



**PANDEMIC INFLUENZA:
ANSWERS TO FREQUENTLY ASKED QUESTIONS**

Influenza (“flu”) epidemics are responsible for approximately 36,000 deaths and 226,000 excess hospitalizations per year. The burden of disease is particularly high among young children, adults with chronic medical conditions, and the elderly. Influenza activity usually peaks in February each year, but the influenza season can start as early as October and last until May.

An influenza pandemic is a global outbreak that occurs when a new influenza A virus emerges in the human population, causes serious illness, and then spreads easily from person to person worldwide. Pandemics are different from seasonal outbreaks of influenza. Seasonal outbreaks are caused by subtypes of influenza viruses that are already in existence among people, whereas pandemic outbreaks are caused by new subtypes or by subtypes that have never circulated among people or that have not circulated among people for a long time.

Pandemic influenza has become a priority for local, state, and federal public health officials; however, many questions about the potential for an influenza pandemic have emerged from the public health community. As a result, the Miami-Dade County Health

Department has developed the following set of frequently asked questions about pandemic influenza.

How would a pandemic influenza strain emerge?

There are three influenza viral types: A, B, and C. Type A can be further divided into subtypes, which differ based on two proteins on the surface of the virus: the “HA” protein and the “NA” protein. There are 15 known “HA” subtypes (H1-H15) and 9 known “NA” subtypes (N1-N9). These proteins are the primary targets of immunity, vaccines, and antivirals. Pandemic viruses emerge as a result of a process called “antigenic shift,” which causes a sudden, major change in influenza A viruses. These changes are caused by new combinations of the “HA” and/or “NA” proteins, resulting in a new influenza A virus subtype to which most people have no immunity.

I’ve heard that the pandemic influenza strain is likely to come from birds. If this is true, then how would the virus get to humans?

Certain subtypes of influenza A are specific to certain species; however,

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Fermin Leguen MD, MPH
Chief Physician
Director

Office of Epidemiology
and Disease Control
Miami-Dade County Health
Department

8600 NW 17th Street
Suite 200
Miami, Florida 33126

Tel: (305) 470-5660
Fax: (305) 470-5533

E-mail:
fermin_leguen@doh.state.fl.us

Website:
www.dadehealth.org

influenza A viruses normally seen in one species sometimes can cross over and cause illness in another species. Birds are host to all subtypes of influenza A. Because of this, it is possible that an Avian (bird) influenza virus could mix with a human influenza virus, producing a new virus to which humans have little or no immunity to.

Close proximity between humans and birds could lead to Avian flu transmission. This includes human travel to poultry farms, contact with animals in live food markets, and use of surfaces that appear to be contaminated with feces from poultry or other animals.

Have there been influenza pandemics before? If so, how bad were they?

In the 20th century, there were three influenza pandemics. The most devastating was the “Spanish flu” pandemic that occurred in 1918-19. Forty million people died worldwide, and there were about 675,000 U.S. deaths. The 1957 and 1968 pandemics caused 70,000 and 34,000 deaths in the United States, respectively. Both the 1957-58 and 1968-69 pandemics were caused by viruses containing a combination of genes from a human influenza virus and an avian influenza virus. The origin of the 1918-19 pandemic virus is not clear.

Is the risk for pandemic influenza very high right now?

Experts are unsure of exactly when the next pandemic will occur; however, history has shown that there are (on average) 3 pandemics per century, occurring at intervals of 10-50 years. It has been 36 years since the last pandemic. Additionally, modern global conditions (e.g. increased international travel, greater urbanization, larger global population) generally contribute to increased disease transmission, making an influenza pandemic more likely. A novel influenza strain has been documented in several Southeast Asian countries; however, most of these cases occurred from direct contact with in-

fectured poultry or contaminated surfaces. There has been no evidence of the sustained person-to-person transmission that would be necessary for a pandemic to occur.

Are there any treatment options for pandemic influenza?

Four different influenza antiviral medications (amantadine, rimantadine, oseltamivir, and zanamivir) are approved by the U.S. Food and Drug Administration for the treatment and/or prevention of influenza. All four work against influenza A viruses. However, sometimes influenza virus strains can become resistant to one or more of these drugs, and thus the drugs may not always work. For example, the influenza A (H5N1) viruses identified in human patients in Asia in 2004 and 2005 have been resistant to amantadine and rimantadine. Neuraminidase inhibitors (Oseltamivir and Zanamivir) are considered the drugs of choice from the control of influenza under pandemic conditions. Monitoring of avian viruses for resistance to influenza antiviral medications is continuing.

