pennsylvania
DEPARTMENT OF HEALTH

Infection Prevention and Control (IPC) Quick Reference on Highly Pathogenic Avian Influenza (HPAI) A(H5N1) Virus for Healthcare Settings

Recommendations for Influenza A(H5N1) Infection Prevention and Control

Background

Highly Pathogenic Avian Influenza (HPAI) A(H5N1) viruses are a specific group of avian influenza A viruses that cause severe illness with high mortality among infected poultry. Although human infections with H5N1 are rare, having unprotected exposure to any infected animal or to an environment in which infected birds or other animals have been present can pose a risk of infection. Therefore, people with work or recreational exposures to H5N1 virus-infected animals may be at increased risk of infection and should follow recommended precautions.

Patient Evaluation and Management

There are no H5N1-designated healthcare facilities. All Pennsylvania healthcare facilities and providers should actively prepare to safely evaluate, test, and treat patients with the proper infection prevention and control precautions in place.

Risk Reduction

During healthcare encounters, healthcare providers should give risk reduction education. Persons who are at high risk of H5N1 infection commonly include poultry farmers and poultry workers, backyard bird flock owners, dairy cow owners and workers, veterinarians and veterinary staff, and emergency responders. Transmission may occur through unprotected exposures to sick or dead animals and to animal products, such as raw milk, from infected animals.

Avoid unprotected direct physical contact or close exposure with the following animals and materials potentially infected or confirmed to be infected with H5N1:

- Sick birds (poultry or wild birds), livestock, or other animals (cats, foxes, etc.),
- Carcasses of birds, livestock, or other animals,
- Feces or litter,
- Raw milk or raw milk products, and
- Surfaces and water (e.g., ponds, waterers, buckets, pans, troughs) that might be contaminated with infected animal excretions.

Unprotected exposure is defined as not consistently or correctly using the recommended personal protective equipment (PPE).

Exposure Criteria

Persons had a recent exposure (within 10 days) if one or more of the following criteria are met:

- Close exposure (within six feet) to birds with suspected or confirmed H5N1. Exposure includes handling, defeathering, butchering, culling, or preparing birds for consumption.
- Close exposure (within six feet) to dairy cows with suspected or confirmed H5N1. This includes exposure to raw milk from infected cows.
- Consumption of raw milk or raw milk products.
- Direct contact with surfaces contaminated with feces or body parts (e.g., carcasses, internal organs) from infected birds or other animals.
- Visiting a live poultry market with suspected or confirmed bird infections or associated with a case of human infection with H5N1.
- Close (within six feet) unprotected exposure to a person who is confirmed, probable, or symptomatic suspected

case of human infection with H5N1 such as in a household or a healthcare facility.
- Unprotected exposure to H5N1 in a laboratory.

Isolation Precautions

Persons with signs and symptoms consistent with acute upper or lower respiratory tract infection, conjunctivitis or complications of acute respiratory illness who meet one of more of the exposure criteria must be isolated. Healthcare facilities and providers should have a plan and identify a separate, well-ventilated space that allows waiting patients to be separated by 6 or more feet, with easy access to respiratory hygiene supplies. In some settings, medically stable patients might opt to wait in a personal vehicle or outside the healthcare facility where they can be contacted by mobile phone when it is their turn to be evaluated.

- Any individual with suspected or confirmed H5N1 should be isolated, and if admitted to a healthcare facility, the patient should be placed in an airborne infection isolation room (AIIR) or single-patient room with the door closed.
- Notify Infection Prevention and Control department immediately.
- Implement standard, contact, airborne precautions and the use of eye protection; this includes the following components of personal protective equipment (PPE) for healthcare personnel (HCP):
  - Gown,
  - Gloves,
  - Eye protection (e.g., goggles or face shield that covers front and sides of face), and
  - National Institute for Occupational Safety and Health (NIOSH)-approved particulate respirator equipped with N95 filters or higher.
- Follow recommendations for donning and doffing: CDC's Sequence for PPE.
- Ensure signs are posted on the patient's door to inform HCP of the required PPE.
- People with H5N1 should remain in isolation for the duration of illness.

Healthcare facilities and providers should have a respiratory protection program that includes medical evaluations, training, fit testing, and is compliant with the OSHA respiratory protection standard (29 CFR 1910.134).

More information can be found here: Interim Guidance for Infection Control Within Healthcare Settings When Caring for Confirmed Cases, Probable Cases, and Cases Under Investigation for Infection with Novel Influenza A Viruses Associated with Severe Disease. Questions about isolation should be directed to the local or state health department as needed.

Patient Placement

Place patients in an airborne infection isolation room (AIIR).

If an AIIR is not available, use a private room, place a medical facemask on the patient, close the door if safe to do so, and transport the patient to an AIIR as soon as possible once available.

Air Handling

The AIIR must include:

- Negative pressure in the room; and
- Air flow rate of 6 air exchanges per hour for existing facilities and 12 air exchanges per hour for new construction and renovation (acute care settings); and
- Direct exhaust of air from the room to the outside of the building or recirculation through a high-efficiency particulate air (HEPA) filter before returning to circulation.

Intubation/Extubation

Any procedures likely to spread oral secretions (e.g., open suctioning of airway secretions, sputum induction) should be performed in an AIIR if available.

Commonly performed medical procedures that are often considered aerosol-generating procedures (AGPs), or that might create uncontrolled respiratory secretions, include:

- open suctioning of airways,
- sputum induction,
- cardiopulmonary resuscitation,
- endotracheal intubation and extubation,
- non-invasive ventilation (e.g., bilevel positive airway pressure (BiPAP), continuous positive airway pressure (CPAP),
- bronchoscopy, and
- manual ventilation.

