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 confirmed, suspected, or probable highly pathogenic avian influenza (HPAI), also known as “bird flu” or avian influenza.

II. Situation summary

Although there are several different types of HPAIs, 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 several recent cases leading to conjunctivitis and/or mild respiratory symptoms attributed to infected dairy cow exposures.

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 confirmed, probable, or suspected HPAI cases (case definition below) immediately to Hospital Epidemiology and Infection Prevention (HEIP).
  - Contact HEIP by calling the numbers on the HEIP website here.
- HEIP will report HPAI cases to San Francisco Department of Health (SFDPH) at (628) 217-6100.

IV. 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 and symptoms consistent with acute respiratory tract infection (e.g., cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, fatigue) and/or conjunctivitis. Less common signs and symptoms are difficulty breathing, 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.

V. Case definitions

- **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 HPAI A(H5N1) 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.

VI. Criteria that should prompt HPAI A(H5N1) testing

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

1) **Epidemiologic Criteria:** Persons with recent exposure (within 10 days) to HPAI A(H5N1) virus through one of the following:
   - **Exposure to HPAI A(H5N1) virus infected birds or other animals** defined as follows:
     - Close exposure (within six feet) to birds or other animals (e.g., dairy cows) with confirmed avian influenza A(H5N1) virus infection. Bird or other animal exposures can include, but are not limited to handling, slaughtering, defeathering, butchering, culling, or preparing birds or other animals for consumption, or consuming uncooked or undercooked food or related uncooked food products, including unpasteurized (raw) milk.
     - Direct contact with surfaces contaminated with feces, unpasteurized (raw) milk or other unpasteurized dairy products, or bird or animal parts (e.g., carcasses, internal organs) from infected birds or other animals.
     - Visiting a live bird market with confirmed HPAI a(H5N1) virus infections in birds or associated with a case of human infection with HPAI A(H5N1) virus.
   - **Exposure to an infected person** – Close (within six feet) unprotected (without use of respiratory and eye protection) exposure to a person who is a confirmed, probable, or symptomatic suspected case of human infection with HPAI A(H5N1) virus (e.g., in a household or healthcare facility).

- **Laboratory exposure** (unprotected exposure to HPAI A(H5N1) virus in a laboratory)

2) **Clinical Criteria:** Persons with signs and symptoms consistent with acute upper or lower respiratory tract infection, conjunctivitis or complications of acute respiratory illness without an identified cause. In addition, gastrointestinal symptoms such as diarrhea are often reported with HPAI A(H5N1) virus infection. Examples include but are not limited to:
   - Mild illness (e.g., cough, sore throat, eye redness or eye discharge such as conjunctivitis, fever or feeling feverish, rhinorrhea, fatigue, myalgia, arthralgia, headache)
   - Moderate to severe illness: (e.g., shortness of breath or difficulty breathing, altered mental status, seizures)
   - Complications: pneumonia, respiratory failure, acute respiratory distress syndrome, multi-organ failure (respiratory and kidney failure), sepsis, meningoencephalitis
3) **Public Health Response Criteria:** Asymptomatic persons needing to undergo testing for surveillance purposes or otherwise based on the recommendation of public health authorities, in consultation with the CDC.

VII. Diagnostic testing and the Clinical Microbiology Laboratory

- Contact the Clinical Microbiology Laboratory and HEIP if avian influenza is suspected to obtain diagnostic testing guidance at 415-353-1268 and/or through email at clinlabmicrobiologysupervisorsspecialsts@ucsf.edu.
- Multiple samples may need to be collected from multiple sites depending on the patient's symptoms and the index of suspicion. See Table 1.

Table 1. Testing indication, orders, and instructions for HPAI A(H5N1) testing.

