

CIV Outbreak

A little more than a month ago, veterinarians in the Chicago area noticed a sharp increase in the number of dogs coming into their clinics with respiratory illness. The disease was first thought to be Canine Influenza Virus, H3N8, which is a respiratory pathogen of dogs that was first isolated in Florida in 2004. Subsequent testing, however, carried out with the assistance of the New York State Animal Diagnostic Laboratory at Cornell and the Wisconsin Veterinary Diagnostic Laboratory, identified the outbreak as being caused by a virus closely related to Asian strains of influenza A H3N2 viruses, currently in wide circulation in Chinese and South Korean dog populations since at least 2006.

On April 9, scientists at the National Veterinary Services Laboratories in Ames, Iowa, completed genome sequencing on the virus, and confirmed it to be Asian H3N2. All eight genome segments of the virus match closely (99 percent identity) with viruses isolated from dogs and cats from South Korea. This suggests that the virus likely came from this region. It's the first reported incidence of H3N2 in the United States.

In support of the veterinary community and accelerating the time to diagnosis, Merck Animal Health sponsored a diagnostic sampling program with Chicago area veterinary clinics. Nasal and pharyngeal swabs were taken from sick dogs to help identify the causative agent. Since testing began, more than 170 dogs (of those tested) have tested positive for Canine Influenza Virus using a broadly targeted influenza-A matrix PCR test. CIV cases have been confirmed in Illinois, Wisconsin and Indiana. In total, more than 1,100 cases have been reported and six dogs have died. None of the positive cases had been vaccinated prior for Canine Influenza.

“This is the first time this H3N2 strain of Canine Influenza Virus has been found in North America, so there's a lot we don't yet know about it,” said Edward Dubovi, Ph.D., Professor of Virology and Director, Virology Laboratory, Animal Health Diagnostic Center, College of Veterinary Medicine, Cornell University. “Veterinary professionals are advised that diagnostic testing of samples from sick pets can be done using a broadly targeted Influenza A matrix reverse transcriptase-polymerase chain reaction assay (RT-PCR). The canine-specific Influenza A H3N8 RT-PCR in use in several laboratories will not detect this virus. We are developing a H3N2-specific serologic assay and are continuing to work with Merck Animal Health to test serum samples from sick dogs, both of which will provide us with valuable information about this emerging disease.”

Lessons Learned

- Regular and accurate communication of information with is critical
- Merck Animal Health has been actively engaged in this situation and is committed to providing veterinary clinics with the most up-to-date information available (i.e., Merck sponsored a CIV webinar for veterinarians with experts Dr. Dubovi and Dr. Justine Lee that was hosted by VetGirl.com)
- Utilize available resources and information to help implement biosecurity measures and minimize the chance H3N2 could impact your clinic – have sanitation protocols in place
- Use the media to help educate the public – during this outbreak, technical services collaborated with the Chicago veterinary community to support their participation in media interviews
- Provide your clients with recommendation and tips on minimizing risk

Lessons Learned: On the Front Lines of the Outbreak

With the influenza positives we've had, you'll see a fever of 104 or 105, a guttural, hacking cough, a quick loss of appetite, maybe some vomiting. This all happens fast, one to three days after exposure. We didn't have a single positive case during the 2008 outbreak, but that has all changed with the current situation. We're an eight-doctor, urban, high-volume practice, and this time we were seeing 15 to 20 cases a day. But many daycare facilities and kennels already have temporarily closed to help stop the spread. This past week, we have seen fewer cases.

*Dr. Natalie Marks,
Blum Animal Hospital, Chicago*

- While it is unknown if the currently available canine H3N8 flu vaccines will protect against influenza H3N2, the H3N8 virus remains a health threat in some areas – it's important to continue discussing canine influenza vaccination for those dogs that are at risk for exposure (exposure to other dogs at doggy day care, dog parks, boarding facilities, dog shows, sporting events and dogs living in inner cities)
- Other canine respiratory diseases also remain a threat, so it is important to continue protecting against as many other pathogens as possible for Canine Respiratory Disease Complex (CIRDC)
- Actively watch for the clinical signs of respiratory illness in dogs and act quickly if you suspect CIV, as the disease spreads rapidly

CIV H3N2 – The Signs

- Both influenza strains can cause high fever, loss of appetite, coughing, nasal discharge and lethargy.
- Clinical signs may be more severe in cases caused by the H3N2 virus and this strain may be more virulent based on the widespread nature and short timeframe in which the virus spread.
- Some infected dogs may not exhibit any clinical signs at all, which means strong biosecurity measures are critical if you suspect H3N2 in any of your patients.

Learn More

For more information about Canine Influenza Virus, contact your Merck Animal Health representative or visit doginfluenza.com. Your sales representative can also provide you with the most up-to-date information on the current situation.

Information sheets are attached and may be used in a veterinary clinic to help educate and communicate about the disease, as well as how to minimize the risk of exposure and spread.

