

Pearl of Knowledge
Evidence-based Summary Documents



Clinical Judgment in Diagnosing and Treating Influenza-like illness

How good are Rapid Influenza Diagnostic Tests (RIDTs) at the point of care for diagnosing 2009 H1N1 influenza? These would ideally make the best use of limited resources like antiviral medications during the current influenza pandemic. Unfortunately, the currently available RIDTs were not designed for and cannot accurately detect H1N1 influenza virus (a negative test is NOT reliable and studies suggest these tests miss about half of H1N1) and they cannot distinguish between different strains of Influenza A. The false positive rate is unknown. Testing is currently not being offered in the clinics because of these problems that could easily mislead clinicians into making incorrect decisions regarding prescribing oseltamivir and zanamavir. Clinicians are being urged to use their clinical judgment to make prescribing decisions for patients who present with acute influenza-like illness (ILI).

How reliable is clinical judgment compared to RIDTs which are designed for the circulating strain in accurately diagnosing influenza? A study done in a large urban emergency department and urgent care ambulatory clinic in 2002 evaluated the accuracy of clinicians' clinical judgment against the use of two other tools, an RIDT designed for the circulating strains and a clinical decision rule (presence of fever and cough).¹ Their findings showed that clinical judgment was as good as either the RIDT or the clinical decision rule. All patients had nasal washes for PCR testing performed. When symptoms had been present for less than 48 hours, clinicians had about 67% sensitivity in diagnosing influenza correctly, compared to 58% for the RIDT and 75% for the clinical decision rule, none of the differences being statistically significant. When symptoms had been present for greater than 48 hours, the sensitivity of clinical judgment fell to 29%, compared with 33% for the RIDT, and 40% for the clinical decision rule.

It appears from this study that use of clinical judgment to make decisions to treat patients for influenza are as good as other available tools, none of which are particularly accurate. At the present time, at least until more accurate rapid testing is available for diagnosing H1N1 infection, we will need to continue to rely on clinical judgment. This will likely result in some overuse of antivirals, but judicious screening for risk factors for complications of influenza may help. We can at least be comfortable that our clinical judgment is reasonably accurate compared to other tools.

What clinical signs and symptoms have been observed with 2009 H1N1 influenza? In the best studied outbreak, in late April 2009 all the students in a New York City high school who had influenza like illness were studied with nasal wash PCRs.² Telephone interviews with the 44 patients with confirmed H1N1 were done on April 27. Illness onset dates ranged from April 20 to April 24. Median age of the patients was 15 years (range: 14--21 years). All were students, with the exception of one student teacher aged 21 years.

Signs and symptoms of all 44 subjects were recorded. Table 1 shows what was found. These data allow a sharpening of clinical judgment. If a patient does not have at least cough and subjective fever, and at least one of the less common symptoms, they probably do not have H1N1 influenza. This is similar to data cited above from a seasonal influenza outbreak where a clinical decision rule of fever and cough was as accurate as any other method in determining who has influenza.¹

Patients, particularly school age ones, who do not have a cough, but do have a sore throat and fever are much more likely right now to have strep than H1N1. If clinically indicated a rapid strep test should be performed on these patients.

Patients who are several days into a mild or moderate influenza like illness who rapidly become sicker are likely to have pneumonia or other secondary bacterial infection. Pneumococcal co-infection is especially likely. A recent MMWR report of autopsy results of 77 patients who died of 2009 H1N1 found 22 had evidence of co-infection with an identified bacteria, including 10 cases with *S. pneumoniae*, six with *S. pyogenes*, seven with *S. aureus*, two with *Streptococcus mitis*, and one with *H. influenzae*; four cases involved multiple pathogens.³ These patients who get sicker a few days into their illness should be evaluated for pneumonia and other secondary infections and treated aggressively.

Table 1. Signs and symptoms of 44 Subjects with 2009 H1N1 Influenza

Symptom	Number	Percent
Cough	43	98%
Subjective fever	42	96%
Fatigue	39	89%
Headache	36	82%
Sore Throat	36	82%
Runny nose	36	82%
Chills	35	80%
Muscle aches	35	80%
Nausea	24	55%
Stomach ache	22	50%
Diarrhea	21	48%
Shortness of breath	21	48%
Joint pain	20	46%

¹ Stein, John, et al. Performance Characteristics of Clinical Diagnosis, a Clinical Decision Rule, and a Rapid Influenza Test in the Detection of Influenza Infection in a Community Sample of Adults. *Annals of Emergency Medicine* 46; 2005: 412-419.

² Swine-Origin Influenza A (H1N1) Virus Infections in a School --- New York City, April 2009. MMWR. May 8, 2009 / 58(17):470-472

³ Bacterial Coinfections in Lung Tissue Specimens from Fatal Cases of 2009 Pandemic Influenza A (H1N1) --- United States, May--August 2009. MMWR September 29, 2009 / 58(Early Release);1-4

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