INFORMATION ON THE NEW CANINE INFLUENZA

The latest on Flu testing from Cornell & University of Florida

Cornell University, Animal Health Diagnostic Center
P.O. Box 5786
Ithaca, N.Y. 14852-5786
t. 607 253-3900; f. 607 253-3943

In partnership with the NY State Department of Agriculture & Markets? Veterinary Diagnostic Laboratory Program Appropriate Samples for Detecting the Presence of Canine Influenza Virus As with most viral diseases, there are several ways to determine the role of a virus in a clinical event. While there is a tendency to want a single sample type that will work in all cases, the reality is that this is not possible. The list of possible tests is:

1. At present the most reliable way to diagnose canine influenza virus infections is by serological tests. The direct link between canine influenza virus and a clinical event is through the collection of acute and convalescent serum samples. First sample is collected at the first presentation of the patient and then 2?3 weeks later. Serum can be separated from the clot and held in the refrigerator until collection of the second sample. Samples can be shipped over night without cold packs or 2?day delivery with cold packs. For animals that have recov? ered from a case of ?kennel cough?, a single serum sample can determine whether the animal has been infected with canine influenza virus at some point in the past. As this is a rela? tively new pathogen of dogs, we do not expect to find a high seroprevalence in unaffected dogs.
   Canine influenza virus HI test: $20.00 per sample after October 1, 2005.
2. Isolation of canine influenza virus is a relatively unreliable way to confirm the infection. The reason for this is not clear, but time of sampling is probably the main culprit. Pharyngeal swabs collected several days after the onset of clinical signs are not useful for canine influenza either for virus isolation or antigen?capture ELISA tests. All virus isolates to date have been obtained from lung tissue from dogs that have died acutely (hemorrhagic pneumonia). We are especially interested in getting lung tissue from

these dogs in order to attempt an isolation. Until further notice we will do testing on tissue samples for canine influenza virus at no cost if a complete history of the case is provided. We will not routinely test these samples for other viruses unless specifically requested, and this will incur the $50. virus isolation fee.

We are also interested in pharyngeal swabs taken from dogs with high fevers and minimal clinical signs. In this case, we are trying for samples very early in the infection. These samples will be screened by PCR testing and if positive will be used for virus isolation. Again, these will be done at no cost if they meet the criteria stated above along with the complete history. Testing will be done at the discretion of the lab director as to whether the case fits the accepted profile. Isolation attempts for other viruses will not be done unless specifically requested ($50. fee). All dogs that cough are not infected with canine influenza virus. The standard respiratory pathogens of dogs have not gone away. One should always consider a complete diagnostic work up that would include cultures for bacteria and mycoplasma.

Submission forms for the AHDC (in .PDF format) can be found on the Laboratory's web site. Go to diaglab.vet.cornell.edu and click on ?Testing Services? in the box on the left, then on ?Sample Submission Requirements.? Released September 29, 2005

University of Florida, College of Veterinary Medicine
Protocol for Collection and Shipping of Serum Samples for Canine Influenza Antibody Tests

Please visit the webpage at http://www.diaglab.vet.cornell.edu/issues/civ.asp#samp for information on sample collection and shipping to the Animal Health Diagnostic Center at Cornell University.

The instructions in this protocol are ancillary to the AHDC?s instructions and include a request for veterinarian participation in our project to better define the disease syndromes and risk factors associated canine influenza virus infection, as well as improve surveillance for virus activity in the U.S. and Canada.

Confirmation of recent infection requires collection of a blood sample during the first week of illness (acute sample) followed by collection of another sample 2-3 weeks later (convalescent sample). Diagnosis is based on a 4-fold rise in antibody titer from the acute to convalescent phase.

The acute phase of illness is defined as the first week of clinical signs. Antibodies are generally not detectable during this time. Canine flu antibodies are detectable after the first week of illness to at least 2 years after infection to date.

If an acute sample is not available, exposure to the canine influenza virus can be confirmed by the presence of antibodies in a convalescent blood sample collected after 1 week of clinical disease. Convalescent samples only indicate virus exposure at some point in the past.

Collect about 2 ml of blood from each dog into serum separator tubes. The minimum volume of serum needed is 0.5 ml.

Serum can be separated from the clot and held in the refrigerator until collection of the second

sample. Identify each tube by the dog?s name and date.

Samples can be shipped overnight without ice packs or 2 day delivery with ice packs.

Place the tubes in a plastic ziplock baggie or a freezer box for shipment.

Please complete the submission form for the Animal Health Diagnostic Center. The completion of this form is required for the samples to be processed appropriately. The form can be downloaded at

http://www.diaglab.vet.cornell.edu/news.asp

To further our knowledge of the prevalence of canine influenza virus in the canine population and to better define the clinical disease syndromes and risk factors associated with infection, we request that you record the following information for each sample on your clinic letterhead or other appropriate paper:

1. Name of veterinarian
2. Name and address of clinic
3. The dog?s name, breed, age, and sex
4. Potential exposure history (shelter adoption, boarding, pet store, etc)
5. Onset of illness
6. Clinical signs (brief summary)
7. Duration of illness

Please enclose this information with your shipment. The confidentiality of the clinic and patients will be protected.

Thank you!
Cynda Crawford, DVM, PhD
Small Animal Clinical Sciences
College of Veterinary Medicine
University of Florida
Gainesville, FL

Veterinary Advisory detailing the situation in Florida by Dr. Crawford Department of Small Animal Clinical Sciences at the University of Florida, Gainesville

Veterinary Advisory
Aug. 16, 2005
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 dog 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 lever. 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 seven 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 arc 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 will contribute toward virus surveillance in Florida. For information on sample submission and costs, please see http://www.diaglab.vet.cornell.edu/news.asp

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; or e-mail crawfordc@mail.vetmed.ufl.edu .