Avian and Novel Influenza Quicksheet

September 2022

BACKGROUND

Novel influenza virus infections include all human infections with influenza viruses that differ from currently circulating human seasonal influenza viruses. Avian influenza is a type of novel influenza virus. It refers to the disease found in birds that is caused by infection with avian (bird) influenza (flu) Type A viruses. These viruses naturally spread among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species. Avian flu viruses do not normally infect humans; however, sporadic human infections with avian flu viruses have occurred.

Additional background information from the Centers for Disease Control and Prevention (CDC):

- Information on Avian Flu
- Avian Influenza in Birds

For information about variant influenza viruses, another type of novel influenza virus, please see the California Department of Public Health (CDPH) Variant Influenza Quicksheet.

OVERVIEW OF AVIAN INFLUENZA INFECTIONS

Avian influenza viruses are classified into two categories by disease severity (pathogenicity) in poultry: low pathogenic avian influenza (LPAI) viruses and highly pathogenic avian influenza (HPAI) viruses. Low pathogenic avian influenza viruses cause either no signs of disease or mild disease in poultry. Highly pathogenic avian influenza viruses cause severe disease and high mortality in infected poultry. Most avian influenza A viruses circulating among birds are LPAI viruses and cause few signs of disease in infected wild birds. However, some A(H5) and A(H7) viruses are classified as HPAI viruses and can cause disease with mortality of 90% to 100% in chickens, often within 48 hours.

HPAI and LPAI designations do not refer to or correlate with the severity of illness in cases of human infection with these viruses. Although avian flu viruses usually do not infect people, there have been some rare cases of human infection with these viruses. Both LPAI and HPAI viruses have caused mild to severe illness in infected humans. Asian lineage H7N9 and HPAI Asian lineage H5N1 viruses have been responsible for most avian flu viruses infections in humans worldwide to date, including the most serious illnesses and illnesses with the highest mortality. Human-to-human transmission of avian influenza A viruses is rare. While probable limited human-to-human transmission has been reported, there has been no evidence of sustained human-to-human transmission of avian flu viruses.
Additional information on avian influenza infections:

- Avian Flu Virus Infections in Humans
- Avian and Other Zoonotic Influenza (WHO)
- Avian Influenza (OIE)
- Reporting and Testing of Sick and Dead Birds by California State Agencies

CLINICAL AND EXPOSURE INFORMATION:

Clinical Criteria: Persons with signs and symptoms consistent with acute upper or lower respiratory tract infection or conjunctivitis, or complications of acute respiratory illness without an identified cause. Examples include but are not limited to:

- Mild illness (cough, sore throat, fever or feeling feverish, runny or stuffy nose, fatigue, muscle or body aches, headache) or conjunctivitis (red eye, discharge from eye).
- Moderate to severe illness: shortness of breath or difficulty breathing, altered mental status, seizures
- Complications: pneumonia, respiratory failure, acute respiratory distress syndrome, multi-organ failure, meningoencephalitis
- Less common signs and symptoms include diarrhea, nausea, or vomiting. Fever may not always be present.

Exposure Criteria: Within 10 days of illness onset:

- **Exposure to birds infected with avian influenza virus** is defined as follows:
  - Close exposure (within six feet) to birds with confirmed or suspected avian influenza A virus infection. Bird exposures can include, but are not limited to: handling, slaughtering, defeathering, butchering, culling, or preparing birds for consumption; **OR**
  - Direct contact with surfaces contaminated with feces or bird parts (e.g., carcasses, internal organs) from infected birds; **OR**
  - Inhaling droplets or dust containing virus from bird saliva, mucous, or feces; **OR**
  - Visiting a live poultry market with confirmed bird infections or associated with a case of human infection with avian influenza A virus.
- **Exposure to an infected person** – Close (within six feet) unprotected (without use of respiratory and eye protection) exposure to a person who is a confirmed, probable, or symptomatic suspected case of human infection with novel or avian influenza A virus (e.g., in a household or healthcare facility).
- **Laboratory exposure** – Unprotected (without use of respiratory and eye protection) exposure to avian influenza A virus in a laboratory.

