



UCSF Highly Pathogenic Avian Influenza/Novel Influenza Control Plan

I. Purpose

The purpose of this control plan is to provide infection prevention guidance for the management of patients with suspected and confirmed highly pathogenic avian influenza (HPAI), also known as “bird flu” or avian influenza.

II. Situation summary

Although there are several different types of HPAs, the main public health focus is currently on the influenza HPAI A(H5N1) virus because it is widespread in birds worldwide and is causing outbreaks in poultry and U.S. dairy cows. HPAI viruses are different from the common human influenza A and B strains that circulate seasonally because so far there have been relatively few human infections and these have mainly been limited to spread from animals to humans, including the recent case of infection causing conjunctivitis in a dairy farm worker presumably from exposure to infected dairy cattle.

Because influenza viruses have the potential to evolve to become more easily transmissible between humans and to cause severe human disease, it is important for healthcare facilities and clinicians to consider the possibility of HPAI A(H5N1) infection in people with signs or symptoms of acute respiratory illness or conjunctivitis and who have relevant exposure history.

III. Notification

- Report all suspected and confirmed HPAI cases immediately to Hospital Epidemiology and Infection Prevention (HEIP) and the San Francisco Department of Health (SFDPH):
 - i. Contact HEIP by calling the numbers on this [link](#)
 - ii. Contact SFDPH at (415) 554-2830

IV. Case definition

- **Confirmed case:** HPAI A(H5N1) virus infection in a person that is confirmed by the CDC’s Influenza Division or the California Department of Public Health laboratory.
- **Probable case:** A person meeting criteria for avian influenza A virus infection below and for whom laboratory test results do not provide a sufficient level of detail (e.g., meets epidemiologic criteria, tests positive for influenza A but the isolate is not typable) to confirm HPAI A(H5N1) virus infection.
- **Suspect case (also called a case under investigation):** A person meeting criteria for HPAI A(H5N1) virus infection below and for whom confirmatory laboratory test results are

unknown or pending.

Testing should be performed on persons who meet epidemiologic criteria **AND** either clinical **OR** public health response criteria:

- 1) **Epidemiologic Criteria:** Persons with exposure within the 10 days prior to illness onset to avian influenza A viruses through one of the following:
 - **Exposure to animals infected with avian influenza virus** is defined as follows:
 - Close exposure (within 6 feet) to animals with confirmed 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 droplet or dust containing virus from animal saliva, mucous, or feces; **OR**
 - Visiting a live poultry 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** – Close (within six feet) exposure to a person has confirmed, probable, or suspected infection with novel or avian influenza A virus, regardless of whether or not the contact was wearing PPE (e.g. in a household).
 - **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.
- 2) **Clinical Criteria:** Persons with signs and symptoms consistent with acute 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 flu-like illness (cough, sore throat, fever or feeling feverish, rhinorrhea, fatigue, myalgia, arthralgia, 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.
- 3) **Public Health Response Criteria:** Asymptomatic persons who public health authorities, in consultation with the CDC, determine that testing is needed in order to assess the clinical spectrum of infection with avian influenza A as part of public health investigations.

V. Transmission and Clinical presentation

- Transmission
 - To date, HPAI A(H5N1) has primarily been transmitted to people through exposure to infected animals (e.g., infected poultry, dairy cows), but has the potential to develop the ability to more efficiently spread between humans.
- 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.
- Clinical Presentation
 - Signs/symptoms may include uncomplicated upper respiratory tract signs and symptoms also referred to as influenza-like illness (ILI) [fever $\geq 100^{\circ}\text{F}$ plus cough or sore throat], fever (temperature of 100°F [37.8°C] or greater) or feeling feverish, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, fatigue, eye redness (or conjunctivitis), shortness of breath or difficulty breathing. Less common signs and symptoms are diarrhea, nausea, vomiting, or seizures.
 - Infection with influenza viruses, including avian influenza A viruses, does not always cause fever. Fever may not occur in infected persons of any age, particularly in persons aged 65 years and older or people with immunosuppression. The absence of fever should not supersede clinical judgment when evaluating a patient for illness compatible with avian influenza A virus infection.

VI. Isolation and Personal Protective Equipment (PPE)

- Isolation
 - i. Inpatient and ED:
 1. Place an order for Airborne, Contact, and Droplet Isolation.
 2. Place the Airborne, Contact, and Droplet isolation signs on the door.
 - ii. Ambulatory: Observe Airborne, Contact, and Droplet isolation
 - iii. The patient should always remain in the room with the doors closed unless diagnostic or therapeutic procedures (e.g., CT scan, surgery, etc.) are required and cannot be performed in the patient's room.
 - iv. Duration of isolation
 1. Isolation Precautions should be maintained until:
 - For suspect cases, until HPAI infection has been ruled out, OR
 - If a known exposure has occurred, at least 10 days from their last exposure, OR
 - if a confirmed case, until symptoms are improving (afebrile for at least 24 hours) and the patients is no longer determined to pose an infectious risk based on consultation with and approval of UCSF Hospital Epidemiology and Infection Prevention (HEIP) and SFDPH.
 2. Patients who do not require hospitalization, but remain potentially infectious to others, should be [isolated at home](#).
- Required PPE:
 1. Fit-tested N95 respirator (or PAPR)
 2. Eye protection
 3. Gown
 4. Gloves
- Donning and doffing PPE should be followed as per this [guidance](#):