Lessons Learned: On the Front Lines of the Outbreak

All dogs are at risk – large and small, young and old. Many of the dogs I was seeing presented with a cough, but quickly became significantly more ill showing signs of lethargy, decreased appetite, high fever and other symptoms. It took a couple of days to realize that we weren't dealing with kennel cough. Once we realized it was more severe, many of us worked together with Cornell and Merck Animal Health to try to quickly find answers and solutions. There were a number of Chicago veterinarians who have been working hard to make the public – including local businesses such as dog daycares, boarders, dog walkers, groomers and pet sitters – aware of CIV.

I also enlisted the help of local businesses. We've done a lot of educational pieces and newsletters for clients, local boarding businesses and even apartment buildings to get the word out. We encourage everyone to forward information to their clients and friends. We did media interviews, created Facebook posts and did everything we could think of to spread the word. And if we had a request for a media interview that we couldn't handle, we gladly referred them to other veterinarians. We just want to educate pet owners about the danger of this disease.

***Dr. David Gonsky, Founder and Director of
West Loop Veterinary Care, Chicago***
(one of the first clinics to see a large number of

Tips for Controlling the Spread of CIV in a Veterinary Facility

- Dogs with suspected CIV infection that enter the facility should be isolated immediately and evaluated in a separate room.
- After evaluation, the floors, walls and tables in the room used should be thoroughly disinfected. Particular attention should be given to doorknobs and other objects that were touched by humans who were in contact with the dog.
- CIV is easily killed by disinfectants that are commonly used in veterinary clinics (e.g., quaternary ammonium compounds, bleach solutions at a 1 to 30 dilution, or potassium peroxymonosulfate).
- Hospitalized dogs should be isolated for the protection of other dogs.
- The air supply should be as separate as possible, ideally by a full wall and door; a designated area within a common air space may not be adequate to prevent transmission of the virus.
- At a minimum, gloves and a gown should be worn while handling dogs with CIV infection.
- Staff should wash their hands with soap and water or disinfect them with an alcohol-based hand sanitizer after handling the animal.
- Shoes should be disinfected with an appropriately maintained disinfectant footbath when exiting the isolation room.
- Dogs that are at risk for infectious respiratory disease would be those dogs that visit dog parks, doggy day cares, groomers and boarding facilities.
- Viral disease is best prevented by effective vaccination.
- Merck Animal Health offers a canine influenza vaccine, Nobivac Canine Influenza, which has been proven to provide protection against the H3N8 strain of the virus. While vaccines may provide a certain amount of cross-protection against different strains of the same virus, it is not known if the current vaccine will provide any protection from this new virus.
- For more information about Canine Influenza Virus, please visit doginfluenza.com.

Lessons Learned: On the Front Lines of the Outbreak

I urge veterinary health professionals in the surrounding areas to be prepared. This virus is very contagious and all it takes is one coughing dog in the waiting room. We have an effective process for isolation and sanitation in our facility. We have signs on every door asking pet owners to keep coughing pets in their car and to call us on the phone to let us know they have arrived. This keeps contagious dogs out of the waiting room until we are ready to see them. Instead, we send our veterinary technicians out to the car in full protective gear -- wearing a gown, mask, booties and gloves -- to handle basic triage. This helps minimize the spread of the disease.

The technician will then bring the animal into a specific room that is designated for treatment of this illness. The exam room is cleaned thoroughly and disinfected before and after the visit with a bleach solution. The dog stays in this room during the examination. Afterward, the dog is taken directly back to the owner's car.

The clinic's protocol includes constant cleaning and disinfecting. Our staff cleans everything between visits with a bleach solution -- the walls, floors, tables, stethoscopes, anywhere the client and patient were sitting. The room is then allowed to "air out" for at least 10 minutes before the next case is brought in. This helps assure that it is properly sanitized.

Dr. Anne Cohen, a board-eligible Critical Care Specialist at the Chicago Veterinary Emergency & Specialty Center

What Pet Owners Need to Know

- Canine Influenza Virus (CIV) is not the same as Canine Parainfluenza or Bordetella. Many different pathogens can play a role in canine (kennel) cough. Talk to your veterinarian about the vaccination options that are most appropriate for your dog.
- Canine influenza is highly infectious and the virus spreads very quickly from dog to dog.
- Canine influenza H3N8 has been documented in 40 states and the District of Columbia.
- Canine influenza virus can be spread by direct contact with respiratory discharge from infected dogs, through the air via a cough, bark, or sneeze, and by contact with contaminated objects such as dog bowls and clothing.
- To prevent the spread of disease, wash your hands with soap and water or disinfect them with an alcohol-based hand sanitizer after contact with dogs.
- Dog owners whose dogs are coughing or showing other signs of respiratory disease should not participate in activities or bring their dogs to facilities where other dogs can be exposed to the virus.
- Call your veterinarian immediately if your dog has the following symptoms:
 - Coughing
 - Discharge from the nose or eyes
 - Loss of appetite
 - Lethargy/lack of energy
- More information is available at <http://www.doginfluenza.com/>.

