



**To: CAHAN San Diego Participants**

**Date: December 16, 2020**

**From: Epidemiology and Immunization Services Branch, Public Health Services**

**Health Advisory: Leptospirosis outbreak in dogs**

This health advisory informs physician and veterinary health providers about a recent outbreak of leptospirosis in dogs.

**Key Messages**

- Since October 2020, over 30 cases of canine leptospirosis have been reported in San Diego County, primarily originating from the Hillcrest and Mission Hills areas.
- Boarding at kennels that allow dog-to-dog interaction is a major risk factor.
- *Leptospira* spirochetes are shed in urine and transmission to other dogs and people can occur via direct contact with mucous membranes and broken skin. Contaminated soil, water, bedding, and food can act as fomites.
- No human cases from this canine outbreak have been reported; however, vigilance is recommended especially in those presenting with fever, myalgias, negative tests for SARS-CoV-2 and influenza, and history of ill canine contact.
- Clinical signs in dogs and people are varied and can range from mild fever to renal, hepatic, pulmonary, gastrointestinal, and hemorrhagic syndromes.
- Quadrivalent *Leptospira* vaccine is recommended for dogs, especially those boarding in kennels.

**Situation**

Since October 2020, thirty-four confirmed and presumptive cases of leptospirosis have been reported in the local dog population in San Diego County, primarily originating from the Hillcrest and Mission Hills areas. Several cases required hospitalization and at least one dog was euthanized. Although combinations of serology and polymerase chain reaction (PCR) testing of blood and urine were used to diagnose the dogs, the causative *Leptospira* species or serovar(s) involved are not known.

A major risk factor noted in the reported canine leptospirosis cases was boarding at kennels that allow dog-to-dog interactions. Two cases had no apparent links to boarding, one of which frequented dog parks. The kennels that were linked to cases notified the owners of all potential contacts of diagnosed cases and closed for at least two weeks for cleaning and disinfection.

No human cases from exposure to the infected dogs have been reported to date.

## Background

Leptospirosis is a disease caused by various species of spirochete bacteria called *Leptospira*. These bacteria can infect multiple species of mammals, including humans, dogs, rats, mice, raccoons, skunks, opossums, cows, and pigs. The bacteria are shed in the urine of infected animals (especially rodents) and may contaminate food, water, soil, or bedding. Organisms enter through direct contact with skin abrasions, mucous membranes, or drinking contaminated water.

Although leptospirosis in humans is a [reportable disease](#) in California, it is not reportable [in animals](#), and the local incidence in canines is unknown. According to California Department of Public Health veterinary subject matter experts, outbreaks of canine leptospirosis are uncommon in the state and individual cases do not often come to the attention of public health. Only 29 canine leptospirosis cases were [reported](#) over a ten-year period in Los Angeles County, where veterinary laboratories began reporting cases in 2014.

In the United States, human leptospirosis is uncommon (100-150 cases annually) and usually occurs after recreational exposure to contaminated lakes or streams, not from canine contact. The disease more frequently occurs in Mexico and Hawaii and is considered one of the most widespread zoonotic diseases in the world, with over one million cases annually. Since 2010, there have been seven confirmed and probable cases in humans in San Diego County. No cases had onset in 2020 and two cases had onset in 2019, both acquired during foreign travel.

Canine leptospirosis has an incubation period of 5-15 days, or longer when associated with chronic infections. Dogs may have subclinical infection or present with signs that include fever, lethargy, vomiting, anorexia, and icterus. Illness can progress to renal, hepatic, pulmonary, hemorrhagic, and gastrointestinal syndromes, and death or chronic renal disease can result in untreated cases. Due to the zoonotic potential, protective clothing, especially gloves, are recommended when handling suspected cases. Cats are more resistant to infection but may exhibit mild disease.

[Rodent control](#) is an important tool to [prevent leptospirosis in pets](#). In addition, a quadrivalent vaccine available for dogs is protective against the included or heterologous serogroups. The American College of Veterinary Internal Medicine (ACVIM) recommends annual leptospirosis vaccination for all at-risk dogs, especially those that frequently visit dog parks and nature areas or spend time outdoors, including the backyard. Infrequently, vaccine reactions can occur, but are thought to relate to other vaccine components and at a rate no different than with other vaccines. Additional diagnostic, treatment, and vaccination information on canine leptospirosis can be found in the references below.

