

Avian and Novel Influenza Quicksheet

July 2024



BACKGROUND

Novel influenza virus infections include all human infections with influenza viruses that differ from currently circulating human seasonal influenza viruses.

Avian (bird) influenza (flu) virus is a type of novel influenza virus. These viruses naturally spread among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species, including mammals. 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) observed 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 poultry. However, some avian influenza A(H5) and avian influenza A(H7) viruses are classified as HPAI viruses and can cause 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

humans infected with these viruses. Both LPAI and HPAI viruses have caused mild to severe illness in infected humans. LPAI and influenza A(H7N9) and HPAI influenza A(H5N1) viruses have been responsible for most [avian flu virus infections in humans](#) worldwide to date, including the most serious illnesses and illnesses with the highest mortality. Since 2022, HPAI A(H5N1) clade 2.3.4.4b viruses have become widespread in wild birds in North America and have also caused sporadic human infections. Human infections with this lineage have ranged from mild or asymptomatic illness to severe disease, including death.

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 \(OIE\)](#)

CLINICAL AND EXPOSURE INFORMATION

Clinical Criteria: Persons with signs and symptoms consistent with acute upper or lower respiratory tract infection, conjunctivitis, gastrointestinal symptoms, or complications of acute respiratory illness without another 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), conjunctivitis (red eye, discharge from eye), diarrhea, nausea, or vomiting. Fever may not always be present.
- 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

Exposure Criteria: Within the 10 days prior to illness onset:

- **Exposure to animals infected with avian influenza virus** is defined as follows:
 - Close exposure (within six feet) to animals with confirmed or suspected avian influenza A virus infection. Bird or animal exposures can include, but are not limited to: handling, slaughtering, defeathering, butchering, culling, or preparing or consuming raw animal products; **OR**
 - Direct contact with surfaces contaminated with feces or animal parts (e.g., carcasses, internal organs) from infected animals; **OR**
 - Inhaling droplets or dust containing virus from animal saliva, mucous, or feces; **OR**
 - Visiting a live animal market with confirmed bird or animal infections or associated with a case of human infection with a novel influenza A virus.
- **Exposure to an infected person in a non-healthcare setting** – Close (within six feet) exposure to a person who has confirmed, probable, or suspected infection with novel or avian influenza A virus, regardless of whether or not the contact was wearing PPE.
- **Exposure in a healthcare facility** – Close (within six feet) unprotected (without use of respiratory and eye protection) exposure to a person who has confirmed, probable, or suspected infection with novel or avian influenza A virus. Healthcare workers wearing appropriate PPE are not considered exposed.
- **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.

REPORTING

Immediately notify CDPH of suspect cases by calling the Immunization Branch (510) 620-3737. After hours, contact the CDPH Duty Officer (916) 328-3605. 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. The Novel Influenza Case History Form can be obtained via the CalREDIE Document Repository or by emailing InfluenzaSurveillance@cdph.ca.gov. Completed forms should be uploaded into the patient’s record in CalREDIE or emailed to InfluenzaSurveillance@cdph.ca.gov and AvianInfluenza@cdph.ca.gov.

TESTING

If a person develops symptoms that could be consistent with avian influenza infection within 10 days of exposure to avian influenza, they should be tested. Specimens should ideally be collected within 24–72 hours of symptom onset and no later than 10 days after symptom onset. Testing after 10 days from symptom onset can be considered on a case-by-case basis and in discussion with CDPH.

Polymerase chain reaction (PCR) testing for avian influenza 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. For additional testing guidance see the [VRDL Test Page - Novel/Avian Influenza Virus \(human\) PCR \(ca.gov\)](#).

Preferred specimens include:

- **RESPIRATORY Specimen:** A nasopharyngeal swab, a nasal swab, a throat swab, or dual nasopharyngeal/throat swabs combined into one vial of viral transport medium (VTM) or universal transport media (UTM); also acceptable: a nasal aspirate or nasal wash.
- Swab specimens should be collected using swabs

with synthetic tips (e.g., polyester or Dacron®) and an aluminum or plastic shaft. Swabs with cotton tips and wooden shaft are NOT recommended. Specimens collected with swabs made of calcium alginate are NOT acceptable.

- Place specimen swab(s) in specimen collection vial containing 2–3mL of VTM or UTM; tighten cap to avoid leakage.
- Patients with conjunctivitis should have both a respiratory and [conjunctival swab specimen](#) collected.
- 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.

