

## Novel Influenza in Cats

### I. Description and Epidemiology

---

#### A. Overview

Many influenza virus strains are adapted to circulate in populations of certain animal groups, including birds, pigs, horses, and dogs. There is no influenza virus adapted to cats, but influenza viruses adapted to other animals, including humans, occasionally spill over into cats. Any influenza virus isolated from a cat is considered a novel influenza virus. There have been cases of influenza in cats caused by avian A(H7N2), equine A(H3N8), and canine A(H3N2). Cats appear to be very susceptible to infection with the strain of avian A(H5N1) currently circulating in North America.

#### B. Novel Influenza in Cats

Influenza viruses can be transmitted via inhalation, direct contact (ingestion, contact with mucous membranes), or indirect contact (contact with contaminated surfaces). The cases of A(H5N1) in cats have highlighted the role of foodborne transmission of influenza viruses to cats. Cats have acquired A(H5N1) infection through ingestion of contaminated raw milk, raw pet food, and raw meat/poultry sold for human consumption. Cats have also been exposed to the virus through direct contact with infected animals (e.g., wild birds or dairy cattle) and/or their contaminated environment.

The incubation period in cats is typically short, ranging from 1 to 5 days. Influenza viruses in other species typically cause respiratory illness or non-specific signs of illness (e.g., fever, lethargy), and most cases are mild. However, influenza A(H5N1) can cause systemic infection in a cat, affecting several organ systems, and often leads to high morbidity and mortality. High viral loads have been detected in the brain, respiratory tract, urine, rectum, and oropharynx. Clinical signs include lethargy, loss of appetite, and fever; respiratory illness; and neurologic illness. Neurologic signs are progressive and mimic those of rabies; signs include ataxia, paralysis, seizures, and cortical blindness. There is no treatment protocol that has been shown to be effective to treat influenza in cats.

#### C. Testing

Veterinarians who want to test cat patients for influenza may contact a commercial veterinary diagnostic laboratory to arrange for testing. Veterinarians may also contact their local health department to inquire about testing options.

If a veterinarian approaches the local health department with a request to test a cat for influenza, public health staff should gather information on the case to determine if the

cat is an appropriate candidate for influenza testing. Testing can be done on (1) dead cats that have tested negative for rabies or (2) live cats that are ill and showing clinical signs consistent with influenza. In both cases, an assessment of the cat's clinical illness and exposure history should be done to determine if the cat was at an increased risk for infection with A(H5N1). A Feline Influenza Test Request Form (see [Appendix B](#)) is available to assist local public health departments in collecting testing criteria and clinical history information from veterinarians requesting Influenza A testing. The following clinical and history criteria can be used to determine if the cat is an appropriate candidate for influenza A testing:

1. The cat must have **one or more of the following clinical presentations** (after other possible etiologies have been ruled out)
  - Acute onset respiratory illness (e.g., dyspnea, tachypnea, oculonasal discharge, thoracic radiograph findings consistent with pneumonia)
  - Neurologic illness (acute and rapidly progressive encephalopathy, ataxia, paralysis, seizures, blindness/chorioretinitis) and negative for rabies
  - Lethargy, loss of appetite, and fever (especially with neutropenia/leukopenia, thrombocytopenia, and/or hepatopathy)

*and*

2. A history of one of the following **within the 2 weeks preceding onset of the present illness**:
  - Consumption of raw milk, raw meat/raw eggs, or raw pet food
  - Hunting and/or consumption of wild birds or poultry
  - Close proximity to or direct contact with dairy farms or poultry farms with H5 detection
  - Lives in the same household or had frequent contact with a cat that has presumptive or confirmed H5 infection

The CDPH Veterinary Public Health Section ([vetph@cdph.ca.gov](mailto:vetph@cdph.ca.gov), 916-552-9740) is available to assist LHDs with consultation on requests for influenza testing to confirm that the indicated cat meets testing criteria.