What about vaccine?

The pandemic strain will be a novel strain of influenza; therefore, a vaccine probably would not be available in the early stages of a pandemic. When a new vaccine against an influenza virus is being developed, scientists around the world work together to select the virus strain that will offer the best protection against that virus, and then manufacturers use the selected strain to develop a vaccine. Once a potential pandemic strain of influenza virus is identified, it takes several months before a vaccine will be widely available. If a pandemic occurs, it is expected that the U.S. government will work with many partner groups to make recommendations to guide the early use of vaccine.



What should I do if I suspect that a patient has avian influenza?

An important function of whether or not to test for avian influenza is to determine the following: if the patient has a travel history within ten days of symptom onset that may have exposed him/her to avian flu (e.g. travel to Southeast Asia); if the patient has had close contact with someone who has traveled to Asia recently; and whether the patient has been tested for human influenza A/B and other respiratory viruses. Additionally, the patient should meet the current clinical case definition, which includes a history of fever $\geq 100^{\circ}\text{F}$, sore throat, and/or cough. If you suspect that a patient has avian influenza, be sure to adhere to droplet precautions during the care of the patient. Next, contact the Miami-Dade County Health Department. Our staff can give you specific guidelines on specimen collection. All specimens should be collected within 72 hours of illness onset. All specimens must be processed through the Miami-Dade County Health Department in order to be tested by state and federal health authorities. Do not send the specimen directly to CDC or to the state health department labs. Testing is provided free of charge.

What are health authorities doing about pandemic influenza?

The World Health Organization (WHO) has developed a global influenza preparedness plan, which defines the stages of a pandemic, outlines WHO's role and makes recommendations for national measures before and during a pandemic. The Miami-Dade County Health Department is currently using WHO and CDC recommendations to develop and test a county-level pandemic response plan.

What can health providers do?

Providers can make the most valuable impact by continuing to be vigilant about influenza prevention and surveillance measures. Here are a few actions that providers can take:

- **Vaccinate**

Encourage persons in priority groups (see recommendations) to receive flu shots each fall. Although the vaccine currently available will not prevent infection with the pandemic strain, it can reduce the risk of infection with existing human strains.

- **Educate**

Talk to patients and staff about influenza prevention. Encourage them to practice good respiratory hygiene. Suggest that they avoid close contact with people who are sick; stay home when they are sick; cover the mouth and nose when coughing; wash hands often; and avoid touching the nose, mouth, or hands frequently.

- **Participate**

Health providers can participate in one or more of the health department's influenza surveillance programs. These include a sentinel physician's program and a multi-component hospital surveillance program. Sentinel physicians can receive free influenza testing kits from the health department. Individual providers should also continue to report all outbreaks to the local health department. For more information or to participate in the influenza surveillance programs, contact Edhelene "Gigi" Rico at (305) 470-5660.

For more information on pandemic influenza, visit the following websites:

- <http://www.cdc.gov/flu/avian/gen-info/facts.htm>
- <http://www.cdc.gov/flu/avian/gen-info/pandemics.htm>



Who should get vaccinated?

In past years, there have been some problems with vaccine supply. Because of this, the Centers for Disease Control and Prevention (CDC) recommends reserving vaccine for those at highest risk of severe influenza-related illness. Only the following persons should get vaccinated until October 24, 2005:

- persons aged ≥ 65 years with comorbid conditions
- residents of long-term-care facilities
- persons aged 2--64 years with comorbid conditions
- persons aged ≥ 65 years without comorbid conditions
- children aged 6--23 months
- pregnant women
- health-care personnel who provide direct patient care
- household contacts and out-of-home caregivers of children aged < 6 months

Additionally, persons displaced by Hurricane Katrina living in crowded group settings (e.g. shelters) should also get vaccinated.

Beginning October 24, 2005, all persons can get a flu shot.

