LEPTOSPIROSIS: A Preventable, Deadly Disease in Dogs

Puddles. Wet grass. Lakes. What dog owner hasn't wiped off their dog's muddy paws? But what many dog owners may not know is that those same wet conditions could be home to a deadly bacteria. These bacteria cause a disease called leptospirosis, or lepto. While these bacteria could be as close as the backyard, a simple annual vaccine can protect dogs from becoming infected.

In Michigan, leptospirosis in dogs has been on the rise in recent years. A cluster of cases in Detroit-area dogs in 2011 was covered by news outlets across the state, but despite the high-visibility of those cases seven years ago, cases have been increasing since 2015.

The Michigan Department of Agriculture and Rural Development (MDARD) tracks cases of leptospirosis in dogs reported by veterinarians and veterinary diagnostic laboratories. In 2011, a total of 74 cases of canine leptospirosis were reported statewide. By 2017, that number had increased to 149. For 2018, 115 cases were reported to MDARD as of October 31. Although the majority of cases are reported in Macomb, Oakland, and Wayne counties, lepto was reported in more than 20 Michigan counties in 2017.

Leptospirosis is caused by infection with one of the more than 250 types of bacteria called Leptospira. These bacteria can infect any mammal, including humans. Leptospira live in warm, wet environments such as damp grass, standing water, mud, and lakes. Under ideal conditions, the bacteria can survive more than three months outside the body. In the spring, wet weather and flooding can provide an ideal environment for Leptospira bacteria and the risk of infection increases for unvaccinated dogs.

Dogs are most often infected with lepto through mucous-membrane (mouth, nose, or eye) contact with the urine of infected animals and/or contaminated food, bedding, soil, or water. Dogs can also get lepto from close contact with another infected dog, and through the bite of, or by eating, an infected animal. Raccoons, skunks, opossums, rats, cows, and pigs are all known carriers of the infection.

Because of the broad range of carrier species, any dog—even one briefly outdoors in an urban backyard—is vulnerable to the disease.

The most common early signs of Leptospira infection in dogs are: loss of appetite, increase or decrease in urine production; uncharacteristic inactivity; vomiting; diarrhea; and abdominal pain. Even with prompt, exhaustive medical care, 10 to 15 percent of infected dogs may die. Untreated, many infected dogs die of kidney or liver failure.

Vaccination is the best way to prevent leptospirosis in dogs. New four-way vaccines, first released in 2002, provide protection against four types of leptospirosis—the previous vaccine protected against just two types. Today's vaccines are second-generation vaccines associated with fewer adverse reactions. Pet owners should talk with their veterinarians about what type of leptospirosis vaccination is appropriate for their dog.

HISTORICAL PERSPECTIVE

Leptospirosis was more common in dogs in the 1950s and 1960s and widespread vaccination of dogs led to a decrease in the incidence of disease. Veterinarians educated in the 1970s and 1980s typically didn’t hear much about it because it was no longer a worry. The decrease in the number of cases led to a decrease in vaccination rates. But then pockets of canine leptospirosis started appearing around the country. As word spread among veterinarians regarding the new cases of this old disease, more testing of sick animals was done. This testing pointed to the fact that the new cases of canine leptospirosis were caused by three types of leptospirosis not covered by existing vaccines.

The types causing disease were those associated with raccoons, possums, and skunks. Lo and behold, urban sprawl put household pets in closer contact with wild animals whose habitats were being encroached upon. Because the previous two-way vaccine didn’t protect against these types and some small risks associated with the vaccine had been observed, many vets stopped vaccinating for leptospirosis altogether.

FIGHTING LEPTOSPIROSIS TOGETHER

Protecting the health of pets is possible thanks to the new second-generation vaccines. Pet owners and veterinarians can help reduce incidents of the disease by working together to increase the number of vaccinated dogs.

The Michigan State University Veterinary Diagnostic Laboratory (MSU VDL) conducts over 80,000 tests for leptospirosis annually, for veterinarians across the United States. More information for the veterinary community on canine leptospirosis and testing options is available in the Fall 2018 issue of the MSU VDL’s newsletter, Diagnostic News, and in the laboratory’s test catalog. A one-page guide for dog owners is also available. Please visit animalhealth.msu.edu to access these and other resources.

Additional information on leptospirosis in pets is available through the American Veterinary Medical Association at avma.org.

Information on leptospirosis in humans is available through the Centers for Disease Control and Prevention at cdc.gov/leptospirosis.