Some local public health laboratories may elect to test specimens from a cat for influenza A using the same assay used for humans. Local public health should contact CDPH Viral and Rickettsial Disease Laboratory (VRDL) at [VRDL.submittal@cdph.ca.gov](mailto:VRDL.submittal@cdph.ca.gov) or (510) 307-8585 if they have specimens from a cat that they plan to test for influenza A at their local public health laboratory, or if they obtain specimens from a cat that they need to forward to VRDL for testing. Specimens that test positive for Influenza A at a public health laboratory should be forwarded to the CDPH VRDL for sequencing and further routing to the National Animal Health Laboratory

Network (NAHLN) and the USDA National Veterinary Services Laboratory (NVSL) for confirmation.

See [Appendix A](#) for guidance for public health laboratories related to testing cats for novel influenza.

## II. Case Surveillance, Investigation, and Reporting

### A. Reporting

Highly pathogenic avian influenza (H5, H7) in birds and cattle is mandated reportable to the California Department of Food and Agriculture (CDFA; [Title 3 California Code of Regulations §797](#)). HPAI when it occurs in non-avian species is considered a novel influenza and is mandated reportable as a Novel Virus Infection with Pandemic Potential per California Public Health regulations ([Title 17 California Code of Regulations §2500](#)).

Veterinarians must report cats with known or suspected infection with influenza A to the [local health officer](#) in the jurisdiction where the cat resides. Veterinarians must provide to public health officials information on the case-patient (cat) and contacts as determined by the local health officer to inform the public health investigation and control activities.

### B. Local Health Jurisdiction General Investigation Guidelines

If a cat tests positive for influenza A, local public health officials should gather information on the cat to attempt to identify the source of its exposure. Officials should determine who had direct contact with the cat and, if applicable, how to reduce the ongoing risk that infected cats might pose to people and other animals.

The infected cat(s), other cats, and people who had contact with the cat should be managed according to the following principles:

#### *Index Case – Infected Cat*

- Cats are typically dead-end hosts for influenza, but there have been cases of transmission to humans after prolonged, unprotected contact (e.g., outbreak of H7N2 in shelter cats in 2016). The amount, time period, and modality of virus shedding, and probability of transmission of the virus to people or other animals, are unknown.

#### *Contacts – Animals*

- The potential for cat-to-cat transmission of influenza viruses remains unknown. Infections in multiple cats in the same household are more likely a result of

coincidental exposure to the same food source (e.g., raw pet food, raw milk). Owners should consult with their veterinarian if they have concerns about other animals in the household.

### *Contacts – Humans*

- Anyone who has intimate contact with the index cat while it is ill should wear appropriate personal protective equipment (PPE).
  - Owners: Owners should limit their cat's contact with people who are at higher risk for severe illness, including children under 5 years of age, adults over 65 years of age, pregnant women, and immunocompromised persons. The number of people who have contact with the cat and its environment (e.g., litter box) at home should be limited, and persons should wear a mask and practice good hand hygiene after touching their cat. All household members should monitor themselves for signs of influenza-like illness and report any illness to their health care provider. They should consult with their health care provider if they have any questions or concerns about their own health.
  - Veterinary or shelter staff: Cats that are known or suspected to have influenza should be isolated in cages/wards (if possible) or, at a minimum, kept separated from other animals. Veterinarians and veterinary staff who will have ongoing contact with the index cat while it is ill should wear appropriate PPE, including:
    - NIOSH approved respirators (N-95)
    - Disposable gloves
    - Safety goggles or a face shield
    - Disposable or dedicated gowns

### **III. Additional Resources**

- [American Veterinary Medical Association – Avian influenza A\(H5N1\) in cats](https://www.avma.org/resources-tools/animal-health-and-welfare/animal-health/avian-influenza/avian-influenza-h5n1-cats)  
<https://www.avma.org/resources-tools/animal-health-and-welfare/animal-health/avian-influenza/avian-influenza-h5n1-cats>
- [University of Wisconsin Shelter Medicine](https://sheltermedicine.wisc.edu/recommendations-for-monitoring-and-response-to-possible-infections-with-avian-influenza-type-a-h5n1-in-cats-for-shelters-rescues-and-access-to-care-clinics/)  
<https://sheltermedicine.wisc.edu/recommendations-for-monitoring-and-response-to-possible-infections-with-avian-influenza-type-a-h5n1-in-cats-for-shelters-rescues-and-access-to-care-clinics/>

## Appendix A

### Guidance for Public Health Laboratories for Testing Cats for Novel Influenza

The CDPH Viral and Rickettsial Diseases Laboratory (VRDL) has prepared guidance on collection of specimens for influenza testing of cats.