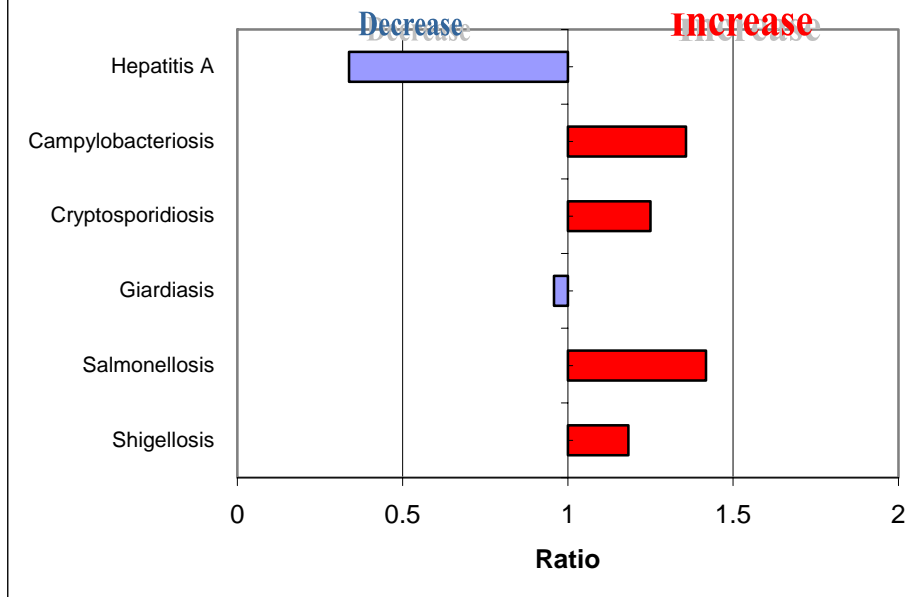
TO REPORT ANY DISEASE AND FOR INFORMATION CALL:



Office of Epidemiology and Disease Control

Childhood Lead Poisoning Prevention Program	(305) 470-6877
Hepatitis	(305) 470-5536
Other diseases and outbreaks	(305) 470-5660
HIV/AIDS Program	(305) 470-6999
STD Program	(305) 325-3242
Tuberculosis Program	(305) 324-2470
Special Immunization Program	(786) 845-0550

Selected Notifiable Disease Reports, Miami-Dade County, Comparison with Historical Data, August, 2005



*Ratio of current month total to mean of 15 month totals (from previous, comparable, and subsequent month periods for the past 5 years).



Monthly Report

Selected Reportable Diseases/Conditions in Miami-Dade County, August 2005

Diseases/Conditions	2005 this Month	2005 Year to Date	2004 Year to Date	2003 Year to Date	2002 Year to Date	2001 Year to Date
AIDS ^{*Provisional}	118	976	987	678	775	884
Animal Rabies	0	0	0	0	0	1
Campylobacteriosis	20	103	103	88	69	86
<i>Chlamydia trachomatis</i>	267	2510	3193	2966	3221	2370
Ciguatera Poisoning	0	0	0	0	0	0
Cryptosporidiosis	3	18	15	9	4	11
Cyclosporiasis	0	11	1	1	1	0
Dengue Fever	1	1	3	1	2	3
Diphtheria	0	0	0	0	0	0
<i>E. coli</i> , O157:H7	0	0	2	0	0	0
<i>E. coli</i> , Non-O157	0	1	0	2	1	1
<i>E. coli</i> , Other	0	0	0	0	0	0
Encephalitis (except WNV)	0	0	1	0	1	0
Encephalitis, West Nile Virus	0	0	11	1	0	0
West Nile Fever	0	0	3	0	0	0
Giardiasis, Acute	26	140	207	117	144	172
Gonorrhea	116	1061	1183	1261	1396	1223
Hepatitis A	5	38	29	39	97	103
Hepatitis B	5	35	26	42	22	42
HIV ^{*Provisional}	154	1054	1234	1107	1344	1121
Lead Poisoning	8	113	197	173	186	184
Legionnaire's Disease	0	2	7	4	1	1
Leptospirosis	0	2	0	0	0	0
Lyme disease	0	0	3	4	1	5
Malaria	3	7	11	8	8	12
Measles	0	0	1	0	0	0
Meningitis (except aseptic)	2	11	8	6	4	7
Meningococcal Disease	0	5	12	3	11	13
Mumps	0	0	0	0	0	0
Pertussis	1	9	9	7	4	1
Polio	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Rubella, Congenital	0	0	0	0	0	0
Salmonellosis	64	319	294	300	199	169
Shigellosis	25	192	124	213	164	86
<i>Streptococcus pneumoniae</i> , Drug Resistant	10	53	54	87	82	130
Syphilis, Infectious	16	110	138	115	139	143
Syphilis, Other	49	398	576	704	715	549
Tetanus	0	0	0	0	0	1
Toxoplasmosis	2	9	4	6	14	10
Tuberculosis ^{*Provisional}	21	125	152	143	147	139
Typhoid Fever	0	2	2	3	2	0
<i>Vibrio cholera</i> Type O1	0	0	1	0	0	0
<i>Vibrio cholera</i> Non-O1	0	0	0	0	1	0
<i>Vibrio</i> , Other	0	0	0	1	0	0

* 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.

