

Last updated: February 1, 2008

## Definition:

Infectious bird disease caused by type A strains of the influenza virus. Current strain is subtype H5N1. Occurs worldwide. Strain prone to mutation that can be rapid. Virus strain initially identified in the 1950s. Humans lack natural immunity.

## Spread:

Current strain spreading through migratory birds at a rate of 30-to-50 Km per day. Human infections have occurred through direct, close contact with poultry. Humans infected through the following routes: oral/fecal, ingestion (drinking raw duck blood), and possibly inhalation. Although some have been suspected, no cases of human-to-human transmission have been confirmed.

## Mortality:

As of February 1, 2008, 357 human cases (9 additional cases since January) with 225 deaths (9 additional deaths this month) = 63% mortality rate (62% last month)

## Risks:

If and when the virus develops the ability to be transmitted from human to human, spread is likely to occur rapidly and on a global basis, resulting in a pandemic. This can occur through two basic mechanisms:

- ❑ **Antigenic drift:** Through mutation, virus becomes capable of infecting humans from a human source.
- ❑ **Antigenic shift (reassortment):** Intermediate host (for example, human or pig) can harbor two influenzas simultaneously, resulting in a new virus type with characteristics of both. This would result in a type of virus that could spread effectively and against which humans would have little or no immunity.

## Affected Countries (Human Cases):

Azerbaijan (8), Cambodia (7), China (27), Djibouti (1), Egypt (43), Indonesia (124), Iraq (3), Laos (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (102)

## Prevention and Treatment:

- ❑ **Prevention:** Vaccine in initial stages of development, 2 million doses produced but dosage not determined and effectiveness for younger and older populations not yet determined. All doses in the hands of government bodies.
- ❑ **Treatment:** Tamiflu (and Relenza) can be effective for limited prevention and treatment of symptoms. Tamiflu is superior in terms of ease of administration and population effectiveness. Should only be used for individuals actively at risk. Course of treatment must begin 6 to 48 hours from onset of symptoms to be effective.

## Control Measures:

- ❑ **Heat:** Virus killed by heat (56 degrees C for 3 hours or 60 degrees C for 30 minutes)
- ❑ **Common disinfectants:** Formalin and iodine-based compounds and detergents
- ❑ **Infection control measures:** Frequent hand washing, no ingestion of raw or undercooked poultry products

## History:

Previous pandemics:

- ❑ 1918-1919 more than 40 million deaths worldwide
- ❑ 1957-58 more than 1 million deaths
- ❑ 1968-69 more than 1 million deaths

By comparison:

- ❑ Death toll from SARS -- 800

## Symptoms of Avian Influenza in Humans:

Reported to range from typical influenza-like symptoms (e.g., fever, cough, sore throat and muscle aches) to eye infections (conjunctivitis), pneumonia, acute respiratory distress, viral pneumonia, and other severe and life-threatening complications, including multiple organ failure.