All specimens from an animal that screens positive for influenza A should be routed to CDPH VRDL. CDPH VRDL will perform sequencing of the sample and coordinate transfer to the National Animal Health Laboratory Network (NAHLN) and the USDA National Veterinary Services Laboratory for confirmatory testing.

Please notify VRDL at [VRDL.submittal@cdph.ca.gov](mailto:VRDL.submittal@cdph.ca.gov) or 510-307-8585 if your laboratory will be forwarding non-negative influenza A animal samples to CDPH VRDL. LHDs may utilize the Feline Influenza Test Request Form (Appendix B) to collect pertinent information from the submitting veterinarian. Please include the following information in your notification:

- Animal name, species, sex, and age (if known) \*
- Clinical history/symptoms present \*
- Diet and/or exposure history that meet Influenza A testing criteria \*
- Name of veterinary clinic and submitting veterinarian, if applicable \*
- Laboratory testing results \*
- **Number of humans exposed and being monitored**

\* Please forward a copy of the completed Feline Influenza Test Request Form directly to [VRDL.submittal@cdph.ca.gov](mailto:VRDL.submittal@cdph.ca.gov).

## Appendix B

### Feline Influenza Test Request Form

Veterinary Clinic Name: \_\_\_\_\_

Veterinarian Name: \_\_\_\_\_

Clinic Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

Client Last Name: \_\_\_\_\_

Animal Species: ☐ *Felis catus* ☐ Other, specify \_\_\_\_\_

Pet/Animal Name: \_\_\_\_\_

Sex: ☐ Male ☐ Male Neutered ☐ Female ☐ Female Spayed ☐ Unknown

Age: \_\_\_\_\_

Breed: \_\_\_\_\_

Color: \_\_\_\_\_

#### Medical History

Current Comorbidities (e.g., cancer, asthma, autoimmune): \_\_\_\_\_

Vaccinated for Rabies? ☐ Yes ☐ No ☐ Unknown

Date of Last Rabies Vaccine: \_\_\_\_\_

#### Clinical Signs, Symptoms, and Laboratory Values (Check all that apply.)

Date of Current Illness Onset: \_\_\_\_\_

Date of First Veterinary Care Visit for Current Illness: \_\_\_\_\_

Acute Respiratory Illness	Neurologic Illness	Miscellaneous
<input type="checkbox"/> Oculonasal discharge <input type="checkbox"/> Dyspnea <input type="checkbox"/> Tachypnea <input type="checkbox"/> Chest X-ray findings consistent with pneumonia	<input type="checkbox"/> Encephalopathy <input type="checkbox"/> Seizures <input type="checkbox"/> Blindness/Chorioretinitis <input type="checkbox"/> Paresis/Paralysis <input type="checkbox"/> Ataxia	<input type="checkbox"/> Fever <input type="checkbox"/> Lethargy <input type="checkbox"/> Anorexia <input type="checkbox"/> Vomiting <input type="checkbox"/> Diarrhea

Additional Clinical and Laboratory Findings (including CBC, liver and renal function tests):

---

---

Other differential diagnoses/etiologies excluded or pending: \_\_\_\_\_

---

Status as of (date) \_\_\_\_\_: ☐ Recovered ☐ Ill at Home ☐ Hospitalized ☐ Dead/euthanized

Number of other cats in household: \_\_\_\_\_

Are other cats ill? ☐ Yes ☐ No ☐ Unknown

**Recent Exposure History** (Recent history is defined as within 2 weeks prior to onset. Check all that apply.)

- ☐ Consumed raw milk
- ☐ Consumed raw meat, eggs, or other food intended for human consumption
- ☐ Consumed raw pet food
- ☐ Observed hunting and/or consuming wild birds or poultry
- ☐ Close proximity to or direct contact with infected dairy farms and infected poultry farms

Describe exposure: \_\_\_\_\_

---

---

(Food exposure - type of food, flavor and size of pet food, where purchased, if any still available  
Animal exposure - nature of exposure, type of bird, and whether animal is sick/dead)

Submission Date: \_\_\_\_\_