



NEW YORK CITY DEPARTMENT OF  
HEALTH AND MENTAL HYGIENE  
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*Acting Health Commissioner*

## 2025 Veterinary Advisory #2

### Summary of 2023 Canine Leptospirosis Surveillance in New York City (NYC)

- **32 dogs with leptospirosis were reported in 2023.**
  - Counts had been declining since 2018, with 19\* dogs reported in 2022; the increase in 2023 is attributed to reporting by a diagnostic laboratory that did not report previously.
  - Manhattan had the highest number of dogs (17), followed by Queens (6), Brooklyn (5), Staten Island (2), the Bronx (1), and an unknown borough (1).
  - Most dogs were reported in October 2023.
  - 91% of dogs with a known vaccine history were unvaccinated; the [American Animal Hospital Association guidelines](#) now includes the leptospirosis vaccine as core.
- Rats are the most common source of leptospirosis in dogs and people in NYC.
- Transmission of *Leptospira* from dogs to humans has not been reported in NYC.
- Veterinarians can find more information on the NYC Health Department's [new canine leptospirosis webpage](#).
- [Report animals](#) with leptospirosis to the NYC Health Department.

*Please share with your colleagues in veterinary medicine and your staff.*

March 12, 2025

Dear colleagues,

This advisory summarizes the 2023 surveillance findings for canine leptospirosis in NYC. Veterinarians can find more information on canine leptospirosis, including a map and historical trends, on the new [Canine Leptospirosis webpage](#).

The NYC Health Department conducts canine leptospirosis surveillance to complement human surveillance, and to monitor disease burden, characterize affected dogs, identify risk factors, and detect outbreaks and human-associated infections. Animal disease reports submitted by veterinarians and positive laboratory results from commercial veterinary diagnostic laboratories are investigated. Case definitions (see Appendix) created by the Health Department for surveillance purposes only are used to identify and count cases.

#### Surveillance Results

In 2023, 55 canine leptospirosis reports were received from a commercial diagnostic laboratory (n=51; 92%) or a veterinarian (n=2; 4%), including 2 reported from both (4%). A total of 32 dogs met the case definition (16 confirmed; 16 probable). This increase from the previous year (2022; n=19\*) is

attributed to the onboarding of a second commercial veterinary diagnostic laboratory which began sending reports starting the summer of 2023, and not because of a true increase in cases. Without the reports from the additional laboratory, the number of dogs last year would have been 15. Among the remaining 23 reports, 19 dogs did not meet the case definition, and 4 investigations were unresolved.

Dogs were reported year-round with a peak in October (n=9; 28%). Most were from Manhattan (n=17; 53%) and Queens (n=6, 19%) (see Table A1). The median age was 6 years (range 17 weeks to 14 years), and most were male (n=22; 69%) and neutered/spayed (n=16; 62%). For the dogs with a known vaccine history, 21 (91%) had never received a *Leptospira* vaccine. Two dogs were currently vaccinated; these dogs were positive by urine PCR and exhibited compatible clinical illness. Nine dogs had unknown vaccine history.

At the time of investigation, seven dogs (22%) had died or were euthanized; five of these dogs had never been vaccinated, and two dogs had unknown vaccine history. Most dogs were hospitalized (n=20; 63%) and the average length of hospital stay for survivors was 5 days (range 1 to 14 days).

Commonly reported signs of illness were vomiting (n=23, 72%) and anorexia (n=22; 69%) followed by lethargy (n=20; 63%) Renal and liver failure were commonly reported clinical conditions (see Table A2).

### **Exposures**

Dogs owners are interviewed to ask about potential exposures and risk factors for leptospirosis that occurred in the 4 to 12 days preceding illness onset. Twenty-three owner interviews were completed, which found 21 dogs were exposed in NYC. Among 21 dogs exposed in NYC, 16 (76%) owners reported seeing rats and three (14%) reported other wild animals (primarily raccoons) in areas where the dog spent time (see Table A3). None of the owners reported their dog having direct contact with rats. Nine (43%) dogs were exposed to standing water, such as puddles. The likely exposure location (based on where dogs were likely exposed to animals or standing water) were most often the home neighborhood (yard or within 0.5 miles of home; n=14) or a park (n=3).

Among the 12 dogs tested using the microagglutination test, none had titers to Canicola, the serovar associated with dogs as a reservoir.

### **Human Leptospirosis Surveillance**

The number of people with leptospirosis reported to the Health Department has been increasing, with 24 reported in 2023. Epidemiologic investigations find that most cases were exposed to areas or items likely contaminated with rat urine. Routine MAT testing of human specimens corroborates these findings, indicating Icterohaemorrhagiae as the likely serovar for most human infections.

### **Surveillance conclusions**

While 32 dogs with leptospirosis in 2023 is higher than the 19 reported in 2022, it is likely because of reporting from an additional veterinary diagnostic laboratory. The addition of reporting by a second laboratory is helping expand our understanding of canine leptospirosis trends in NYC and establish a new baseline; however, surveillance continues to be limited by the ability of dog owners to pursue veterinary care. Despite increasing human cases, canine leptospirosis may be declining, possibly reflecting improved

\*The number of cases previously for 2022 was 20, however additional details obtained from an ongoing investigation changed the number of dogs that met the case definition to 19.

vaccination coverage or underreporting. Surveillance continues to show that leptospirosis occurs in all boroughs of NYC and that most infections are associated with rats and likely due to contact with an area or water source recently contaminated by an animal actively shedding the bacteria. *Leptospira* bacteria are fragile and can die within minutes of exposure to dry heat or freezing temperatures. Excessive rain and unseasonably warm temperatures due to climate change is expected to support the persistence of *Leptospira* in the NYC environment which may lead to an increase in cases in the future.

