

Epi Monthly Report

CDC Issues Interim Recommendations for the Use of Influenza Antiviral Medications in the Setting of Oseltamivir Resistance among Circulating Influenza A (H1N1) Viruses, 2008-09 Influenza Season

Inside this issue:

Although influenza activity is low in the United States to date, preliminary data from a limited number of states indicate that the prevalence of influenza A (H1N1) virus strains resistant to the antiviral medication oseltamivir is high. Therefore, CDC is issuing interim recommendations for antiviral treatment and chemoprophylaxis of influenza during the 2008-09 influenza season. When influenza A (H1N1) virus infection or exposure is suspected, zanamivir or a combination of oseltamivir and rimantadine are more appropriate options than oseltamivir alone. Local influenza surveillance data and laboratory testing can help with physician decision-making regarding the choice of antiviral agents for their patients. The 2008-09 influenza vaccine is expected to be effective in preventing or reducing the severity of illness with currently circulating influenza viruses, including oseltamivir-resistant influenza A (H1N1) virus strains. Since influenza activity remains low and is expected to increase in the weeks and months to come, CDC recommends that influenza vaccination efforts continue.

Background

Influenza A viruses, including two subtypes (H1N1) and (H3N2), and influenza B viruses, currently circulate worldwide, but the prevalence of each can vary among communities and within a single community over the course of an influenza season. In the United States, four prescription antiviral medications (oseltamivir, zanamivir, amantadine and rimantadine) are approved for treatment and chemoprophylaxis of influenza. Since January 2006, the neuraminidase inhibitors (oseltamivir, zanamivir) have been the only recommended influenza

antiviral drugs because of widespread resistance to the adamantanes (amantadine, rimantadine) among influenza A (H3N2) virus strains. The neuraminidase inhibitors have activity against influenza A and B viruses while the adamantanes have activity only against influenza A viruses. In 2007-08, a significant increase in the prevalence of oseltamivir resistance was reported among influenza A (H1N1) viruses worldwide. During the 2007-08 influenza season, 10.9% of H1N1 viruses tested in the U.S. were resistant to oseltamivir. Influenza activity has been low thus far this season in the United States. As of December 19, 2008, a limited number of influenza viruses isolated in the U.S. since October 1 have been available for antiviral resistance testing at CDC. Of the 50 H1N1 viruses tested to date from 12 states, 98% were resistant to oseltamivir, and all were susceptible to zanamivir, amantadine and rimantadine. Preliminary data indicate that oseltamivir-resistant influenza A (H1N1) viruses do not cause different or more severe symptoms compared to oseltamivir sensitive influenza A (H1N1) viruses.

Influenza A (H3N2) and B viruses remain susceptible to oseltamivir. The proportion of influenza A (H1N1) viruses among all influenza A and B viruses that will circulate during the 2008-09 season cannot be predicted, and will likely vary over the course of the season and among communities. Oseltamivir-resistant influenza A (H1N1) viruses are antigenically similar to the influenza A (H1N1) virus strain represented in 2008-09 influenza vaccine, and CDC recommends that influenza vaccination efforts continue as the primary method to prevent influenza.

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Oseltamivir resistance among circulating influenza A (H1N1) virus strains presents challenges for the selection of antiviral medications for treatment and chemoprophylaxis of influenza, and provides additional reasons for clinicians to test patients for influenza virus infection and to consult surveillance data when evaluating persons with acute respiratory illnesses during influenza season. These interim guidelines provide options for treatment or chemoprophylaxis of influenza in the United States if oseltamivir-resistant H1N1 viruses are circulating widely in a community or if the prevalence of oseltamivir resistant H1N1 viruses is uncertain.

Interim Recommendations

Persons providing medical care for patients with suspected influenza or persons who are candidates for chemoprophylaxis against influenza should consider the following guidance for assessing and treating patients during the 2008-09 influenza season.

1) Review local or state influenza virus surveillance data weekly during influenza season, to determine which types (A or B) and subtypes of influenza A virus (H3N2 or H1N1) are currently circulating in the area. For some communities, surveillance data might not be available or timely enough to provide information useful to clinicians.