Specimen storage and handling:

- Freeze or refrigerate specimens after collection. Ship refrigerated specimens to VRDL on cold packs. Ship frozen specimens to VRDL on dry ice.
- Specimens submitted to VRDL must be accompanied with a hard copy of the completed [VRDL General Purpose Specimen Submittal Form](#) (PDF) or a form generated in the [VRDL Lab Web Portal](#).

ISOLATION (NON-HOSPITALIZED)

Persons with suspected, probable, or confirmed novel or avian influenza A virus infections should be instructed to:

- Isolate at home in a single room with a closed door and a single designated caregiver.
- If novel or avian influenza has been ruled out, isolation can be discontinued. If avian influenza is confirmed, isolation should continue until symptoms are improving (afebrile for at least 24 hours) and the person is 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

If a person who may be infected with avian influenza is referred to a medical facility for testing or treatment, the medical facility should be alerted ahead of time so appropriate infection control measures can be taken.

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 animals. For additional guidance on infection control precautions for patients who might be infected with novel or avian influenza virus, please refer to [infection control guidance within healthcare settings when caring for patients with novel influenza A viruses](#).

For more California-specific information on infection control requirements in health care settings, please see [California’s Aerosol Transmissible Diseases standard](#).

RECOMMENDATIONS FOR INFLUENZA ANTIVIRAL TREATMENT

- **Treating Symptomatic Persons with Avian Influenza Exposure:** Persons with potential exposure to avian influenza who develop signs and symptoms compatible with influenza should receive empiric 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.
- **Hospitalized patients** who have confirmed, probable, or suspected infection with a novel or avian influenza virus, are recommended to initiate antiviral treatment with oral or enterically administered oseltamivir as soon as

possible regardless of time since illness onset. 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 is not routinely recommended, but can be considered for any person exposed to avian influenza. Decisions to initiate post-exposure antiviral chemoprophylaxis should be based on clinical and public health considerations, including type of exposure, duration of exposure, time since exposure, infection status of the animals the person was exposed to, and whether the exposed person is at [higher risk for complications from seasonal influenza](#).
- **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 treatment dosage recommendations 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.
- **Chemoprophylaxis of close contacts** of a person with novel or avian influenza virus infection is also 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 Animal Exposure: All persons with contact to avian influenza infected animals, raw animal products, or their contaminated environments should be monitored. Passive monitoring can be considered for people who were wearing all appropriate PPE when exposed. **Active monitoring should be done when exposure is to subtypes of influenza known to infect and cause severe illness in humans (e.g., H5N1, H7N9 or other avian influenza strains known to infect and cause severe illness in humans) without appropriate PPE 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. LHDs may choose to have 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 animals 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.

CASE FINDING

Case finding activities should commence if preliminary PHL testing indicates a human infection with a novel or avian influenza virus.

- At a minimum:
 - Identify close contacts of the presumptively positive or confirmed case. See “Clinical and Exposure Information” section above.
 - Conduct daily active monitoring of close contacts for symptoms associated with avian or novel influenza infections for 10 days from their last known exposure to a presumptively positive or confirmed case.
 - Promptly collect specimens for testing at a PHL from symptomatic close contacts whose symptom onset occurred within 10 days of last known exposure.
 - Please see the “Specimen Collection and Testing” section for additional information.
- If resources allow and if advised by CDPH, consider alerting local healthcare providers to ask about recent animal exposure among patients presenting with febrile respiratory illness. Advise providers to collect specimens from patients meeting the above criteria for influenza testing at a PHL.
- The following information should be obtained for suspect human cases and their close contacts.
 - Basic demographic information, the patient’s animal and animal product contact history, and disease severity should be provided to the Immunization Branch and VRDL at the time the specimen is shipped to VRDL.
 - Knowledge of, or contact with, sick animals and the type of sick animal.
 - Illness symptoms, if present.
 - Health care received for any reported illnesses.
 - Influenza testing results if available.

- A line list of suspect, probable, or confirmed cases, or others being monitored or investigated, should be maintained at the local health jurisdiction and shared with the CDPH Immunization Branch. CalREDIE may be used for maintaining the line list of suspect cases by using the “Influenza – Novel Strain” condition and should be used for probable and confirmed cases.

ADDITIONAL INFORMATION ON NOVEL INFLUENZA

- [VRDL Test Page - Novel/Avian Influenza Virus \(Human\) PCR \(ca.gov\)](#)
- [Information on Avian Influenza \(CDC\)](#)
- [Avian Influenza A Virus: Information for Health Professionals and Laboratorians | Avian Influenza \(Flu\) \(CDC\)](#)
- [Reporting and Testing of Sick and Dead Birds by California State Agencies](#)