

Highly Pathogenic Avian Influenza (HPAI): Diagnosis and Treatment

A Resource for Health Care Providers

1 When to consider HPAI infection

Clinicians should strongly consider the possibility of human infection with highly pathogenic avian influenza (HPAI), also known as bird flu, in individuals presenting with:

Signs or symptoms of acute respiratory illness:

This includes fever, runny nose/congestion, cough, sore throat or shortness of breath.

OR

Conjunctivitis: Eye redness or discharge.

Conjunctivitis can be a helpful distinguishing feature between HPAI and common upper respiratory infections.

AND

Relevant exposure history:

Contact with potentially infected sick or dead birds, livestock (especially dairy cattle) or other animals within 10 days before symptom onset. This includes activities such as handling, milking, slaughtering, defeathering, butchering, culling, preparing or consuming uncooked or undercooked food products (including unpasteurized milk or dairy products) and direct contact with contaminated water or surfaces or other humans with HPAI.

2 Diagnosis

Clinical presentation:

Suspected HPAI infection may present with:

- **Mild illness:** Cough, sore throat, eye redness or discharge, fever, runny nose, fatigue, muscle aches or headache.
- **Moderate to severe illness:** Shortness of breath, altered mental status, seizures, multi-organ failure, sepsis or meningoencephalitis.

**Laboratory testing**

HPAI infection in people cannot be diagnosed by clinical signs and symptoms alone. Laboratory testing is needed to confirm infection in humans.

Step 1. Perform standard flu tests (rapid and PCR):

- **Rapid tests:** Positive test suggests influenza infection but does not differentiate between HPAI and other influenza strains. Rapid tests have a higher rate of false negatives than PCR.
- **Positive PCR test:** Suggests influenza infection but does not differentiate between HPAI and other influenza strains.
- **Negative PCR test:** Reassuring, but HPAI infection is not ruled out.



Isolate the patient while awaiting test results. In low incidence, low likelihood cases, a standard influenza rapid test can be useful for determining isolation need.

Testing for other potential causes of acute respiratory illness, such as COVID-19, should also be considered.

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Step 2. Order definitive testing for HPAI if positive for Influenza A in Step 1 or concerning symptoms with high risk exposure regardless of other test results.

Providers should notify their state and local health departments to arrange for testing of specimens for HPAI.

In addition to the samples required for standard testing, at the same visit, the provider should also collect respiratory specimens from the patient to test for HPAI at the health department. Collect these specimens as soon as possible after illness onset:

• a nasopharyngeal swab

AND

• a nasal swab combined with an oropharyngeal swab (e.g., two swabs combined into one viral transport media vial)

The nasopharyngeal swab and the combined nasal-oro-pharyngeal swabs should be put in separate vials and tested separately. If these specimens cannot all be collected, a single nasal or oropharyngeal swab is acceptable.

If the exposed person has conjunctivitis, with or without respiratory symptoms, then a [conjunctival swab](#) should also be collected for testing in a separate vial.

- Use appropriate personal protective equipment (PPE) during specimen collection.

3 Treatment and infection control

Antiviral treatment:

• Symptomatic persons:

- Anyone testing positive for HPAI or outpatients meeting exposure criteria who develop influenza-like symptoms should be promptly evaluated, tested and initiated on empiric treatment with **oseltamivir (twice daily for five days)** as soon as possible, regardless of duration of symptoms.
- Hospitalized patients with confirmed, probable, or suspected HPAI infection should also be initiated on oseltamivir treatment as soon as possible, regardless of the time since illness onset.

- **Asymptomatic persons with positive HPAI test:** All asymptomatic individuals who test positive for HPAI should be offered oseltamivir treatment.

Post-exposure prophylaxis (PEP):

- **High-risk exposures:** Antiviral chemoprophylaxis with **oseltamivir (twice daily for five days)** can be considered for individuals with high-risk exposures (without recommended PPE) to animals in the last 10 days.
- **Longer duration PEP:** For ongoing high-risk exposures (with inadequate PPE), a longer duration of **oseltamivir PEP (twice daily for ten days)** may be considered.
- **Importance of PPE:** Emphasize the critical importance of using appropriate PPE when handling animals and how to safely take off PPE without contaminating oneself.

Infection control:

- **Isolation:** Advise infected individuals to isolate at home and avoid contact with others.
- **PPE:** Emphasize the critical importance of using appropriate PPE when handling animals.
- **Vaccines:** Encourage seasonal influenza vaccines. These vaccines won't prevent HPAI but can prevent co-infection with both HPAI and seasonal flu, which may be more serious and increase the risk of viral mutations.

