

Dog Virus Poses Threat to Tigers and Lions

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If you've shared your home with a dog over the past fifty years, chances are you've had your pooch [vaccinated](#) against "distemper." Vaccination rates have been so good in the U.S. that I've only diagnosed a single case in 23 years of clinical practice. [While canine distemper virus \(CDV\)](#) may be extremely rare in our country, the virus is devastating to [wild](#) carnivores, especially tigers and lions, all over the world. Even worse, the [virus](#) is popping up in zoos and wildlife preserves threatening species already nearing extinction. What's going on and how can we protect these precious wild species?

The French veterinarian Henri Carré first documented canine distemper in 1905¹. A vaccine against CDV was developed in 1923 and became commercially available in 1950. Old-timers like myself remember when canine distemper was referred to as "hard pad disease" due to the unmistakable overgrowth of [skin](#) on an infected dog's feet or nose. While the name "Canine distemper" has persisted, we now know that other species may contract the virus. Ferrets, minks, skunks, badgers, otters, raccoons, red pandas, bears, [Asian elephants](#), hyenas, seals, walruses, sea lions and large Felidae can contract and spread CDV². Interestingly, while large cats such as tigers and lions are susceptible to CDV, domestic cats are immune. Because CDV can affect so many animals, many veterinary scientists are recommending we stop calling it "canine" distemper altogether.

So why are we suddenly seeing cases in these other animal species?

The spread of canine distemper virus

Most experts blame the spread of distemper to large carnivores largely on domestic dogs. In perhaps the largest documented outbreak to date, over 1,000 lions died in the Serengeti National Park in 1993-1994, nearly

one-third of the park's entire lion population³. Programs to increase CDV vaccination for dogs in an attempt to protect wild carnivores have been undertaken, with varying success. Unfortunately, the transmission of CDV is complex and there are probably animals other than domestic dogs now harboring and spreading CDV. In zoos, CDV can be inadvertently introduced by a wide variety of animal species that aren't commonly associated with a "canine" [disease](#). A new badger, otter, bear or elephant could silently spread a deadly disease to an unprotected big cat. In China, the highly prized, and protected, giant panda has experienced a CDV outbreak in a rescue center that has killed at least four pandas to date, [according to theguardian.com](#).

What can be done to prevent canine distemper virus from threatening endangered species?

The first-ever "[Vaccines for Conservation](#)" international meeting was recently held at the Wildlife Conservation Society's (WCS) Bronx Zoo in New York City to determine how to protect wildlife from CDV. In addition to the WCS, scientists from [Cornell University's College of Veterinary Medicine](#) and the [University of Glasgow's Institute of Biodiversity](#) were in attendance.

They concluded that five basic steps need to be taken to protect wild carnivores from CDV and other infectious diseases:

1. **Promote safe off-label use of existing vaccines** - determine the safety and efficacy of existing distemper vaccines that could be given to endangered wild carnivores when handled
2. **Innovate rapid field-testing diagnostics** - easy-to-use sample techniques and kits for use whenever at-risk species are handled
3. **Improve disease surveillance in the wild** - Better real-time tracking of both domestic and wild animals for CDV and other infectious diseases
4. **Build networks that share animal health data** - Encourage experts to share disease outbreak information and test results across countries and continents
5. **Investigate new vaccine technologies** - Better vaccines that can be administered orally, by aerosol, or by dart in addition to traditional injection

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If you're interested in this issue, I encourage you to visit the Wildlife Conservation Society's website at wcs.org.

Resources:

1. [Bresalier, Michael, and Michael Worboys. "Saving the Lives of Our Dogs': The Development of Canine Distemper Vaccine in Interwar Britain." NCBI. Cambridge University Press. 5 July 2013. Web. 24 June 2015.](#)
2. ["How Canine Distemper Virus Jumps Across Species." ScienceDaily. ScienceDaily, Web. 24 June 2015.](#)
3. ["Lion." International Society for Endangered Cats \(ISEC\) Canada. Web. 24 June 2015.](#)

If you have any questions or concerns, you should always visit or call your veterinarian -- they are your best resource to ensure the health and well-being of your pets.