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## H5N1 Avian Influenza: What Clinicians Need to Know

### BACKGROUND

Avian influenza viruses commonly circulate among birds worldwide. They are typically spread through contact with contaminated nasal, respiratory, or fecal material from infected birds. H5N1 avian influenza is a subtype of influenza A virus that was first isolated from birds in South Africa in 1961. In 1997 a unique, highly pathogenic strain of H5N1 appeared in poultry in Hong Kong and has subsequently spread throughout Asia (Table I). This unique strain of H5N1 avian influenza is deadly to domestic poultry. Some species of birds infected with this virus remain asymptomatic after infection and are therefore considered to be silent vectors.

In addition to infecting birds, the H5N1 influenza virus can also infect some mammals, including humans; however, transmission to humans does not easily occur.<sup>1</sup> Since 1997, there have been 117 cases of H5N1 influenza in humans, of which, 60 (51%) were fatal. Most of these case-patients were infected from direct and close contact with infected poultry or surfaces contaminated with their feces; however, some appear to have contracted the virus from close contact (e.g., household) with an infected person. There have been no documented reports of human-to-human H5N1 transmission to casual contacts.<sup>2</sup>

To date, H5N1 influenza virus has not been identified among humans or birds in North America. The U.S. Centers for Disease Control and Prevention (CDC) recommends enhanced surveillance efforts to identify possible cases of H5N1 influenza.<sup>3</sup> Previous Alaska publications provide information about H5N1 influenza, migrating bird surveillance, hunting, and working with wildlife.<sup>4,5</sup>

### SIGNS AND SYMPTOMS OF H5N1 IN HUMANS

Symptoms of avian influenza in humans have ranged from typical flu-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.

### EVALUATION FOR SUSPECTED AVIAN INFLUENZA

Laboratory testing for avian influenza in humans should be done in consultation with the Section of Epidemiology (SOE) and is indicated for patients with:

- Radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established, **AND**
- A history of travel within 10 days of symptom onset to a country with documented H5N1 avian influenza in poultry and/or humans. For a regularly updated listing of H5N1-affected countries, see the World Health Organization website listed below.<sup>6</sup>

In addition, testing for avian influenza A (H5N1) should be considered on a case-by-case basis in consultation with SOE, for anyone with:

- Documented temperature of >38°C (>100.4°F), **AND**
- One or more of the following: cough, sore throat, shortness of breath, **AND**
- A history of either contact with poultry (e.g., visited a poultry farm, visited a bird market, or lived in a household raising poultry) in an H5N1-affected country or exposure to known or suspected human case of influenza A (H5N1) within 10 days of symptom onset.

### SPECIMEN COLLECTION

Collect nasopharyngeal specimens using a Dacron or rayon swab on a plastic shaft and place in viral transport media. At the same time, collect an acute-phase serum in a serum separation tube; collect convalescent-phase serum 3 weeks later. SOE staff will notify the Alaska State Virology Lab that specimens for avian influenza will be submitted and provide additional instructions for specimen shipment.

### INFECTION CONTROL GUIDELINES

Patients hospitalized with suspected avian influenza should be placed in a negative pressure room with droplet and airborne precautions. CDC infection control recommendations are available at: <http://www.cdc.gov/flu/avian/professional/infect-control.htm>.

### RECOMMENDATIONS

Contact the Section of Epidemiology immediately for any suspected cases of avian influenza. Call 907-269-8000 during normal business hours or 1-800-478-0084 after hours for assistance with case evaluation, specimen collection, shipping and contact investigation.

Table 1. Countries with confirmed H5N1 avian influenza: December 2003 through October 20, 2005\*<sup>6</sup>

Country	Confirmed in Birds	Confirmed in Humans
Cambodia	Yes	Yes
China	Yes	No
Indonesia	Yes	Yes
Japan **	Yes	No
Kazakhstan	Yes	No
Korea (Rep. of)**	Yes	No
Lao Peop. Dem. Rep.	Yes	No
Malaysia **	Yes	No
Mongolia	Yes	No
Romania***	Yes	No
Russia	Yes	No
Thailand	Yes	Yes
Turkey	Yes	No
Viet Nam	Yes	Yes

\*Human cases also occurred in Hong Kong in 1997 and early 2003.  
\*\*Currently considered disease free after poultry outbreaks controlled.  
\*\*\*H5 subtype identified, further testing pending.

Additional information about influenza in Alaska can be found at the Section of Epidemiology Influenza web site:

<http://www.epi.alaska.gov/id/influenza/fluinfo.htm>.

### REFERENCES

1. CDC. Avian influenza (bird flu) home page. <http://www.cdc.gov/flu/avian/>
2. World Health Organization. Confirmed cases of influenza A (H5N1). [http://www.who.int/csr/disease/avian\\_influenza/country/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/en/index.html)
3. CDC. Update on avian influenza A (H5N1). <http://www.cdc.gov/flu/avian/professional/han020405.htm>
4. H5N1 avian influenza: what Alaskans need to know. *Epidemiology Bulletin* No. 21, Sept. 1, 2005. [http://www.epi.alaska.gov/bulletins/docs/b2005\\_21.pdf](http://www.epi.alaska.gov/bulletins/docs/b2005_21.pdf)
5. Alaska Department of Fish & Game. Sept. 30, 2005. What hunters should know about avian influenza. [http://www.wildlife.alaska.gov/aawildlife/disease/avian\\_influenza.pdf](http://www.wildlife.alaska.gov/aawildlife/disease/avian_influenza.pdf)
6. World Health Organization. Avian Influenza page. [http://www.who.int/csr/disease/avian\\_influenza/](http://www.who.int/csr/disease/avian_influenza/)