- i. Donning PPE
 1. Healthcare personnel should don all the personal protective equipment (PPE) before entering the patient's room and use PPE during all contact with the patient including during transport.
 - ii. Doffing PPE
 1. Healthcare personnel must remove and discard gloves and gown and perform hand hygiene prior to leaving the patient's room.
 2. Fit-tested N95 respirator (or PAPR) and eye protection should be removed and discarded outside of the patient's room after every room exit (not in anteroom if one is present).
 3. Do not re-use or wear the same PPE without doffing between multiple patient interactions. Extended use of PPE is not allowed.
 4. Place a trashcan outside of the patient's room to discard the N95s and if disposable, the eye protection. If a PAPR or re-usable eye protection is worn, clean these with the hospital-approved disinfectant wipes after every room exit.
 - iii. The patient should always remain in the room with the doors closed unless diagnostic or therapeutic procedures (e.g., CT scan, surgery, etc.) are required and cannot be performed in the patient's room.
- The patient should always remain in the room with the doors closed unless diagnostic or therapeutic procedures (e.g., CAT scan, surgery) are required and cannot be performed in the patient's room.
 - After patient discharge, keep the room vacant with the door closed and isolation signs posted for one hour (wait times may be shorter for some rooms/areas depending on the air changes per hour).
 - i. When the appropriate wait time has passed, Hospitality staff can enter and clean the room using PPE as noted in this [guidance](#).
 - ii. Hospitality staff should take down the isolation signs after completion of room discharge cleaning.

VII. Patient transport

- Mask the patient (unless there are medical contraindications or patient is <2 years of age).
- Healthcare personnel transporting the patient that will have direct contact with the patient must wear all PPE required for Novel Respiratory Isolation (fit-tested N95, eye protection (or PAPR), gloves, gown). Refer to [this guidance](#) for additional information.

VIII. Bed placement

- Emergency Department
 - i. Ensure that the patient remains masked (unless medically contraindicated or

patient is <2 years of age).

- ii. Isolate the patient in a negative pressure Airborne Infection Isolation room (AIIR) as soon as possible.
- Inpatient
 - i. Admit the patient into a negative pressure Airborne Infection Isolation room (AIIR).
 - Ambulatory/Urgent Care
 - i. Isolate the patient in a negative pressure Airborne Infection Isolation (AIIR), if available. Otherwise place the patient into single exam room with the door closed until the patient can be moved to an AIIR.
 - ii. Ensure that the patient remains masked (unless medically contraindicated or patient is <2 years of age).

IX. Hand hygiene

- Hand hygiene is essential.
- Hospital-approved hand hygiene products including alcohol-based hand rubs and soap and water are effective.

X. Diagnostic testing and the Clinical Microbiology Laboratory

- The ability of diagnostic tests used to detect seasonal human influenza A and B has not been demonstrated for most novel influenza A viruses. Although some diagnostic seasonal influenza assays may detect the presence of some novel influenza A viruses, a negative result should not be used to rule out novel influenza A virus infection when testing possible human cases.
- Contact the Clinical Microbiology Laboratory if avian influenza is suspected in order to obtain diagnostic testing guidance.
- If appropriate, the Clinical Microbiology Laboratory and UCSF HEIP will coordinate testing with SFDPH and CDPH.
- For patients discussed with SFDP and HEIP meeting clinical and epidemiologic criteria for HPAI A(H5N1), RT-PCR testing should include:
 - 2 specimens in viral transport media: 1) a nasopharyngeal swab and 2) a combined nasal swab and oropharyngeal swab.
 - For patients with conjunctivitis (with or without respiratory symptoms), 2 specimens in viral transport media: 1) a conjunctival swab and 2) a nasopharyngeal swab.
 - Wear all PPE required for Airborne, Contact, and Droplet (i.e., fit-tested N95 respirator and eye protection (or PAPR), gown, and gloves) when obtaining specimens for testing.

XI. Treatment

- Guidance regarding treatment with antiviral agents should be obtained from the clinical infectious disease services.
- Initiation of antiviral treatment with a neuraminidase inhibitor (e.g., oseltamivir) is recommended as soon as possible for any patient with suspected or confirmed

infection with an avian influenza A virus. This includes patients who are [confirmed cases, probable cases, or cases under investigation](#), even if more than 48 hours has elapsed since illness onset and regardless of illness severity (outpatients or hospitalized patients). Treatment with oral or enterically administered oseltamivir (twice daily x 5 days) is recommended regardless of time since onset of symptoms.

- If antiviral chemoprophylaxis is initiated, **treatment dosing** of oseltamivir is recommended instead of the typical antiviral chemoprophylaxis regimen.

XII. Vaccination

- Vaccines approved for prevention of infection due to HPAI A(H5N1) are currently not available.
- Although not effective against HPAI A(H5N1), everyone six months of age and older should receive a seasonal influenza vaccine every year. Preventing seasonal influenza infection will also help to avoid the need to differentiate between influenza-like illness caused by seasonal influenza versus HPAI A(H5N1).

