



## Interim Recommendations for Infection Control in Health-Care Facilities Caring for Patients with Known or Suspected Avian Influenza

### Objective

This document provides interim guidance for protection of health-care workers involved in the care of patients in the United States with known or suspected avian influenza. Depending upon where avian influenza is active in the world, such patients may be recently returning travelers entering U.S. health-care facilities or individuals who have had close contact with domestic poultry infected with avian influenza in the United States. For information regarding the clinical and epidemiologic criteria to be used in screening patients for possible avian influenza, see the ["Update on Influenza A\(H5N1\) and SARS: Interim Recommendations for Enhanced U.S. Surveillance, Testing, and Infection Control"](#) and ["Interim Recommendations for Persons with Possible Exposure to Avian Influenza During Outbreaks Among Poultry in the United States."](#)

### Background

Influenza viruses that infect primarily birds are called "[avian influenza viruses](#)." These type A influenza viruses are genetically distinguishable from influenza viruses that usually infect people. There are many subtypes of avian influenza A viruses, including H7 and H5. Avian influenza viruses can be distinguished as "low pathogenic" and "highly pathogenic" forms based on genetic features of the virus and the severity of the illness they cause in poultry.

Avian influenza viruses do not usually infect humans; however, several instances of human infections and outbreaks of avian influenza have been reported since 1997 (for more information, see "[Basic Information About Avian Influenza](#)"). In 2003, influenza A (H7N7) infections occurred in the Netherlands among persons who handled infected poultry and among their families during an outbreak of avian flu among poultry. More than 80 cases of H7N7 illness were confirmed by testing (the symptoms were mostly confined to eye infections, with some respiratory symptoms), and one patient died (a veterinarian who had visited an H7N7 influenza-affected farm). Although there was evidence of limited person-to-person spread of infection, sustained human-to-human transmission did not occur in this or other outbreaks of avian influenza. It is believed that most cases of avian influenza infection in humans have resulted from contact with infected poultry or contaminated surfaces. However, other means of transmission are also possible, such as the virus becoming aerosolized and landing on exposed surfaces of the mouth, nose, or eyes, or being inhaled into the lungs.

Infection and disease in people caused by highly pathogenic avian influenza H5N1 infection have been identified recently in Vietnam and Thailand. On February 1, 2004, the World Health Organization (WHO) reported that laboratory test results had confirmed two fatal cases of human H5N1 infection in Vietnam in which human-to-human transmission may have occurred. The cases occurred in two sisters who were part of a cluster of four cases of severe respiratory illness in a single family. According to WHO, a detailed investigation of this cluster concluded that limited human-to-human transmission was one possible explanation, but direct poultry-to-human transmission could not be ruled out.

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The following interim recommendations are based on what are deemed optimal precautions for protecting individuals involved in the care of patients with highly pathogenic avian influenza from illness and for reducing the risk of viral reassortment (i.e., mixing of genes from human and avian viruses). The ability of low pathogenic avian influenza viruses to cause infection and serious disease is less well established, but appears to be lower than that of highly pathogenic viruses based on available information. Nonetheless, it is considered prudent to take all possible precautions to the extent feasible when caring for patients with known or possible avian influenza.

### **Rationale for Enhanced Precautions**

Human influenza is thought to transmit primarily via large respiratory droplets. Standard Precautions plus Droplet Precautions are recommended for the care of patients infected with human influenza. However, given the uncertainty about the exact modes by which avian influenza may first transmit between humans additional precautions for healthcare workers involved in the care of patients with documented or suspected avian influenza may be prudent. The rationale for the use of additional precautions for avian influenza as compared with human influenza include the following:

- The risk of serious disease and increased mortality from highly pathogenic avian influenza may be significantly higher than from infection by human influenza viruses.
- Each human infection represents an important opportunity for avian influenza to further adapt to humans and gain the ability to transmit more easily among people.
- Although rare, human-to-human transmission of avian influenza may be associated with the possible emergence of a pandemic strain.