2) Consider use of influenza tests that can distinguish influenza A from influenza B.

a. Patients testing positive for influenza B may be given either oseltamivir or zanamivir (no preference) if treatment is indicated.

b. At this time, if a patient tests positive for influenza A, use of zanamivir should be considered if treatment is indicated. Oseltamivir should be used alone only if recent local surveillance data indicate that circulating viruses are likely to be influenza A (H3N2) or influenza B viruses. Combination treatment with oseltamivir and rimantadine is an acceptable alternative, and might be necessary for patients that cannot receive zanamivir, (e.g., patient is <7 years old, has chronic underlying airways disease, or cannot use the zanamivir inhalation device), or zanamivir is unavailable. Amantadine can be substituted for rimantadine if rimantadine is unavailable.

c. If a patient tests negative for influenza, consider treatment options based on local influenza activity and clinical impression of the likelihood of influenza. Because rapid antigen tests may have low sensitivity, treatment should still be considered during periods of high influenza activity for persons with respiratory symptoms consistent with influenza who test negative and have no alternative diagnosis. Use of zanamivir should be considered if treatment is indicated. Combination treatment with oseltamivir and rimantadine (substitute amantadine if rimantadine unavailable) is an acceptable alternative. Oseltamivir should be used alone only if recent local surveillance data indicates that circulating viruses are likely to be influenza A (H3N2) or influenza B viruses.

d. If available, confirmatory testing with a diagnostic test capable of distinguishing influenza caused by influ-

enza A (H1N1) virus from influenza caused by influenza A (H3N2) or influenza B virus can also be used to guide treatment. When treatment is indicated, influenza A (H3N2) and influenza B virus infections should be treated with oseltamivir or zanamivir (no preference). Influenza A (H1N1) virus infections should be treated with zanamivir or combination treatment with oseltamivir and rimantadine is an acceptable alternative.

3) Persons who are candidates for chemoprophylaxis (e.g., residents in an assisted living facility during an influenza outbreak, or persons who are at higher risk for influenza-related complications and have had recent household or other close contact with a person with laboratory confirmed influenza) should be provided with medications most likely to be effective against the influenza virus that is the cause of the outbreak, if known. Respiratory specimens from ill persons during institutional outbreaks should be obtained and sent for testing to determine the type and subtype of influenza A viruses associated with the outbreak and to guide antiviral therapy decisions. Persons whose need for chemoprophylaxis is due to potential exposure to a person with laboratory-confirmed influenza A (H3N2) or influenza B should receive oseltamivir or zanamivir (no preference). Zanamivir should be used when persons require chemoprophylaxis due to exposure to influenza A (H1N1) virus. Rimantadine can be used if zanamivir use is contraindicated.

Enhanced surveillance for influenza antiviral resistance is ongoing at CDC in collaboration with local and state health departments. Clinicians should remain alert for additional changes in recommendations that might occur as the 2008-09 influenza season progresses. Oseltamivir resistant influenza A (H1N1) viruses are antigenically similar to the influenza A (H1N1) viruses represented in the vaccine, and vaccination should continue to be considered the primary prevention strategy regardless of oseltamivir sensitivity. Information on antiviral resistance will be updated in weekly surveillance reports (available at <http://www.cdc.gov/flu/weekly/fluactivity.htm>).

For more information on antiviral medications and additional considerations related to antiviral use during the 2008-09 influenza season, visit <http://www.cdc.gov/flu/professionals/antivirals/index.htm>.

If you have any questions about this Health Alert, please call the Miami-Dade County Health Department, Epidemiology, Disease Control and Immunization Services at 305-470-5660.

Epi-monthly Announcement:

Greetings!

Happy Holidays to all!

May this festive holiday season bring you great joy and peace. Have a wonderful time with family and friends.



