



# The Commonwealth of Massachusetts

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## Enhancing Surveillance for Human Infections with HPAI H5N1 and Priorities and subtyping of influenza

### Pediatric influenza with neurological complications

- The Massachusetts Department of Public Health (DPH) is highlighting enhanced surveillance for H5N1 avian influenza in people in Massachusetts and providing guidance to prioritize subtyping of certain specimens.
- DPH also would like to bring attention to a possible increase in [pediatric neurological complications of seasonal influenza](#).

### H5N1 Highly Pathogenic Avian Influenza (HPAI)

The Massachusetts Department of Public Health (DPH) is issuing this guidance regarding priorities for surveillance of H5N1 in residents. H5N1 human cases have been rare in the US and primarily associated with direct contact with infected commercial chicken and turkey flocks or infected dairy cattle; no human cases have been identified in Massachusetts. Most confirmed human cases have been mild. However, severe disease is possible and there has been one fatality in the US reported in an individual with pre-existing health conditions. There have been no human cases of H5N1 in Massachusetts and surveillance of milk from dairy cattle herds in Massachusetts has remained negative; however, H5N1 is widespread in wild waterfowl in the Commonwealth.

On January 17, 2025, CDC issued a [HAN](#) alert calling for rapid subtyping of influenza positive specimens in certain situations. Because of the logistical constraints on such testing, DPH would like to prioritize certain specimens for testing. This is in addition to ongoing routine flu surveillance supported by the sentinel provider sites and clinical laboratories that submit a subset of specimens to the Massachusetts State Public Health Laboratory (SPHL) for influenza testing and subtyping.

In order to facilitate early detection of H5N1 human cases, patients with a respiratory infection compatible with influenza, and a recent (within 10 days) history of direct contact with sick or dead wild birds (primarily ducks and geese, gulls, hawks or owls), sick or dead poultry (chickens, turkeys, ducks or geese) or sick dairy cattle should be tested for influenza

immediately. Any positive influenza A specimen(s) should be subtyped within 24 hours either through the hospital laboratory, if available, or through SPHL. DPH should be notified immediately of such possible cases by calling 617-983-6800 24/7.

H5N1 HPAI infection can present as severe illness or require hospitalizations, though such presentations appear to be rare in the US. Providers should test any patients with severe respiratory infections requiring hospitalization or ICU admission for influenza and consider rapid (within 24 hour) subtyping of any positive specimens, especially when an H5N1 exposure history (i.e. to appropriate avian or bovine species) cannot be excluded.

Conjunctivitis is a common finding in patients infected with avian influenza and relatively uncommon in seasonal influenza. The presence of conjunctivitis in a patient reporting an appropriate animal exposure or who is positive for influenza A should prompt consideration for avian influenza and rapid (within 24 hours) subtyping of any such specimens. Such patients should have simultaneous conjunctival specimens collected and submitted along with respiratory (oral/nasal or nasopharyngeal) specimens. Submitting the specimens for testing and subtyping to the SPHL is preferred.

Some hospital and commercial laboratories routinely perform subtyping of the genes encoding the hemagglutinin surface glycoproteins (H1 and H3) on influenza A isolates. If specimens are positive for influenza A and negative for both H1 and H3, these specimens might express an unusual hemagglutinin such as H5; please notify DPH immediately and expedite the specimen submission to SPHL for subtyping.

### Scenario

Respiratory infection following a known exposure to sick or dead bird or dairy cattle (with or without appropriate PPE)	Call DPH and expedite specimen to SPHL
Conjunctivitis and Influenza A positive or with an appropriate animal exposure (sick or dead bird or dairy cattle)	Collect separately respiratory and conjunctival specimens, call DPH, and expedite these specimens to SPHL
Influenza A with negative subtyping for H1 and H3	Call DPH and expedite specimen to SPHL
Influenza A in an ICU or critically ill patient	Recommend rapid (within 24 hours) subtyping at hospital or commercial lab. Send to SPHL as needed
Influenza A in a hospitalized patient	Consider prompt subtyping at hospital or commercial lab. Send to SPHL as needed

### Isolation of patients with suspected HPAI

Because of the lack of pre-existing immunity to avian influenza or vaccines for prevention of HPAI, [CDC](#) and DPH recommends, in addition to standard influenza precautions, the use of Contact and Airborne precautions including the use of an airborne isolation room and the use of N95 respirators by healthcare personnel for management of patients with suspected or confirmed HPAI. When evaluating a patient suspected of having exposure to HPAI, the use of N95 respirators by healthcare personnel is recommended.

## Treatment of suspected HPAI

Hospitalized patients, especially those in an ICU, with suspected seasonal influenza or avian influenza A(H5N1) should be started on [antiviral treatment](#) with oseltamivir as soon as possible without waiting for the results of influenza testing. Consider [combination antiviral treatment](#) for hospitalized patients with avian influenza A(H5N1) virus infection.

Notify DPH promptly by calling 617-983-6800 if avian influenza A(H5N1) virus infection is suspected in a hospitalized patient.

Questions about appropriate clinical management or testing of hospitalized patients with novel influenza A virus infection [e.g., A(H5N1)], including about combination antiviral treatment dosing or testing for antiviral resistance, can be directed to DPH at 617-983-6800. Consultation with CDC is available through DPH if it is deemed necessary.

## Submission of samples for HPAI H5N1 testing to Massachusetts State Public Health Laboratory (SPHL)

Standard, contact, and airborne precautions, and use of eye protection are recommended for management of patients with suspected (known contact without PPE with animals confirmed to have HPAI infection) or laboratory-confirmed novel influenza A virus infection; this includes collection of respiratory and conjunctival specimens. Practitioners should adhere to infection control [precautions](#) recommended for novel influenza A viruses known to cause severe disease in humans.

The following specimens should be collected as soon as possible after illness onset (ideally within 3 days of illness onset but accepted up to 7 days): (i) a nasopharyngeal swab, and (ii) a nasal swab combined with an oropharyngeal swab (e.g., two swabs collected separately and combined into one viral transport media vial). The nasopharyngeal swab and the combined nasal-oropharyngeal swabs are separate specimen types that will each be tested separately. If these specimens cannot be collected, a single nasal swab or oropharyngeal swab is acceptable. **If the person with an appropriate animal exposure has conjunctivitis (with or without respiratory symptoms), two specimen types will be tested : Please collect a conjunctival specimen and separately collect a respiratory specimen (nasopharyngeal and/or nasal/oropharyngeal swab specimen).**

Clinical specimens sent to SPHL should be shipped in the appropriate packaging and according to instructions by the laboratory. Store frozen at  $\leq -20^{\circ}\text{C}$  and ship with ice packs. Please contact DPH at 617-983-6800 when urgent testing may be needed. If, after discussion with DPH, samples will be shipped to MA SPHL  $\geq 3$  days from collection or on a Friday, they should be **frozen at  $< -20^{\circ}\text{C}$**  and shipped with ice packs the following week and notated on submission form unless otherwise directed by DPH. Specimens must be accompanied by a [specimen submission form](#).

## Pediatric influenza with neurological complications

DPH has recently received several reports of cases of neurological complications of influenza infection in pediatric patients including encephalitis and acute necrotizing

**encephalitis** . Please notify DPH of pediatric cases with neurologic involvement immediately at 617-983-6800 and submit influenza specimens from these patients to the SPHL.