

Veterinary Advisory

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CANINE INFLUENZA VIRUS (Canine Flu)

SITUATION: University of Florida researchers report that outbreaks of canine influenza virus, which causes an acute respiratory infection, have been identified in dogs in shelters, humane societies, boarding facilities and veterinary clinics in Florida, predominantly in Broward, Dade, Palm Beach and Duval counties.

This highly contagious virus is a newly emerging respiratory pathogen in dogs and causes a clinical syndrome that mimics “kennel cough.” Canine influenza virus infections are frequently mistaken for infections due to the *Bordetella bronchiseptica*/parainfluenza virus complex.

CLINICAL SIGNS: Because this is a newly emerging pathogen, all dogs, regardless of breed or age, are susceptible to infection and have no naturally acquired or vaccine-induced immunity. Virtually 100 percent of exposed dogs become infected. Nearly 80 percent have clinical signs. There are two general clinical syndromes — the milder syndrome and a more severe pneumonia syndrome. The milder disease syndrome occurs in most dogs.

In the milder disease, the most common clinical sign is a cough that persists for 10 to 21 days despite therapy with antibiotics and cough suppressants. Most dogs have a soft, moist cough, while others have a dry cough similar to that induced by *Bordetella bronchiseptica*/parainfluenza virus infection. Many dogs have purulent nasal discharge and a low-grade fever. The nasal discharge likely represents a secondary bacterial infection that quickly resolves with treatment with a broad-spectrum, bactericidal antibiotic.

Some dogs develop a more severe disease with clinical signs of pneumonia, such as a high fever (104 F to 106 F) and increased respiratory rate and effort. Thoracic radiographs may show consolidation of lung lobes. Dogs with pneumonia often have a secondary bacterial infection and have responded best to a combination of broad-spectrum, bactericidal antibiotics and maintenance of hydration with intravenous fluid therapy.

FATALITY RATE: Fatal cases of pneumonia have been documented, but the fatality rate so far is low, at 1 percent to 5 percent.

INCUBATION/SHEDDING PERIOD: The incubation period is two to five days after exposure before clinical signs appear. Infected dogs may shed virus for 7 to 10 days from the initial day of clinical signs. Nearly 20 percent of infected dogs will not display clinical signs and become the silent shedders and spreaders of the infection.

DIAGNOSIS: There is no rapid, real-time test for diagnosis of dogs with an acute influenza virus infection. Current diagnostic tests rely on detection of antibodies to canine influenza virus, which are detected as early as seven days after onset of clinical signs. Paired acute and convalescent serum samples are necessary for diagnosis of

recent infection. The convalescent sample is collected at least two weeks after the acute sample. There are many situations in which collection of an acute sample is not feasible. In this case, testing of a convalescent sample will indicate whether the dog was infected at some time in the past. Serology tests not only indicate if a dog was infected, but also serve to alert veterinarians that the virus is present in their community so they can take precautions with dogs presenting for "kennel cough."

In addition to serology, the lungs and distal trachea from dogs that died of pneumonia can be tested for influenza virus by PCR analysis and virus culture.

PREVENTION: There is no vaccine for canine influenza virus at this time. This virus is spread by aerosolized respiratory secretions, contaminated inanimate objects and even by people moving back and forth between infected and uninfected dogs. This is an enveloped virus that is most likely killed by routine disinfectants, such as quaternary ammoniums and 10 percent bleach. Because the virus is highly contagious and all dogs are susceptible to infection, veterinarians, boarding facilities, shelters and pet stores should use isolation protocols for dogs that have a "kennel cough."

WHAT VETERINARIANS CAN DO: Veterinarians can submit serum samples for canine influenza antibody titers. Paired acute and convalescent samples are preferable for confirmation of infection, while single samples collected after seven days of clinical disease are also useful. In addition to determining infection, these samples contribute toward virus surveillance in Florida. Currently, there is no fee for this testing. The turnaround time for results is less than two weeks. Please contact Dr. Cynda Crawford for further instructions on serum sample submission.

Veterinarians may also submit fresh (no formalin or freezing) lung and tracheal tissues from dogs that die from pneumonia. Canine influenza virus culture and PCR analysis will be performed on these tissues. Virus recovered from these samples will greatly contribute toward development of vaccines and diagnostic tests. If you have samples for submission, please contact Dr. Cynda Crawford for instructions on handling of the tissues.

FOR MORE INFORMATION: Contact Dr. Crawford in the Department of Small Animal Clinical Sciences at the University of Florida College of Veterinary Medicine for sample submission via phone (352) 392-4700, ext. 5731; fax (352) 392-6125.

This information has been compiled by the Southeastern Newfoundland Club, as part of their comprehensive rescue program. We are grateful for their generosity in sharing all of their hard work.- NCA 2006