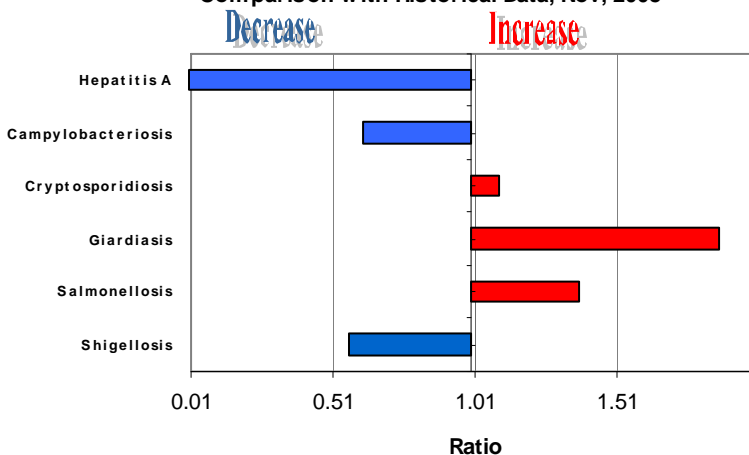
Sincerely,

Dr. Leguen

DECEMBER IS...

- Hand Washing Awareness
- Safe Toys & Gifts Month
- Drunk and Drugged Driving Prevention Month
- World AIDS Day, Dec. 1

**Selected Notifiable Disease Reports, Miami-Dade County,
Comparison with Historical Data, Nov, 2008**

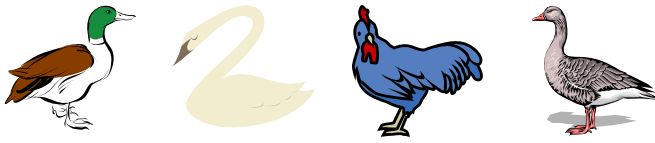


**TO REPORT ANY DISEASE AND FOR INFORMATION CALL:
Office of Epidemiology and Disease Control**

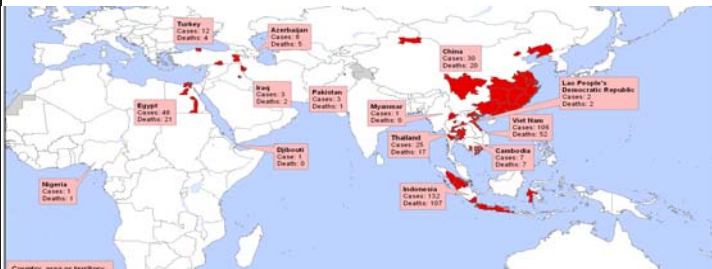
- Childhood Lead Poisoning Prevention Program305-470-6877
- Hepatitis305-470-5536
- Other diseases and outbreaks305-470-5660
- HIV/AIDS Program305-470-6999
- STD Program305-325-3242
- Tuberculosis Program 305-324-2470
- Immunization Service;305-470-5660
- To make an appointment.....786-845-0550

AVIAN FLU WATCH

Unless indicated, information is current as of
December 2008



- Since 2003, there have been 391 human cases of avian influenza (H5N1) confirmed by the World Health Organization (WHO). Of these, 247 cases have died. This means there is a 63% (247/391) fatality rate.
- **15 Countries with confirmed human cases** include Bangladesh, Cambodia, China, Djibouti, Indonesia, Thailand, Vietnam, Iraq, Azerbaijan, Egypt, Turkey, Nigeria, Pakistan, Myanmar, and Lao People's Democratic Republic .



- **No human cases of avian influenza (H5N1) have been reported in the United States.**
 - **H5N1 has been confirmed in birds in several other countries since 2003.** H5N1 has been documented in birds in more than 30 countries in Europe & Eurasia, South Asia, Africa, East Asia and the Pacific, and the Near East. For a list of these countries, visit the World Organization for Animal Health Web Site at :
http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm.
 - **No restrictions on travel to affected countries have been imposed.** Travelers should avoid contact with live poultry and monitor their health for ten days after returning from an affected country.
- SOURCES: WHO, OIE, CDC

PARTICIPATE IN INFLUENZA SENTINEL PROVIDER SURVEILLANCE

The Miami-Dade County Health Department
NEEDS Influenza Sentinel Providers!!

