# Limiting the Spread of Canine Influenza Virus During an Outbreak

**Jarod M. Hanson, DVM, PhD, DACVPM**
*United States Army*
*ProMED-mail*

**In the Literature**

Weese JS, Anderson MEC, Berhane Y, et al. Emergence and containment of canine influenza virus A(H3N2), Ontario, Canada, 2017-2018. *Emerg Infect Dis*. 2019;25(10):1810-1816.

## FROM THE PAGE ...

Multiple outbreaks of canine influenza virus (CIV) caused by avian-origin H3N2 influenza A virus have been reported in the United States since 2015 and in Canada since 2017. This virus was a new introduction to North America, and these outbreaks were due to multiple virus introductions associated with the importation of rescue dogs from Asia.[1]

This study illustrated several important points in the Canadian outbreak, most notably the use of contact tracing and longitudinal sampling. Use of contact tracing effectively identified other at-risk dogs for testing, whereby the actual nidus of infection for several of the outbreaks was identified. Contact tracing confirmed previously identified risk factors for CIV, including exposure to rescue dogs from Asia, use of boarding and grooming facilities, and, in one case, use of a public trail. In addition, longitudinal sampling confirmed the efficacy of a 28-day quarantine period, especially when combined with 2 sequential negative PCR tests, a requirement for releasing animals from quarantine.

Overall mortality observed in the H3N2 CIV cases in this study was 2%, which is similar to previous observations.[2] The 2 fatalities that occurred were in older dogs; this observation reinforces the need to vaccinate and revaccinate older dogs, particularly when other risk factors are present (eg, boarding, grooming). The need for initial vaccination to be administered twice, 14 to 28 days apart, limits the overall utility of vaccination during an outbreak, supporting the need for proactive vaccination.

In addition, although virus survival times tend to be longer in colder temperatures, the spread of CIV in this study appears to have been limited. This was presumed to be due to decreased outdoor activity, potentially limiting

exposure. In contrast, during the summer of 2018, multiple CIV cases occurred at the height of summer travel season on the US east coast, presumably due to increased movement of shedding dogs and/or time spent in boarding facilities, despite the relatively short survival time of the virus during summer months.

CIV remains an ongoing threat to dog populations; however, a combination of diagnostics, contact tracing, and quarantine can be used to limit the extent of an outbreak. Appropriate initial vaccination in conjunction with annual revaccination of at-risk dogs with a licensed H3N2 CIV vaccine remains the best option to prevent severe clinical signs and mortality, especially in older dogs.

## … TO YOUR PATIENTS

Key pearls to put into practice:

1. Appropriate diagnostic testing of suspected CIV cases, in conjunction with contact tracing and testing and 28-day isolation periods, is critical to contain outbreaks of CIV.
2. PCR testing on nasal/oropharyngeal swabs and influenza serology may be necessary to trace CIV cases. A PCR-negative unvaccinated dog with a hemagglutinin inhibition titer >1:16 indicates likely exposure to H3N2.
3. Lack of known exposure to another dog exhibiting clinical signs should not rule out CIV infection, as demonstrated in this study in which one case had no known exposure other than using a public walking path.

## References


1. Voorhees IEH, Dalziel BD, Glaser A, et al. Multiple incursions and recurrent epidemic fade-out of H3N2 canine influenza A virus in the United States. *J Virol*. 2018;92(16):e00323-18.
2. Dunn D, Creevy KE, Krimer PM. Outcomes of and risk factors for presumed canine H3N2 influenza virus infection in a metropolitan outbreak. *J Am Vet Med Assoc*. 2018;252(8):959-965.