



FACT SHEET

Interim Guidance for Influenza Diagnostic Testing During the 2008-09 Influenza Season

Influenza Tests

Diagnostic testing should be considered when an institutional outbreak of influenza is suspected or if test results would influence clinical decision making. A variety of tests are available to diagnose influenza. Rapid diagnostic tests have been increasingly used because they can yield results in a clinically relevant time frame, i.e., approximately 15 minutes or less; however, the reference standard for diagnosis of influenza is viral culture or RT-PCR. For a comparison of the various available tests see [Rapid Diagnostic Testing for Influenza](#).

Most of the rapid influenza tests are generally 50-70% sensitive for detecting influenza and approximately >90% specific compared with virus culture. Thus, false negative results occur more commonly than false positive results. The predictive values of influenza tests depend on the level of influenza activity in the community, exposure of the patient to a contagious person, susceptibility of the patient, the characteristics of the tests (sensitivity and specificity), and the adequacy of specimen collection. Inadequate or inappropriate specimens are more likely to yield false negative results. The tests are most reliable when there is known influenza activity in the community and when they are performed on patients who have signs and symptoms consistent with influenza (e.g., fever, cough, sore throat, muscle aches, headache, and malaise) and who are within the first 4 days of illness. However, the symptoms and signs of influenza can vary by age and underlying medical conditions, and not all patients with influenza virus infection will manifest typical symptoms and signs of influenza. Low sensitivities (<50%) have been reported for some rapid influenza tests.

Testing Outpatients for Influenza

Testing does not need to be done on all patients with symptoms of influenza. Once influenza activity has been documented in the community or geographic area, a clinical diagnosis can be made for patients with signs and symptoms consistent with influenza, especially during periods of peak influenza activity in the community. For individual patients seen in ambulatory care settings, tests are most useful when they are likely to help with diagnostic and treatment decisions, such as the use of influenza antiviral agents. It is important to understand that not every patient with influenza will benefit from treatment with antiviral medication. For recommendations on the use of antiviral agents during the 2008-09 influenza season see [Recommended Antiviral Agents for Seasonal Influenza for 2008-09](#).

Testing Inpatients for Influenza

Detection of influenza and prompt implementation of control measures is critical to the control of institutional outbreaks. When there is influenza activity in the community, clinicians should consider influenza testing, including viral culture, for patients who develop signs and symptoms of influenza while they are in a health-care facility. This should be done as part of a broader surveillance strategy for influenza as discussed in [Updated Infection Control Measures for the Prevention and Control of Influenza in Health-Care Facilities](#).

Specimens for Influenza Testing

Nasopharyngeal and nasal specimens (swab, aspirate, wash) are preferred over other upper respiratory samples, such as throat swabs, for diagnostic testing because of higher quantities of detectable virus. Specimens should be collected within the first 4 days of illness. For specific details regarding specimen collection for rapid diagnostic testing, consult package inserts and the laboratory performing the test or see [Clinical Description and Lab Diagnosis of Influenza](#).

Selecting Tests

Other tests can be used to detect influenza virus infection. Immunofluorescence (fluorescent antibody staining) is available at many hospital laboratories and can generally yield test results in 2 to 4 hours and sensitivities are generally higher than rapid tests, but lower than viral culture or RT-PCR. Viral culture is available in many laboratories and has some important advantages over rapid tests, but often does not provide results in time to help with clinical decisions such as the use of antiviral drug treatment. Reverse-transcriptase polymerase chain reaction (RT-PCR) testing for influenza viruses is available at a limited number of laboratories, but results might not be available in a timely manner to assist clinicians. Routine serological testing for influenza requires paired sera, does not provide results to help with clinical decision-making, and is not recommended. Therefore, a rapid influenza test or immunofluorescence are the tests of choice to help with decisions to use antiviral medications. When such tests are not available, the decision to use antiviral medications should be made on clinical grounds rather than waiting for the results of viral culture. For more information on antiviral treatment of influenza see [Antiviral Agents for Seasonal Influenza](#).

Most importantly, the influenza viruses isolated in viral culture are used to characterize the influenza A subtypes and strains of circulating influenza A and B viruses, including the degree of similarity or antigenic drift from vaccine strains, the emergence of antiviral resistance, and the identification of novel human influenza A subtypes of pandemic potential. Since influenza virus strains are continuously evolving, laboratory-based surveillance for influenza viral isolates is critically important to the selection of strains for the next season's influenza vaccine.

For more information, visit www.cdc.gov/flu or call the CDC Flu Information Line at (800) CDC-INFO (English and Spanish) or (800) 243-7889 (TTY).