Sentinel providers are key to the success of the Florida Department of Health's Influenza Surveillance System. Data reported by sentinel providers gives a picture of the influenza virus and ILI activity in the U.S. and Florida which can be used to guide prevention and control activities, vaccine strain selection, and patient care.

- Providers of any specialty, in any type of practice, are eligible to be sentinel providers.
- Most providers report that it takes **less than 30 minutes a week** to compile and report data on the total number of patients seen and the number of patients seen with influenza-like illness.
- Sentinel providers can submit specimens from a subset of patients to the state laboratory for virus isolation **free of charge**.

For more information, please contact **Erin O'Connell** at 305-470-5660.

About the Epi Monthly Report

The Epi Monthly Report is a publication of the Miami-Dade County Health Department, Office of Epidemiology and Disease Control, The publication serves a primary audience of physicians, nurses, and public health professionals. Articles published in the Epi Monthly Report may focus on quantitative research and analysis, program updates, field investigations, or provider education. For more information or to submit an article, contact Lizbeth Londoño at 305-470-6918.

Monthly Report
Selected Reportable Diseases/Conditions in Miami-Dade County,
November 2008

Diseases/Conditions	2008 this Month	2008 Year to Date	2007 Year to Date	2006 Year to Date	2005 Year to Date	2004 Year to Date
AIDS ^{*Provisional}	73	1068	759	1073	1156	1253
Campylobacteriosis	6	134	133	150	129	127
Ciguatera Poisoning	0	19	4	0	0	0
Cryptosporidiosis	3	55	47	35	35	17
Cyclosporiasis	0	5	0	0	20	2
Dengue Fever	0	6	3	3	3	5
<i>E. coli</i> , O157:H7	0	3	4	1	0	5
<i>E. coli</i> , Non-O157	0	0	2	0	1	1
Encephalitis (except WNV)	0	5	3	0	0	1
Encephalitis, West Nile Virus	0	0	1	0	0	15
Giardiasis, Acute	40	257	239	199	199	259
Hepatitis A	0	29	29	46	59	40
Hepatitis B	0	14	18	24	45	35
HIV ^{*Provisional}	83	1435	1314	1071	1231	1507
Influenza A (H5)	0	0	0	0	0	0
Influenza Isolates	0	0	0	0	0	0
Influenza Novel Strain	0	0	0	0	0	0
Influenza, Pediatric Death	0	0	0	0	0	0
Lead Poisoning	7	162	156	133	160	278
Legionnaire's Disease	0	6	3	9	8	11
Leptospirosis	0	0	0	0	2	0
Lyme disease	0	8	7	0	0	3
Malaria	2	13	9	15	10	18
Measles	0	0	0	0	0	1
Meningitis (except aseptic)	0	3	9	12	11	11
Meningococcal Disease	0	8	8	13	6	20
Mumps	1	6	3	0	0	0
Pertussis	4	26	26	8	9	9
Rubella	0	1	0	0	0	0
Rubella, Congenital	0	0	0	0	0	0
Salmonellosis	62	481	386	550	550	409
Shigellosis	8	61	112	137	242	143
<i>Streptococcus pneumoniae</i> , Drug Resistant	14	107	84	92	59	59
Tetanus	0	0	0	0	0	0
Toxoplasmosis	0	1	3	0	9	11
Tuberculosis ^{*Provisional}	14	161	178	186	230	194
Typhoid Fever	0	1	2	6	2	3
<i>Vibrio cholera</i> Type O1	0	0	0	0	0	0
<i>Vibrio cholera</i> Non-O1	0	0	0	0	0	0
<i>Vibrio</i> , Other	0	0	0	0	0	0
West Nile Fever	0	0	0	0	0	6



*Data on AIDS are provisional at the county level and are subject to edit checks by state and federal agencies.

** Data on tuberculosis are provisional at the county level.