### **Zoonotic risk and prevention and control**

Direct transmission of leptospirosis from dogs to humans has been infrequently documented in literature; no dog to human transmission of leptospirosis has been identified during 18 years of surveillance in NYC. Rats are the most common source of canine and human leptospirosis in NYC. The best way to prevent leptospirosis is to avoid contact with rats and places where rats may have urinated. For more information about rats in NYC, visit the [NYC Health Department Rats](https://www.nyc.gov/health) webpage (or visit [nyc.gov/health](https://www.nyc.gov/health) and search “Rats”).

The [American Animal Hospital Association guidelines](#) now designate leptospirosis vaccine as core. Encourage dog owners to vaccinate their pet against leptospirosis. While leptospirosis vaccines do not protect against all serovars of *Leptospira* bacteria, it can reduce the risk of infection.

Veterinarians and animal handlers are at increased risk of infection. To help prevent transmission if you are treating an animal with suspected leptospirosis:

- Isolate infected animals in areas separate from non-infected animals.
- Limit the number of staff members who have direct contact with the animal, its urine, or its bedding.
- Use personal protective equipment, such as gloves, masks, and face shields, and minimize contact with animal urine, vomit, blood, and contaminated materials.
- Post visible infection control signs for staff.
- Clean contaminated porous and non-porous surfaces with routine disinfectants or sanitizing agents.
- Remind owners to use caution when handling animal urine, vomit, or blood, and to wash their hands after doing so.

As always, we appreciate your continued collaboration with our efforts to monitor public health issues in New York City.

Sincerely,

Asha Abdool, MPH; Renee King, MPH; Kevin Lovingood, MPH; Ryan MacDonald, MPH; Marc Paladini MPH, Christina Ng, MPH; Stephanea Roeser, MPH; Sally Slavinski, DVM, MPH, DACVPM

Zoonotic and Vector-borne Disease  
Bureau of Communicable Disease  
[ZIVDU@health.nyc.gov](mailto:ZIVDU@health.nyc.gov)  
347-396-2600

Visit our webpage for information and resources for veterinarians: [Zoonotic and Vector-borne Diseases: Information for Providers](#)

If you do not receive these alerts via email and would like to be added to the distribution list, email [zivdu@health.nyc.gov](mailto:zivdu@health.nyc.gov)

**Report animal diseases to the NYC Health Department:**

- Online through a [secure web-based reporting platform](#)
- Call 347-396-2600
- Fax the [Animal Disease Case Report form](#) to 347-396-2753

**Report upon suspicion:** Anthrax, brucellosis, glanders, influenza (novel with pandemic potential), mpox, plague, Q fever, rabies, SARS, tularemia

**Report upon laboratory diagnosis:** Arboviral encephalitides, carbapenem-resistant organism (CRO), leptospirosis, psittacosis, Rocky Mountain spotted fever, salmonellosis, tuberculosis

**Report within 24 hours any outbreak or suspected outbreak of any disease, condition, or syndrome, of known or unknown etiology, which may pose a danger to public health.**

## Appendix

Laboratory reports of *Leptospira* titers  $\geq 1:800$  by microscopic agglutination test (MAT), positive polymerase chain reaction (PCR), positive enzyme-linked immunosorbent assay (ELISA), and all reports from veterinarians (regardless of titers) are investigated by interviewing the veterinarian and dog owner. All antibody tests are evaluated in context of recent vaccine history (within a year prior to testing). The Health Department canine leptospirosis case definition includes:

- **Confirmed:** Clinically compatible presentation and positive urine or blood PCR or fourfold change between acute and convalescent titers, taken at least 2 weeks apart.
- **Probable:** Clinically compatible presentation and single elevated agglutination titer or positive antibody test (ELISA).

Table A1. Summary of surveillance findings

<b>2023 Canine Leptospirosis Cases (N=32)</b> (16 Confirmed and 16 Probable)	
<b>Borough</b>	
Bronx	1 (3%)
Brooklyn	5 (16%)
Manhattan	17 (53%)
Queens	6 (19%)
Staten Island	2 (6%)
NYC Unknown Borough	1 (3%)
<b>History of vaccination</b>	
Yes	2 (6%)
No	21 (66%)
Unknown	9 (28%)
<b>Hospitalized at least 1 night</b>	
Yes	20 (63%)
No	11 (34%)
Unknown	1 (3%)
<b>Median length of hospital stay among survivors (n=15):</b>	
Time	3.5 days
<b>Final disposition</b>	
Alive	25 (78%)
Dead	7 (22%)

Table A2. Summary of affected organs and clinical presentations

<b>Organ Conditions</b>	<b>Percent (N=28)</b>	<b>Clinical Presentation</b>	<b>Percent (N=32)</b>
Hepatic disease	79%	Vomiting	72%
Renal disease	75%	Anorexia	69%
Pulmonary disease, petechial rashes, DIC, coagulopathy, or uveitis	0-1%	Lethargy	63%
		Icterus	57%
		Diarrhea	41%
		PU/PD	41%
		Dehydration	36%
		Weakness	13%
		Fever, chills, weight loss, dyspnea, coughing, diarrhea, or bloody stool/vomiting	0-10%

Table A3. Reported exposures in areas dog was walked, by dog owners of locally acquired canine leptospirosis.

<b>Exposures</b>	<b>Home neighborhood</b>	<b>Park</b>	<b>Dog Run</b>	<b>Unknown</b>
Rodent	10	2	1	3
Raccoon/Opossum/Skunk	2	0	0	0
Symptomatic dog	0	0	0	0
Standing water	8	0	0	1