follow up test if the rapid antigen is negative. Viral culture, although the gold standard test, is less clinically useful because of the long turnaround time (2-7 days), past the time where antiviral therapy is optimally effective. Viral culture is not currently available at CML or CUMC.

Current recommendations from the CDC for testing patients with influenza-like illness include collecting a nasopharyngeal swab or aspirate, then performing either a rapid antigen influenza test, a viral culture, or RT-PCR. Tests that are negative by rapid antigen testing may need to be confirmed by either culture or RT-PCR. If RT-PCR is negative or positive for influenza B by either rapid antigen or RT-PCR, no further workup is needed. The RT-PCR performed by CML should detect swine flu viral RNA, but cannot distinguish the swine flu from other type A influenza viruses. If positive for influenza A, CML/CUMC will refer the specimen to the Nebraska Public Health Laboratory for further analysis to rule out swine influenza, which may take several days.

Specimen and Transport Requirements: Respiratory - nasopharyngeal swab or aspirate. Place in transport media on wet ice.

Test Order: Rapid Flu Antigen or Flu A/B RT-PCR

Availability: Performed on weekdays with results available afternoon if specimen received before 10AM.

Please forward this to appropriate staff members within your facility. If you have any questions, please contact CML at (402) 280-4382.

Creighton Medical Laboratories is proud to be your partner in providing effective and timely health care.

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