

# Canine influenza vaccine found effective against secondary infections

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(PhysOrg.com) -- Recent research by Ron Schultz, professor and chair of the Department of Pathobiological Sciences at the University of Wisconsin-Madison School of Veterinary Medicine, has shown the newly approved Canine Influenza Virus (CIV) vaccine to be effective not only in reducing length, severity and spread of the virus, but also in protecting against secondary infections.

The United States Department of Agriculture's Center for Veterinary Biologics approved the vaccine on June 9, 2009, after a successful trial year. This is the first [influenza vaccine](#) for dogs that protects against H3N8, the [influenza strain](#) first seen in horses before mutating in 2004 to become dog-specific. According to surveillance data, CIV has been identified in 33 states in the last year with outbreaks in nine of those states deemed "enzootic," the animal equivalent of an epidemic.

"It's a relatively new disease," Schultz says. "I estimate that greater than 90 percent of the canine population is immunologically naive." Because most dogs have never been exposed, they have no natural protection against the disease, making the new vaccine a valuable tool.

Another major consideration is that canine influenza, just like the human flu, weakens the dog's immune system. "The virus will often set up the opportunity for a secondary disease," Schultz says, explaining that it is common for dogs to have bacteria already in their system when they are infected with CIV. "Alone, those organisms would rarely cause much of a problem," he adds. "But the combination can be deadly."

Fortunately, Schultz's new work — which depended on research using animal models — shows positive results: The CIV vaccine significantly reduced the severity of the disease even with the combination of CIV and a *Streptococcus equi zooepidemicus* [bacterial infection](#). In future studies, Schultz hopes his lab will be able to show that the same is true of other bacterial infections common to dogs. "We want to demonstrate that the vaccine protects against any co-infections that might occur," he says.

"The real issue now among the dog owning public is, 'Do we need to get our dog vaccinated?'" Schultz says.

He recommends the vaccine for dogs at high risk of infection — those that stay in close quarters with other dogs, like at training classes, shows or doggy daycare.

"It's very much a proximity issue," he adds. Open-air spaces like dog parks, however, carry a much lower risk.

Because the vaccine is made from a killed form of the virus, it requires two doses spaced two weeks apart and is effective one week after the second dose. This means that pet owners need to think ahead and start vaccinating at least three weeks before they think their dog will face exposure. According to Schultz, this is the major hurdle of the vaccine.

"Where they know the animal has the highest risk, the vaccine can't work," says Schultz.

For example, animal shelters taking in new dogs simply can't wait three weeks for the dog to reach immunity. That's why Schultz hopes the new vaccine can build immunity of the dog population as a whole.

"Even if you have 20 to 30 percent of [dogs](#) vaccinated, that would make

a difference," Schultz says. "It's a group thing."

Although this outbreak is milder than originally feared and is responding well to the [vaccine](#), Schultz remains cautious.

"It only takes one of those outbreaks, and then people really start to think," he says. "It's not 'mild' for the dog that dies."

Provided by University of Wisconsin-Madison

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