Testing Indication	Test Order	Testing instructions
Patient in the ambulatory or emergency setting	Flu A/B/RSV	UCSF Lab Manual
Hospitalized patient	Respiratory Viral Panel	UCSF Lab Manual
Patient with conjunctivitis	Microbiology – Test Not Listed (LAB5088) *Order comments: "conjunctival swab for avian flu testing at SFDPH"*	Obtain one swab of each affected eye—these can be combined into a single viral transport media tube.
Patients who consumed raw dairy products with gastrointestinal symptoms	Microbiology – Test Not Listed (LAB5088) *Order comments: "stool sample for avian flu testing at CDPH"*	Collect a stool sample in sterile container. This test is not currently available and should only be collected after discussion with SFDPH and CDPH.
Patient deemed high suspicion with need for concurrent testing at SFDPH	Microbiology – Test Not Listed (LAB5088) *Order comments: "respiratory swab for avian flu testing at SFDPH"*	Obtain two separate oropharyngeal and nasal swabs; these can be combined into a single viral transport media tube.

- Respiratory sample testing can be done sequentially (first at UCSF, then at SFDPH) or in parallel with SFDPH depending on index of suspicion.
    - For sequential testing, the specimen is tested first at the clinical microbiology lab.
    - If the Flu A/B/RSV PCR test detected Flu A, subsequent testing with the RVP panel will be performed.
    - The RVP panel detects all influenza A viruses and can further subtype these as H1 or H3 strains of influenza (i.e., seasonal influenza).
    - Patients positive for influenza A but negative for H1 or H3 may undergo subsequent testing for H5N1 based on clinical suspicion for H5N1 influenza infection.
- 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.
- For transport to SFDPH, swabs should be placed in specimen collection vials and refrigerated or frozen after collection. Refrigerated specimens should be transported to the public health laboratory on cold packs. Frozen specimens should be transported on dry ice.

VIII. 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:

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.

IX. Patient transport

- Ensure that the patient wears a medical/surgical mask (unless there are medical contraindications, or patient is <2 years of age).
- Healthcare personnel transporting the patient who will have direct contact with the patient must wear all PPE required for Airborne, Droplet, and Contact Isolation (fit-tested N95 respirator and eye protection (or PAPR), gloves, and a gown). Refer to this guidance for additional information.

X. Bed placement

- Emergency Department
   i. Ensure that the patient remains masked (unless medically contraindicated or patient is <2 years of age).

i. Isolate the patient in a negative pressure Airborne Infection Isolation room (AIIR) as soon as possible. Otherwise place the patient into single exam room with the door closed until the patient can be moved to an AIIR.

- Inpatient
  i. Admit the patient into a negative pressure Airborne Infection Isolation room (AIIR).
- Ambulatory/Urgent Care
  ii. 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.
  iii. Ensure that the patient remains masked (unless medically contraindicated or patient is <2 years of age).

XI. Hand hygiene

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

XII. 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, suspected, or probable cases, 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.

XIII. 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).

XIV. 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.

XV. Environmental and Equipment Cleaning and Linen handling

- **Environmental cleaning**
    i. While a room is occupied by a patient with confirmed, suspected, or probable 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.

XVI. Food service

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

XVII. Waste handling

- Standard waste handling is appropriate.

XVIII. 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.

XIX. Occupational Exposure

- **Contact Occupational Health Services (OHS) with questions and/or concerns for exposure (415) 885-7580.**
- Any healthcare personnel (HCP), **including people wearing recommended PPE,** who have cared for a patient with HPAI A(H5N1) virus infection 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 <u>unprotected exposure</u> (e.g., within 6 feet of a symptomatic patient with HPAI A(H5N1) 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.

XX. 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/CDPH-Human-Avian-Influenza-A(H5N1)-Quicksheet-ADA.pdf

CDPH Avian Influenza Resources
https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/NovelFluLHDs.aspx

CDPH Evaluation and Testing for Human Avian Influenza A (H5N1) Infection 12/6/24
https://www.cdph.ca.gov/Programs/OPA/Pages/CAHAN/Evaluation-and-Testing-for-Human-Avian-Influenza-A-H5N1-Infection.aspx

CDC Infection Prevention Guidance
https://www.cdc.gov/bird-flu/hcp/novel-flu-infection-control/?CDC_AAref_Val=https://www.cdc.gov/flu/avianflu/novel-flu-infection-control.htm

CDC Testing Guidance
https://www.cdc.gov/bird-flu/php/severe-potential/index.html