



HEALTH CARE PROVIDER FACT SHEET

AVIAN INFLUENZA

November 2005

This fact sheet is intended to provide basic information and links to resources that clinicians can use to assist them when discussing avian influenza with concerned patients. This document will be updated as necessary when new information is available from CDC.

Influenza viruses – a brief overview

Influenza, commonly called "the flu," is caused by the influenza virus, which infects the respiratory tract (nose, throat, lungs). Unlike many other viral respiratory infections, such as the common cold, the flu can cause severe illness and life-threatening complications in many people. There are three influenza virus types: A, B, and C. Influenza A virus can infect a variety of animals, including, but not limited to humans, birds, pigs, horses, seals, and whales. Influenza A viruses are divided into subtypes based on proteins on the surface of the virus [hemagglutinin (HA) and neuraminidase (NA)]. Wild birds (i.e., migratory waterfowl) are the natural reservoir for all known subtypes of influenza A virus. Only three influenza A subtypes (H1N1, H1N2, and H3N2) are currently in general circulation among humans. Influenza type A poses the greatest risk for human epidemics or pandemics.

Influenza B viruses are normally found only in humans and are not classified into subtypes. Although influenza B viruses can cause human epidemics, they have not caused pandemics.

Influenza type C viruses cause mild illness in humans and do not cause epidemics or pandemics. These viruses are not classified according to subtype. Humans are the only known reservoir for influenza B and C.

What is avian influenza (AI)?

AI or "bird flu" is a contagious disease of animals caused by influenza type A. Wild birds, the natural reservoir for AI, can transmit the virus to other bird species in which it can cause disease. All bird species are thought to be susceptible to infection. Domestic poultry flocks are especially vulnerable to infections that can quickly reach epizootic proportions and result in very large die-offs.

The disease in birds has two forms. The first causes mild illness and is referred to as low pathogenic AI (LPAI). Of greater concern is the second form, known as highly pathogenic AI (HPAI), which causes severe illness. HPAI is extremely contagious among susceptible birds and can be rapidly fatal. In fact, birds can die within 24 hours of illness onset. Human infection with both HPAI and LPAI can occur; however, the current situation in Asia has been associated with HPAI.

What is the clinical presentation of AI in humans?

What we currently know about the presentation of AI is based on case series describing the clinical features and epidemiology of human cases of influenza A (subtype H5N1). Human illness caused by H5N1 is characterized by fever and upper- (e.g., rhinorrhea, sore throat) and

lower-respiratory symptoms (e.g., cough, shortness of breath). Gastrointestinal symptoms, namely abdominal pain and diarrhea, have also been described. Laboratory abnormalities include leukopenia, lymphopenia, thrombocytopenia, and abnormal liver enzymes. Chest radiograph abnormalities have also been observed. Of note, patients with H5N1 infection are at risk of major complications, including primary viral pneumonia and death. Symptoms generally appear three to seven days after exposure and can last up to seven days. People with AI are infectious for at least seven days where children can be infectious for up to 21 days after symptom onset. Humans infected with the current circulating influenza A viruses (H1N1, H1N2, and H3N2) are contagious 24 hours before symptom onset. Not enough human-to-human transmission of AI has occurred to accurately depict the infectious period of individuals with AI. Persons with antibodies to AI but who have no history of clinical illness have been reported and this suggests that asymptomatic infection is possible. It is unclear at this time if these individuals are capable of transmitting the infection.

Who is at increased risk for getting AI?

Those individuals who have traveled to areas where HPAI has been identified and had contact with poultry on farms or visited live animal markets are at increased risk. Additionally, any individual with occupational exposure to poultry or poultry droppings may be at an increased risk if the flocks they are exposed to develop AI.

What tests are available to diagnose AI?

Commercially available rapid-antigen influenza tests can be performed to quickly determine if the patient has influenza A and/or B, but these tests do not determine influenza A subtypes. When indicated, subtyping can be performed at the New Jersey Public Health and Environmental Laboratories. To arrange this testing, contact New Jersey Department of Health and Senior Services (NJDHSS) Communicable Disease Service at 609-588-7500 during normal business hours and 609-392-2020 during nights, weekends, and holidays.

What is the treatment for AI?

Four antiviral drugs (amantadine, rimantadine, oseltamivir, and zanamivir) are approved by the U.S. Food and Drug Administration for the treatment of influenza. All four have activity against influenza type A viruses. However, influenza strains can become resistant to these drugs, and therefore the drugs may not always be effective. For example, analyses of some of the H5N1 viruses isolated from poultry and humans in Asia in 2004 have shown that this subtype is resistant to two medications—amantadine and rimantadine. Oseltamivir has demonstrated effectiveness against H5N1. Monitoring of avian viruses for resistance to influenza antiviral medications is ongoing.

Chemoprophylaxis with antivirals is not recommended for individuals who have traveled to areas where AI has been identified. Additional recommendations for travelers can be found at: http://www.cdc.gov/travel/other/avian_influenza_se_asia_2005.htm

What can I do to protect other clients or staff who may come in contact with potentially infected individuals?

