

Canine Leptospirosis

FAQs for NYC Veterinarians

What is leptospirosis?

Leptospirosis is a zoonotic, multi-organ disease that affects humans and animals. It is caused by spirochete bacteria called leptospires that are shed in the urine of infected animals. Animals that serve as reservoirs for the bacteria include rodents, livestock and small mammals such as raccoons and opossums. The disease is rarely seen in cats.

Has leptospirosis been detected in NYC dogs?

Yes, canine leptospirosis has been detected in all five boroughs, with the majority of cases in Manhattan. Health Department surveillance has identified between 10 and 20 canine cases per year.

The most common serovars in NYC include icterohaemorrhagiae, bratislava and grippityphosa. These are associated primarily with rodents and small mammals.

When do infections usually occur?

Most leptospirosis cases are reported from April to January, with spikes from July to October and following heavy rains and flooding.

How is leptospirosis transmitted?

Leptospirosis is usually transmitted through direct or indirect contact with infected urine. Infected animals shed the bacteria when they urinate, contaminating the surrounding environment. The bacteria enter the body through a mucosal surface, abrasion or cut in the skin following exposure to infected urine, blood, placenta or contaminated water or soil.

What are the signs and when do they occur?

Dogs usually show signs one to two weeks after exposure to the bacteria. Signs vary depending on the affected organs, but may include fever, shivering, lack of appetite, muscle aches, vomiting, dehydration, and, in severe cases, kidney and liver failure. Ocular, respiratory and neurologic signs have also been noted. In acute infections, a bacteremia can lead to rapid shock and death.

How long does the infection last?

With treatment, leptospirosis can last from several days to several weeks. If left untreated, illness may persist for several months.

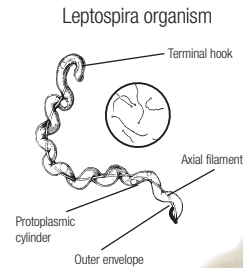
What is the main source of infection in NYC?

Exposure to a contaminated environment, particularly water, is the main source of infection in NYC. While direct contact with an infected reservoir species is rare, dog owners often report seeing rodents, raccoons, opossums or other small mammals near the home and/or where the dog was walked.

How do I diagnose leptospirosis in dogs?

Leptospirosis is diagnosed based on exposure history, clinical presentation, elevated liver and/or kidney values and diagnostic testing. The microscopic agglutination test (MAT) is the most reliable. Other options include the polymerase chain reaction (PCR) technique, culture, dark field microscopy and biopsies. With regard to MAT:

- The serogroup with the highest titer is typically considered the infecting strain, but this is not always reliable.



- Acute titers taken too early may be negative, so a convalescent titer should be taken two to three weeks after the onset of illness.
- PCR is available for both urine and blood.
- Vaccinated animals can have elevated titers, but these are typically ≤ 300 .

How do I treat leptospirosis?

Use penicillin or its derivatives to treat the active infection. To prevent or eliminate the carrier phase, also use tetracyclines like doxycycline. Hospitalization with IV fluid therapy and/or dialysis may be necessary in severe cases. Early treatment usually prevents severe symptoms and increases the chance for recovery.

If a dog has already had leptospirosis, can it get reinfected?

After recovery, an animal will only be immune to the serovar that caused the original infection. Since many serovars exist, dogs can get leptospirosis multiple times.

Can leptospirosis be prevented?

New multivalent vaccines provide yearly protection against four serovars: canicola, icterohaemorrhagiae, pomona and grippityphosa. These vaccines are less immunogenic than the older bivalent vaccines, which sometimes caused side-effects. The multivalent vaccines do not protect against other serovars and are therefore not 100% effective. Vaccinating is not indicated post-infection.

Can providers or pet owners get leptospirosis from their pets?

Dogs stop shedding the bacteria once antibiotics are initiated, decreasing the risk of human infection. Regardless, frequent hand washing after dog handling or urine exposure is recommended along with the guidelines listed below.

What should you tell your clients and/or staff?

- Identify infected dogs with signs so that staff take precautions.
- Avoid direct contact with urine, blood, vomit or tissues from infected animals.
- Have dogs urinate in an area where the urine will dry up quickly, and where other dogs or people will not come in contact with it. Sunlight and drying will kill the bacteria.
- Disinfect areas that may have been contaminated by urine, fecal matter or vomit with an iodine- or bleach-based disinfectant.
- Wear disposable gloves when cleaning the dog's bedding.

For more information:

1. Visit the Centers for Disease Control website at www.cdc.gov/leptospirosis
2. Go to the American College of Veterinary Internal Medicine website at www.onlinelibrary.wiley.com and search for "2010 ACVIM Small Animal Consensus Statement on Leptospirosis"
3. Visit the Rat Information Portal (RIP) at nyc.gov/rats to view NYC rat inspection maps and learn about prevention and management