

CANINE INFLUENZA

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Compiled from various sources by Marg Pough,
checked for accuracy by Dr Edward J Dubovi, Animal Health Diagnostic Center at Cornell

Dr. Dubovi confirmed to me today that an isolate from the current influenza outbreak was sequenced at the National Veterinary Services Laboratories in Ames, IA and the isolate is identical to the strain that has been circulating in Asia since 2007. It is an Influenza A H3N2 virus and is different from the Influenza A H3N8 virus which had been responsible for earlier US outbreaks.

Canine Influenza Virus – risk factors & precautions

From the 2009 release from the AHDC at Cornell that apply today

Risk factors for the infection are having dogs in closely confined conditions such as in boarding kennels, day care settings and animal rescue shelters. Animals being relocated from the rescue shelters seem to be a main source of the movement of the virus to new locations. The clinical signs associated with the infection are indistinguishable from the traditionally defined “kennel cough” now more appropriately referred to as acute respiratory disease in dogs. The morbidity rate in normal populations can be very high (60-80%) while the mortality rate due exclusively to CIV is very low. The significance of a CIV infection is that it compromises the normal defense mechanisms of the canine respiratory tract so that secondary bacterial infections are common sequelae. Dogs may cough for several weeks after infection, but they are not contagious at this time. Dogs are generally free of CIV by 7 days post onset of clinical signs.

Those involved in the breed rescue organizations should not be moving dogs from affected areas without vaccinating the animals that will be coming in contact with the rescued animal. It should be noted that the approved vaccine is a killed product that requires two doses of vaccine three weeks apart to achieve maximum protection.

The question of survival on/in the environment is always complicated by the exact conditions of the environment. Virus on a solid surface at 70F in the sunlight is dead within a few minutes. Virus in a cool, moist, and dark environment may survive for several days and at 4C it might be weeks. If one has cleaning procedures that take care of parvovirus, then there will be no influenza surviving. Transmission through fomites (saliva on hands or clothing) is certainly a possibility. It may be a major route of transmission in the shelters where workers go from one cage to another without changing gloves if they have them. Common sense would dictate that if one is around a dog that has clinical signs of a respiratory infection, then at a minimum one should go through the hand washing recommendations suggested to prevent spread of H1N1.

From the CDC Website: <http://www.cdc.gov/flu/news/canine-influenza-update.htm>

April 13, 2015 – A canine influenza A H3N2 virus is responsible for an outbreak of dog flu reported in the Chicago area according to a [press release issued by Cornell University, home to the New York State Animal Diagnostic Laboratory](#). Dog flu is a contagious respiratory disease in dogs. Two canine influenza viruses have been identified worldwide: an influenza A H3N8 virus and an influenza A H3N2 virus. No human infections with either of these canine influenza viruses have ever been reported.

Previously, canine influenza A H3N8 viruses have been identified in U.S. dog populations. However, testing at the New York State Animal Diagnostic Laboratory and the Wisconsin Veterinary Diagnostic Laboratory identified the dog flu virus responsible for the current outbreak in dogs as an H3N2 virus similar to Asian H3N2 dog flu viruses that have been detected in dogs in parts of Asia since 2007.

Signs of dog flu infection in dogs include cough, runny nose and fever, but not all dogs will show signs of illness. The severity of illness associated with dog flu in dogs can range from no signs to severe illness resulting in pneumonia and sometimes death in dogs. Tests are available to determine if a dog has been infected. CDC recommends that people concerned about dog flu in their pets speak to their veterinarian.

Almost all dogs can be susceptible to infection with canine influenza viruses, and illness tends to spread among dogs housed in kennels and shelters. A vaccine to protect dogs against canine influenza A H3N8 has

been available in the United States since 2009. It is not known yet whether the H3N8 dog flu vaccine will offer protection against the H3N2 dog flu virus.

To date, there is no evidence of transmission of dog flu viruses from dogs to people and there have been no reported human infections with the canine influenza viruses. Animal studies suggest that neither virus transmits well to other companion animal species[308 KB, 10 pages] with the exception of H3N2 dog flu, which has been known to infect cats. CDC considers the human health risk posed by this dog flu outbreak to be low at this time. Once available, full genetic sequencing information on this virus will further inform the human health risk assessment. CDC will continue to watch this situation closely and provide updated information as it becomes available.

Two Dog Flu Viruses

Canine influenza A (H3N8) virus is closely related to an influenza virus found in horses for more than 40 years. Experts believe this horse influenza virus changed in a way that allowed it to infect dogs, and the first dog flu infections caused by these viruses were reported in 2004, initially in greyhounds. This virus is now considered a dog-specific lineage of influenza A (H3N8) virus.

In 2007, a canine influenza A H3N2 virus was detected in dogs in South Korea. This virus seems to have been an avian influenza virus that adapted to infect dogs. This canine H3N2 virus has since been reported in China and Thailand, and reportedly can affect cats as well as dogs. It is different from human seasonal H3N2 viruses.

FAQ from CDC:

What are the signs of this infection in dogs?

The signs of this illness in dogs are cough, runny nose and fever, however, a small proportion of dogs can develop severe disease.

How serious is this infection in dogs?

The percentage of dogs infected with this disease that die is very small. Some dogs have asymptomatic infections (no signs), while some have severe infections. Severe illness is characterized by the onset of pneumonia. Although this is a relatively new cause of disease in dogs and nearly all dogs are susceptible to infection, about 80 percent of infected dogs will have a mild form of disease.

How does dog flu spread?

Canine influenza virus can be spread to other dogs by direct contact with aerosolized respiratory secretions from infected dogs, by uninfected dogs coming into contact with contaminated objects, and by moving contaminated objects or materials between infected and uninfected dogs. Therefore, dog owners whose dogs are coughing or showing other signs of respiratory disease should not expose other dogs to the virus. Clothing, equipment, surfaces, and hands should be cleaned and disinfected after exposure to dogs showing signs of respiratory disease.

From the AHDC at Cornell. <https://ahdc.vet.cornell.edu/news/civchicago.cfm>

Influenza virus infection in dogs follows a similar pattern to infections in other species. The onset of clinical signs will be 2-3 days post infection. Peak of virus shed is 3-4 days post infection and the presence of infectious virus declines rapidly with the onset of an immune response. Dogs coughing for > 10days are not infectious as the cough is due to damage to the respiratory tract epithelium. While in the past CIV infections in and of themselves have not shown a significant mortality rate, CIV infections as well as other respiratory viruses compromise the normal defenses of the lung permitting secondary bacterial pneumonias.

VACCINATIONS

Vaccines do exist for CIV. Both of the products offered are killed vaccines and two doses of the vaccines are necessary to develop an effective immune response. While the vaccines may not prevent an infection, they do reduce shed of the virus and the severity of clinical disease