All patients who present to a healthcare setting with fever and respiratory symptoms should be managed according to recommendations for Universal Respiratory Precautions (<http://nj.gov/health/flu/education.shtml> or <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>) and questioned regarding their recent travel history. Patients with a history of travel within 10 days to a country with AI activity and are hospitalized with a severe febrile respiratory illness, or are otherwise under evaluation for AI, should be managed using the following precautions.

- Pay careful attention to hand hygiene before and after all patient contact or contact with items potentially contaminated with respiratory secretions.
- Patients should be asked to self-report influenza-like symptoms immediately upon arrival or when making an appointment. When they arrive, patients should be asked to enter through a separate door directly into an exam room and should be asked to wear a mask or use tissues to cover their mouth and nose.
- Waiting areas should have information on Universal Respiratory Precautions posted, ample supplies of tissues with proper receptacles for disposal, and a hand sanitizer if hand-washing facilities are not available.
- Patients with respiratory illnesses should be kept as far from other patients as possible (at least 3 feet) if they cannot be removed from the common space. They should also be evaluated as expeditiously as possible. Surgical masks should be provided to sick patients if patients cannot be kept 3 feet apart.
- Staff caring for these individuals should wear appropriate personal protective equipment. For avian influenza, standard and droplet precautions are recommended; current evidence suggests that droplet precautions provide adequate protection while caring for patients with avian influenza. A health care worker may choose to wear an N-95 respirator; however, surgical masks are considered adequate to prevent infections transmitted via droplets. NJDHSS continues to be actively involved in discussions with the CDC and other stakeholders regarding this matter and will provide updates as they become available.
- The use of objects shared by patients, such as pens, pencils and clipboards should be evaluated and procedures should be put in place to minimize contamination (e.g., disposable pens or pencil, wipes for clipboards, doorknobs). Medical equipment used in the care of patients with respiratory illness (e.g., stethoscopes, thermometers) should be appropriately disinfected after use.

For additional information regarding these precautions, see http://nj.gov/health/flu/documents/flu_scg_110904.pdf and <http://www.cdc.gov/flu/avian/professional/infect-control.htm>

What can I tell patients about how to protect themselves and their families?

Things patients can do to protect themselves and their families from respiratory illness in general (and not just influenza) include:

- Cover your mouth and nose with a tissue when coughing or sneezing. Throw away the tissue and wash your hands with soap and water.
- If you don't have a tissue, cover your mouth and nose with your hands and then wash your hands with soap and water.
- When soap and water are not available, use alcohol-based disposable hand wipes or hand sanitizers.

- Keep your hands away from your eyes, nose, and mouth.
- Stay away from people who are sick.
- If possible, sick persons should wear a surgical mask when others are present. If these individuals cannot wear a mask, then persons in close contact with the sick person should wear a mask. Masks should fit snugly around the face and should not be touched or handled during use. Do not share masks. Throw away used masks. Surgical masks become ineffective when damp with moisture, therefore masks should be changed frequently to prevent this from occurring.
- Stay home when you are sick.
- Avoid crowded places if possible.

Is AI going to be the next pandemic?

An epidemic occurs when the observed number of cases exceeds the expected number of cases of a given disease in a given time period. A pandemic occurs when an epidemic spreads rapidly across many geographic locations, such as in different countries and continents. While over 100 individuals in Asia (as of 10/10/05,

http://www.who.int/csr/disease/avian_influenza/country/cases_table_2005_10_10/en/index.html) have contracted AI, this strain has rarely been transmissible from person to person. We do not know if this strain eventually will be the cause of the next pandemic or if it will disappear and another influenza virus will become the next pandemic. However, history tells us that there will be one. To prepare for that eventuality, NJDHSS has developed an Influenza Pandemic Plan that is updated periodically. It is available at: <http://nj.gov/health/flu/pandemic.shtml>. It describes the responsibilities of governmental public health care agencies, hospitals, and other public health partners. Additionally, NJDHSS performs influenza-like illness surveillance that can assist in early detection of problems caused by all types of influenza. Additional information is available at: <http://nj.gov/health/flu/surveillance.shtml>.

Is there anything else I can do?

To limit the spread of communicable diseases, early detection is paramount, and AI is no exception. The sooner cases are identified, the sooner contacts can be located, which can lead to swift and targeted implementation of infection control measures. To aid in identifying suspect cases of AI, health care providers should ask patients with influenza-like illness about high-risk exposures such as travel abroad or contact with birds (poultry, migratory birds, farms, or live animal markets). **Any suspect case of AI should be reported to the health department immediately.**

Resources/References:

<http://nj.gov/health/flu/index.shtml>

<http://www.cdc.gov/flu/avian/index.htm>

<http://www.cdc.gov/flu/professionals/index.htm> (Health Care Professionals)

<http://www.cdc.gov/flu/professionals/flugallery/index.htm> (Public)

[Yuen KY, Chan PK, Peiris M, Tsang DN, Que TL, Shortridge KF, et al.](#) Clinical features and rapid viral diagnosis of human disease associated with avian influenza A H5N1 virus. Lancet. 1998 Feb 14;351(9101):467-71.

[Tran TH, Nguyen TL, Nguyen TD, Luong TS, Pham PM, Nguyen VC, et al.](#) Avian influenza A (H5N1) in 10 patients in Vietnam. N Engl J Med. 2004 Mar 18;350(12):1179-88.