Human Infectious Period: Until further data are available, the infectious period should be considered to be from 1 day before symptom onset until resolution of illness.

WHO SHOULD BE TESTED?

Immediately notify CDPH about suspect cases by calling (510) 620-3737 or the CDPH Duty Office if after hours (916) 328-3605. Test patients who meet the clinical AND exposure criteria.

Please enter all suspect, probable, and confirmed novel and avian influenza cases into CalREDIE using the "Influenza-Novel Strain" condition. The Novel Influenza Case History Form should be completed for all probable and confirmed cases of novel or avian influenza as soon as possible. Completed forms should be uploaded into the patient's record in CalREDIE or emailed to influenzasurveillance@cdph.ca.gov.

SPECIMEN COLLECTION AND TESTING

Polymerase chain reaction (PCR) testing is available at some local public health laboratories, the Viral and Rickettsial Disease Laboratory (VRDL) at CDPH, and CDC. Laboratories should NOT attempt to perform viral culture on specimens from patients with suspected or laboratory-confirmed novel influenza infection.

To increase the likelihood of detecting a novel influenza A infection, specimens for viral testing should be obtained as soon as possible after illness onset, ideally within 7 days of illness onset; however, specimens should be tested for novel influenza A virus even if obtained after 7 days from illness onset. Preferred respiratory specimens include:

- Upper respiratory tract clinical specimens, including a nasopharyngeal swab (NPS), throat swabs (TS), nasal swabs (NS), nasal aspirates (NA), nasal washes (NW) and dual nasopharyngeal/throat swabs (NPS/TS). Use only Dacron-tipped swabs in a standard container with 2-3 ml of viral transport media (VTM). Cotton or calcium alginate swabs are not acceptable for PCR testing; do not use wooden shaft swabs.
- Patients with severe respiratory disease also should have lower respiratory tract specimens collected including an endotracheal aspirate (EA), bronchoalveolar lavage (BAL), or sputum.
- For severely ill persons, multiple respiratory tract specimens from different sites should be obtained to increase the potential for HPAI A(H5N1) virus detection.

Specimens sent to VRDL must be accompanied by a VRDL General Submittal Form with patient and clinical information filled in.

ISOLATION (NON-HOSPITALIZED):
Persons who are suspected or confirmed to be infected with a novel or avian influenza A virus should be instructed to:

- Isolate at home in a single room with a closed door.
- Have a single designated caregiver who is wearing a well-fitted facemask (ideally an N95 respirator), eye protection, gloves, and clothes that cover exposed skin that are removed and laundered after providing care.
- Wear a facemask when the caregiver is in the room.
- Isolate until novel or avian influenza has been ruled out or, if a confirmed case of novel or avian influenza, until symptoms are improving (afebrile for at least 24 hours) and are no longer determined to pose an infectious risk based on consultation with CDPH.

For persons who are hospitalized (or in another healthcare setting) with illness due to suspected or laboratory-confirmed infection with a novel or avian influenza A virus, refer to the "Recommendations for Infection Control" section below.

RECOMMENDATIONS FOR INFECTION CONTROL
Standard, contact, and airborne precautions are required for patients presenting for medical care or evaluation who have illness consistent with influenza and recent exposure to potentially infected birds. For additional guidance on infection control precautions for patients who might be infected with novel or avian influenza virus, please refer to guidance for infections with novel influenza A viruses associated with severe disease.

For more information on infection control requirements in health care settings specific to California, please see California's Aerosol Transmissible Diseases standard.

RECOMMENDATIONS FOR INFLUENZA ANTIVIRAL TREATMENT

- **Treating Symptomatic Persons with Bird Exposure:** Persons with potential exposure to avian influenza who develop signs and symptoms compatible with influenza should receive empiric initiation of influenza antiviral treatment with a neuraminidase inhibitor, oseltamivir or zanamivir, or the cap-dependent endonuclease inhibitor, baloxavir, as soon as possible. Clinical benefit is greatest when antiviral treatment is administered early, especially within 48 hours of illness onset. If a person suspected to have avian influenza is referred to a medical setting, the medical setting should be alerted ahead of time so appropriate infection control measures can be taken.
- **Hospitalized patients** who are confirmed, probable, or suspected cases of human infection with a novel or avian influenza virus, regardless of time since illness onset, are recommended to initiate antiviral treatment with oral or enterically administered oseltamivir as soon as possible. Antiviral treatment should not be delayed while waiting for laboratory testing results.
- **For detailed guidance on dosing and treatment duration**, please see Interim Guidance on the Use of Antiviral Medications for the Treatment of Human Infection with Novel Influenza A Viruses Associated with Severe Human Disease.