Based on limited available data, it is uncertain whether aerosols generated from some procedures may be infectious. These include:

- nebulizer administration, and
- high flow O2 delivery

More information on AGPs can be obtained here.

Healthcare Personnel Management

HCP who are caring for patients with suspected or confirmed H5N1 should be properly training on facility policies and procedures for H5N1.

- HCP should be advised to report any signs or symptoms of acute illness to occupational health and their supervisor for a period of 10 days after the last known contact with the symptomatic patient.
- Facilities should consider dedicating HCP caring for these patients to minimize risk of transmission and exposure to other patients and other HCP.
- Facilities should keep track of all HCP (e.g., clinicians, environmental services workers, food service) by maintaining a list of all who care for or enter the rooms of patients with suspected or confirmed H5N1.

HCP that develop any respiratory symptoms or conjunctivitis after contact with patients with suspected or confirmed H5N1 should not report to work. These HCP must:

- Notify occupational health services and their supervisor about their symptoms,
- Isolate themselves at home,
- Implement respiratory hygiene and cough etiquette,
- Seek prompt medical evaluation including need for post-exposure prophylaxis, and
- Comply with exclusion from work until they are no longer deemed infectious.

Asymptomatic HCP who have had an unprotected exposure (e.g., within six feet of a symptomatic patient with H5N1 without use of recommended respiratory protection and eye protection), should be excluded from work until 10 days after their last exposure and should monitor for signs and symptoms of respiratory illness.

Patient Transport

Limit transport to medically necessary procedures. If a patient with suspected or confirmed H5N1 is transported out of their room, implement source control (e.g., medical facemask) for the patient.

Visitation

Visitation should be limited to those essential for the wellbeing of the patient. Visitors must be educated on infection prevention and control measures including hand hygiene and appropriate PPE prior to entering the room.

Environmental Cleaning

Routine and terminal cleaning and disinfection procedures should be performed using an EPA-registered hospital-grade disinfectant that has an effective claim against avian influenza (List M).

Detailed information on environmental infection control in healthcare settings can be found in CDC's Guidelines for Environmental Infection Control in Health-Care Facilities and Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings [section IV.F. Care of the environment].

Waste Management

Medical waste should be managed in accordance with regular requirements of the Department of Transportation. Some medical waste may be designated as regulated or biohazardous waste and require special handling and disposal methods approved by state authorities. Facilities should comply with state and local regulations for handling, storage, treatment, and disposal of waste.

Testing

Contact your local or state health department to coordinate testing through the state public health laboratory.

Test symptomatic patients with H5N1 exposure, or patients with severe illness, no known cause, and with animal/dairy exposures.

Two classes of people should be tested for H5N1:

- Symptomatic people with known exposure to H5N1-infected animal, flock, herd, or person in the 10 days prior to illness onset. Persons who were wearing PPE at the time of exposure should still be tested.
- Hospitalized patients with severe respiratory illness, with no identified cause, AND with exposure to raw milk, sick or dead birds, sick or dead animals, or dairy cows, in the 10 days prior to illness onset.

Upon testing, specimens with the following results should be sent to public health for further evaluation:

- Influenza A positive specimens that are subtype negative on tests designed to provide an influenza subtyping result (ex. Biofire) and confirmed upon retest.
- Influenza A positive specimens that are subtype influenza A(H1) and not influenza A(H1)pdm09 on tests designed to provide an influenza subtyping result and confirmed upon retest.

Note: Commercial influenza A rapid antigen tests and polymerase chain reaction (PCR) assays may not detect H5N1. A negative result does not rule out H5N1 infection.

For definitive testing, call the Pennsylvania Department of Health (DOH) at 877-724-3258 to arrange testing, courier service, and support.

For testing at the DOH Bureau of Laboratories and if possible, collect three swabs: nasopharyngeal, nasal, and oropharyngeal. Nasal and oropharyngeal swabs should be combined in one vial. If these specimens cannot be collected, either a nasopharyngeal or a combined nasal/oropharyngeal sample is acceptable. If the person has conjunctivitis (with or without respiratory symptoms), both conjunctival and nasopharyngeal swabs should be collected. Specimens should be placed in sterile viral transport media and placed on refrigerant gel-packs or at 4°C (refrigerator) for transport. Testing at the DOH Bureau of Laboratories (BOL) and courier services will be provided at no cost.

Testing of asymptomatic persons for H5N1 is not routinely recommended unless directed by local or state public

health.

Treatment

Patients with suspected or confirmed H5N1 should be treated with antiviral treatment (regardless of time since illness onset). Initiate influenza antiviral treatment with oseltamivir as soon as possible. Do not wait for test results to come back before starting treatment.

Detailed guidance on dosing and treatment duration is available at Interim Guidance of the Use of Antiviral Medications for the Treatment of Human Infection with Novel Influenza A Viruses Associated with Severe Human Disease.

Post-exposure prophylaxis (PEP) with influenza antiviral medications can be considered for any person who is potentially exposed to H5N1, such as household contacts. Decisions to initiate post-exposure antiviral prophylaxis should be based on clinical judgment, with consideration given to the type of exposure, duration of exposure, time since exposure, and known infection status of the birds or animals the person was exposed to.

Vaccine

No human vaccines for prevention of H5N1 are currently available in the United States. Seasonal influenza vaccines do not prevent H5N1. However, getting vaccinated annually against seasonal influenza reduces the chance of co-infection with seasonal and H5N1 influenza viruses. Co-infection can cause severe illness and might lead to a reassortment and emergence of a novel influenza virus.

Public Health Reporting

Contact your local health department or the Pennsylvania Department of Health (DOH) at 877-724-3258 to report possible infection, arrange testing, courier service, and support.