Although human cases linked to direct contact with an infected dog are rare, care should be exercised by owners of infected dogs. The disease is not transmitted from human to human. The incubation period in people is 2-30 days but is usually 5-14 days. The disease presentation can be subtle with fever (classically biphasic) and myalgias (typically of the calves and lower back). Other symptoms may include headache, conjunctival suffusion, nausea, vomiting, diarrhea, abdominal pain, cough, and a skin rash. More severe cases are associated with transaminase and creatinine elevation. Overlap with multiple potential presentations of COVID-19 (flu-like illness, weakness, vomiting, mental confusion) is notable.

Laboratory diagnosis in humans can include urine PCR (first seven days of illness) or IgM antibody testing (low sensitivity in the first week of disease). A fourfold rise in IgG titer greater than two weeks after initial infection is confirmatory. Treatment for the milder forms of infection in adults include oral

antibiotic regimens with doxycycline, amoxicillin, or azithromycin; more severe illness is treated with parenteral ceftriaxone or penicillin G. Infectious diseases consultation is recommended for complex cases. See the Centers for Disease Control and Prevention (CDC) [Fact Sheet for Clinicians](#) for more information on presentation, diagnosis, management and prevention.

### Recommendations for Veterinary Providers

- Include leptospirosis in differential diagnoses of dogs with fever of unknown origin or acute renal disease that were at kennels or dog parks within the prior 30 days.
- Use appropriate personal protective equipment and procedures while handling suspect and infected dogs; minimize urinary contamination of the environment, immediately decontaminate contact surfaces but do not pressure wash so aerosols are not created.
- Isolate infected dogs (can be at home – educate owners of appropriate preventative measures) for at least one week while being treated with appropriate antibiotics to prevent spread.
- Immunize at-risk dogs annually using a quadrivalent *Leptospira* vaccine, including those that board at kennels and frequent dog parks, streams, and lakes.
- Canine or other animal leptospirosis cases can be reported to the [County Epidemiology Unit](#) by calling 619-692-8499 during normal business hours or by sending an [Animal Disease/Death Report Form](#) by fax to 858-715-6458 or by secure email to [epi-cdreporting.hhsa@sdcounty.ca.gov](mailto:epi-cdreporting.hhsa@sdcounty.ca.gov).

### Recommendations for Medical Providers

- Consider leptospirosis in differential diagnosis of individuals presenting with febrile illness (especially with myalgia, headache, conjunctivitis, skin rash, and/or abdominal symptoms) and an exposure history to an ill dog, especially one that has been kennel boarded. Fresh water swimming exposure is also an epidemiologic clue, especially as part of overseas travel.
- Obtain appropriate laboratory leptospirosis confirmation and exclude infection with novel coronavirus and influenza. See attached CDC [Fact Sheet for Clinicians](#) for details.
- Strongly suspected milder cases could be empirically treated with oral doxycycline, amoxicillin, or azithromycin.
- Human leptospirosis cases should be reported to the County Epidemiology Unit within one week by calling 619-692-8499 during normal business hours or by submitting a [Confidential Morbidity Report](#) by fax to 858-715-6458 or by secure email to [epi-cdreporting.hhsa@sdcounty.ca.gov](mailto:epi-cdreporting.hhsa@sdcounty.ca.gov).

### Resources

- CDC [Leptospirosis](#) website (includes sections on [pets](#) and technical information for [providers](#))
- The Center for Food Security and Public Health [Leptospirosis](#) website
- [2010 ACVIM Small Animal Consensus Statement on Leptospirosis: Diagnosis, Epidemiology, Treatment, and Prevention. 2011; J Vet Intern Med, Jan; 25\(1\):1-13](#)
- [Klaasen H, Adler B. Recent advances in canine leptospirosis: focus on vaccine development. 2015; Vet Med \(Auckl\), 6:245-260](#)
- [Brook W. Leptospirosis in Dogs. Veterinary Partner rev. 10/10/2019](#)
- [Moore GE, Guptill LF, Ward MP, Glickman NW, Faunt KK, Lewis HB, Glickman LT. Adverse events diagnosed within three days of vaccine administration in dogs. 2005; J Am Vet Med Assoc, 227\(7\):1102-1108.](#)

Thank you for your participation.

**CAHAN San Diego**

County of San Diego Health & Human Services Agency

Epidemiology and Immunization Services Branch

Phone: (619) 692-8499; Fax: (858) 715-6458

E-mail: [cahan@sdcounty.ca.gov](mailto:cahan@sdcounty.ca.gov)

Secure Website: <https://member.everbridge.net/892807736722952/login>

Public-Access Website: <http://www.cahansandiego.com>