### **Recommendations for Avian Influenza**

All patients who present to a health-care setting with fever and respiratory symptoms should be managed according to recommendations for [Respiratory Hygiene and Cough Etiquette](#) and questioned regarding their recent travel history.

Patients with a history of travel within 10 days to a country with avian influenza activity and are hospitalized with a severe febrile respiratory illness, or are otherwise under evaluation for avian influenza, should be managed using isolation precautions identical to those recommended for patients with known Severe Acute Respiratory Syndrome (SARS). These include:

- Standard Precautions
  - Pay careful attention to hand hygiene before and after all patient contact or contact with items potentially contaminated with respiratory secretions.
- Contact Precautions
  - Use gloves and gown for all patient contact.
  - Use dedicated equipment such as stethoscopes, disposable blood pressure cuffs, disposable thermometers, etc.
- Eye protection (i.e., goggles or face shields)
  - Wear when within 3 feet of the patient.
- Airborne Precautions
  - Place the patient in an airborne isolation room (AIR). Such rooms should have monitored negative air pressure in relation to corridor, with 6 to 12 air changes per hour (ACH), and

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exhaust air directly outside or have recirculated air filtered by a high efficiency particulate air (HEPA) filter. If an AIR is unavailable, contact the health-care facility engineer to assist or use portable HEPA filters (see [Environmental Infection Control Guidelines](#)) to augment the number of ACH.

- Use a fit-tested respirator, at least as protective as a National Institute of Occupational Safety and Health (NIOSH)-approved N-95 filtering facepiece (i.e. disposable) respirator, when entering the room.<sup>1</sup>

For additional information regarding these and other health-care isolation precautions, see the [Guidelines for Isolation Precautions in Hospitals](#). These precautions should be continued for 14 days after onset of symptoms or until either an alternative diagnosis is established or diagnostic test results indicate that the patient is not infected with influenza A virus. Patients managed as outpatients or hospitalized patients discharged before 14 days with suspected avian influenza should be isolated in the home setting on the basis of principles outlined for the home isolation of SARS patients (see <http://www.cdc.gov/ncidod/sars/guidance/i/pdf/i.pdf>).

### Vaccination of Healthcare Workers against Human Influenza

Health-care workers involved in the care of patients with documented or suspected avian influenza should be vaccinated with the most recent seasonal human influenza vaccine. In addition to providing protection against the predominant circulating influenza strain, this measure is intended to reduce the likelihood of a healthcare worker's being co-infected with human and avian strains, where genetic rearrangement could take place, leading to the emergence of potential pandemic strain.

### Surveillance and Monitoring of Healthcare Workers

Instruct healthcare workers to be vigilant for the development of fever, respiratory symptoms, and/or conjunctivitis (i.e., eye infections) for 1 week after last exposure to avian influenza-infected patients. Healthcare workers who become ill should seek medical care and, prior to arrival, notify their healthcare provider that they may have been exposed to avian influenza. In addition, employees should notify occupational health and infection control personnel at their facility.

With the exception of visiting a health-care provider, health-care workers who become ill should be advised to stay home until 24 hours after resolution of fever, unless an alternative diagnosis is established or diagnostic tests are negative for influenza A virus. While at home, ill persons should practice good [Respiratory Hygiene and Cough Etiquette](#) to lower the risk of transmission of virus to others.

<sup>1</sup> Respirators should be used in the context of a complete respiratory protection program as required by the Occupational Safety and Health Administration (OSHA). This includes training, fit-testing, and fit-checking to ensure appropriate respirator selection and use. To be effective, respirators must provide a proper sealing surface on the wearer's face. Detailed information on a respiratory protection program is provided at [this OSHA web page](#).

For more information, visit [www.cdc.gov/flu](http://www.cdc.gov/flu), or call the National Immunization Hotline at (800) 232-2522 (English), (800) 232-0233 (español), or (800) 243-7889 (TTY).

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