XIII. Visitation

- For the safety of visitors, in general, patients should be encouraged to limit in-person visitation to those who are essential for the patient's care and wellbeing while they are infectious.
 - i. Encourage use of alternative mechanisms for patient and visitor interactions such as video-call applications on cell phones or tablets, when appropriate.
- Visits to patients in isolation should be controlled to allow for:
 - i. Screening visitors for symptoms of acute respiratory illness before entering the facility.
 - ii. The patient's care team should provide instruction before visitors enter the patient's room on hand hygiene, limiting surfaces touched, and use of personal protective equipment (PPE).
 - iii. The patient's care team should maintain a list of all visitors who enter the patient's room.
 - iv. Visitors should not be present during aerosol-generating procedures.
 - v. Visitors should be instructed to limit their movement within the facility.
 - vi. Exposed visitors should be advised to report any signs and symptoms of acute illness to their health care provider for a period of at least 10 days after the last known exposure to the sick patient.

XIV. Environmental and Equipment Cleaning and Linen handling

- **Environmental cleaning**
 - i. While a room is occupied by a patient with suspected or confirmed HPAI A(H5N1), Hospitality staff entering the room must wear all appropriate PPE as described above.
 - ii. After patient discharge, keep the room vacant with the door closed

and isolation signs posted for one hour (wait times may be shorter for some rooms/areas depending on the air changes per hour).

- iii. When the appropriate wait time has passed, Hospitality staff can enter and clean the room using PPE as noted in this [guidance](#).
- iv. Standard hospital-approved disinfectants are effective. Follow appropriate contact times.

- **Equipment Cleaning**

- i. All equipment entering the patient room will be appropriately cleaned and disinfected using an approved hospital-approved disinfectant and appropriate contact time.

- **Linen**

- i. Soiled linen (e.g., bedding, towels, personal clothing) can be routinely handled.
- ii. Soiled laundry should be gently and promptly contained in an appropriate laundry bag and should never be shaken or handled in a manner that may disperse infectious material.

XV. Food service

- Management of food service items should be performed in accordance with routine procedures.

XVI. Waste handling

- Standard waste handling is appropriate.

XVII. Discharge planning

- Discharge planning must be coordinated with UCSF Hospital Epidemiology and Infection Prevention (HEIP) and SFDPH.
- Transfers to another healthcare facility must be coordinated with SFDPH, other relevant public health authorities, and the healthcare facility.

XVIII. Occupational Exposure

- **Contact Occupational Health Services (OHS) with questions and/or concerns for exposure (415) 885-7580.**
- Any healthcare personnel (HCP) who have cared for a patient with novel avian influenza should be advised to report any signs or symptoms of acute illness to their supervisor for a period of 10 days after the last known contact with the sick patient.
 - i. Facilities should keep track of all HCP (e.g., clinicians, environmental services workers, food service) who care for or enter the rooms of these patients.
- HCP who develop any respiratory symptoms after any contact with patients covered by this guidance should not report for work. These HCP should:
 - i. notify occupational health services, their supervisor, or other appropriate individual about their symptoms,

- ii. isolate themselves at home,
 - iii. implement respiratory hygiene and cough etiquette (e.g., wear a facemask),
 - iv. seek prompt medical evaluation, and
 - v. comply with exclusion from work until they are no longer deemed infectious to others.
- If HPAI influenza A virus infection is suspected, antiviral treatment should be started as soon as possible after symptom onset, especially for HCP with underlying medical conditions that may put them at increased risk for complications of influenza.
- For asymptomatic HCP who have been judged to have had an unprotected exposure (e.g., within 6 feet of a symptomatic patient with novel influenza A virus infection without use of recommended respiratory protection and eye protection), exclude the provider from work until 10 days after their last exposure to monitor for signs and symptoms of respiratory illness.
 - i. If necessary to ensure adequate staffing of the facility, the asymptomatic healthcare worker could be considered for continuing work if they:
 - Have a negative influenza molecular assay result on upper respiratory tract specimens AND
 - Are started on post-exposure antiviral chemoprophylaxis within 2 days of the exposure AND
 - Wear a facemask for source control. The facemask should be worn at all times while in the healthcare facility during a probable incubation period, e.g., 10 days after the exposure unless in a situation where a higher-level of respiratory protection is indicated (e.g., entering the room of a patient on Airborne Precautions). Antiviral chemoprophylaxis should continue for the duration of the potential incubation period.

XIX. Additional Response Guidance

- Any response guidance not outlined in this document will be developed as needed based on risk assessment. Guidance modifications will be reviewed and approved by the UCSF HEIP leadership prior to implementation.

References

CDPH Tip Sheet

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Avian-and-NovelInfluenzaQuicksheet.pdf>

CDC Infection Prevention Guidance

<https://www.cdc.gov/flu/avianflu/novel-flu-infection-control.htm>

CDC Testing Guidance

<https://www.cdc.gov/flu/avianflu/severe-potential.htm>