RECOMMENDATIONS FOR INFLUENZA ANTIVIRAL CHEMOPROPHYLAXIS

- **Chemoprophylaxis**: Chemoprophylaxis with influenza antiviral medications can be considered for any person exposed to avian influenza. Decisions to initiate post-exposure antiviral chemoprophylaxis should be based on clinical judgment, with consideration given to the type of exposure, duration of exposure,

time since exposure, known infection status of the birds the person was exposed to, and whether the exposed person is at higher risk for complications from seasonal influenza. Chemoprophylaxis is not routinely recommended for personnel who used proper PPE while handling sick or potentially infected birds or decontaminating infected environments (including animal disposal).

- **If antiviral chemoprophylaxis is initiated, treatment dosing for the neuraminidase inhibitors oseltamivir or zanamivir (one dose twice daily) is recommended instead of the typical antiviral chemoprophylaxis regimen.** For specific dosage recommendations for treatment by age group, please see Influenza Antiviral Medications: Summary for Clinicians. Physicians should consult the manufacturer's package insert for dosing, limitations of populations studied, contraindications, and adverse effects. If exposure was time-limited and not ongoing, five days of medication (one dose twice daily) from the last known exposure is recommended.
- **Post-exposure prophylaxis of close contacts** of a person with novel or avian influenza virus infection is recommended with oseltamivir twice daily (treatment dosing) instead of the once daily pre-exposure prophylaxis dosing. For detailed guidance, please see Interim Guidance on Follow-up of Close Contacts of Persons Infected with Novel Influenza A Viruses and Use of Antiviral Medications for Chemoprophylaxis.

MONITORING

Persons with Bird Exposure: All persons with direct contact to avian influenza subtypes should be monitored. At a minimum, passive monitoring should be conducted. **Active monitoring should be implemented when exposure is to subtypes of influenza known to infect and cause severe illness in humans (e.g., Asian-origin H5N1, H7N9 or other avian influenza strain known to infect and cause severe illness in humans) or when recommended by the CDC or CDPH.**

- Passive monitoring: Contact each exposed person at the beginning of their monitoring period to inform them of the monitoring process, symptoms of concern, and when and how to contact the local health department (LHD) if symptoms develop, including after hours and on weekends; and contact the exposed worker at the end of their monitoring period to confirm no symptoms developed. LHDs may choose to implement more frequent contact with the exposed workers.
- Active monitoring: Contact each exposed person for assessment of symptoms at least once daily until 10 days after their last known exposure, or at a frequency or duration recommended by CDC and/or CDPH. The initial contact at the beginning of their monitoring period should inform them of what to expect during the monitoring process, symptoms of concern, and when and how to contact the LHD if symptoms develop, including after hours and on weekends.
- Close contacts of persons with a probable or confirmed avian influenza virus should be monitored daily through 10 days after the last known exposure to a confirmed or probable novel influenza case.

Employers with workers who have exposures to avian influenza-infected birds or their environments, must provide **medical services** for employees who enter a restricted area. These include medical surveillance as recommended by CDC, CDPH, or the local health officer. These and other requirements can be found in the California Division of Occupational Safety and Health (Cal/OSHA) Aerosol Transmissible Diseases-Zoonotic regulation**.**

For more detailed CDPH monitoring information, email avianinfluenza@cdph.ca.gov and influenzasurviellance@cdph.ca.gov.

ADDITIONAL INFORMATION ON NOVEL INFLUENZA

- Laboratory Testing for Novel Influenza A (CDPH)
- Information on Avian Influenza (CDC)
- Information on Viruses of Special Concern (CDC)
- Avian Influenza: Information for Health Professionals and Laboratorians (CDC)