

Antiviral guidance for suspected, probable, or confirmed novel H1N1 influenza

The CDC urges clinicians, particularly those in primary care (including internists, pediatricians, family practitioners, OB-GYN physicians) and hospital-based care (emergency room, hospitalists, intensivists) to emphasize early, empiric antiviral treatment for hospitalized patients and high-risk outpatients with suspected, probable, or confirmed novel swine-origin influenza A (H1N1) virus infection. Preliminary information indicates that some hospitalized patients with novel influenza A (H1N1) virus infection have not been treated with antivirals or that treatment with antiviral agents was delayed until confirmatory testing was completed. In particular, some patients with chest x-ray evidence of pneumonia and influenza symptoms have not received antivirals early. While data from seasonal influenza indicates that early antiviral treatment is most effective (within 48 hours of symptom onset), some studies have reported a benefit in treating hospitalized patients. Therefore, initiating therapy at the earliest possible time is desirable, including at hospital admission, if patients were not previously treated.

Clinicians should be aware that influenza virus infection can cause primary viral pneumonia and early treatment of people with influenza-related pneumonia is desirable. Additionally, empiric treatment with influenza antiviral medications does not preclude empiric treatment for bacterial co-infections. Specific influenza testing should be performed for any hospitalized patient with suspected novel influenza A (H1N1) virus infection. The CDC Antiviral and Testing recommendations are available at: <http://www.cdc.gov/h1n1flu/recommendations.htm> and <http://www.cdc.gov/h1n1flu/specimencollection.htm>.

Accordingly, the CDC would like to emphasize antiviral treatment for the following:

1. All hospitalized patients with suspected, probable, or confirmed novel influenza A (H1N1) virus infection should be empirically treated with oseltamivir or zanamivir as early after illness onset as possible. No comparative studies have been done to assess whether higher doses or longer treatment courses might be more effective for severely ill patients. However, a longer duration of treatment should be considered for severe illness that persists at the end of the usual 5 day course. Some experts also recommend higher treatment doses (e.g., 150 mg oseltamivir twice per day), based on concerns about the potential for lower oseltamivir absorption, higher viral loads, and reduced delivery of oseltamivir to damaged tissue among severely ill patients. Patients who have received higher treatment doses or longer treatment durations have tolerated these regimens without substantial increase in adverse events, based on limited data.
2. All outpatients with suspected novel influenza A (H1N1) virus infection who are at higher risk for influenza complications should be empirically treated with oseltamivir or zanamivir as early after illness onset as possible.
3. Groups with a higher risk for influenza complications, also to be considered for antiviral chemoprophylaxis if exposed:
 - a. Children younger than 5 years old; highest risk for severe complications from seasonal flu among <2 years old.
 - b. Adults 65 years of age and older.
 - c. Persons with the following conditions:
 - i. Chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological (including sickle cell disease), neurologic, neuromuscular, or metabolic disorders (including diabetes mellitus), morbid obesity;
 - ii. Immunosuppression, including that caused by medications or by HIV;
 - iii. Pregnant women;
 - iv. Persons younger than 19 years of age who are receiving long-term aspirin therapy;
 - v. Residents of nursing homes and other chronic-care facilities.

Table 1. Antiviral medication dosing recommendations for treatment or chemoprophylaxis of novel influenza A (H1N1) infection. (Table extracted from [IDSA guidelines for seasonal influenza](#).)

Agent, group		Treatment	Chemoprophylaxis
Oseltamivir			
Adults		75-mg capsule twice per day for 5 days	75-mg capsule once per day
Children ≥ 12 months	15 kg or less	60 mg per day divided into 2 doses	30 mg once per day
	16-23 kg	90 mg per day divided into 2 doses	45 mg once per day
	24-40 kg	120 mg per day divided into 2 doses	60 mg once per day
	>40 kg	150 mg per day divided into 2 doses	75 mg once per day
Zanamivir			
Adults		Two 5-mg inhalations (10 mg total) twice per day	Two 5-mg inhalations (10 mg total) once per day
Children ≥ 12 months		Two 5-mg inhalations (10 mg total) twice per day (age, 7 years or older)	Two 5-mg inhalations (10 mg total) once per day (age, 5 years or older)
Children < 12 months		http://www.cdc.gov/h1n1flu/recommendations.htm	