

Hot Tips: Public Health Advisory #146 Date: 11/19/2024

Please copy and distribute to ALL physicians at your location.

Cluster of Locally Acquired Leptospirosis Infections

Key Messages

- Several confirmed and presumptive cases of locally acquired leptospirosis have been identified among residents of Ventura County with symptom onset dates between September and November 2024.
- A specific source of infection has yet to be identified; however, multiple case-patients have a reported history of agricultural field work during the 30 days prior to their illness.
- Leptospirosis should be suspected in patients who present with febrile illness or aseptic meningitis of unknown origin, particularly if they report having worked in the agricultural industry in the 30 days preceding onset of illness.

Situation

Ventura County Public Health (VCPH) has recently identified a local cluster of leptospirosis infections. Some patients had mild symptoms (headache, fever, and mild transaminitis), and other patients had more severe symptoms, including meningitis with no growth on CSF cultures and negative meningitis/encephalitis panels. Most case-patients identified to date had onset between September and November 2024, and came from different parts of the county. Many patients identified to date have reported a history of agricultural work involving berry hoops; there is no evidence at this time for a risk to the general public. This is not a bacterium that is transmitted from person-to-person.

We encourage providers to report patients who present with illness clinically compatible with leptospirosis and positive test results to Ventura County Public Health within 7 days of identification; however prompt notification of potential and confirmed cases is highly recommended. We recommend obtaining occupational and travel history upon initial consultation to help facilitate assessment of the patient's risk for leptospirosis infection. VCPH staff can be reached at (805) 981-5201 for consultation.

Background

Leptospirosis is an illness caused by *Leptospira* species, spirochete bacteria that can infect both humans and animals. There are numerous species and serovars of the bacteria with varying degrees of pathogenicity. These bacteria are spread through the urine and other body fluids of infected animal reservoirs. Rodents are the primary reservoir, but other mammals can also be infected, including livestock, dogs, and cats. Humans typically become infected through contact with soil or water that has been contaminated with the bacteria. The bacteria can enter the body through cuts, abrasions, or mucous membranes.

Tropical and subtropical regions have the highest incidence of leptospirosis infections, although sporadic cases are reported in temperate regions. In the United States, an average of 100 to 150 total leptospirosis infections are reported each year; most are linked to travel to endemic areas or natural disasters such as hurricanes or flooding. However, other known risk factors for leptospirosis infection include occupational exposures through agricultural, sewer, or veterinary work, recreational activities involving contact with freshwater sources such as rivers or ponds, household exposures through infected pets or rodent infestations, and living in areas with poor sanitation.

The incubation period for leptospirosis on average is between 5 to 14 days but can range from 2 to 30 days. Leptospirosis can be asymptomatic, but it can also present with mild symptoms (fever, headache, myalgias, gastrointestinal symptoms, or cough), or lead to more severe disease (meningitis, and involvement of the liver, kidney, and spleen). Other symptoms can include conjunctival suffusion, lymphadenopathy, muscle rigidity, or rash. Significant laboratory findings can include transaminitis, thrombocytopenia or pancytopenia, elevated erythrocyte sedimentation rate, and elevated creatine kinase.

Some patients may also develop a severe form of illness deemed icteric leptospirosis or Weil's disease, which is characterized by hepatic findings such as icterus and jaundice, renal failure, severe pulmonary disease, hemorrhaging, myocarditis, or other cardiovascular abnormalities.

Diagnosics & Treatment

There are various testing options available for leptospirosis through commercial laboratories. Testing recommendations are largely dependent on the time elapsed between illness onset and specimen collection. However, collection of multiple samples is recommended due to the transient nature of leptospires in different body fluids, as well as the time needed for antibody development.

For PCR testing, collection of whole blood samples within the first week of illness is recommended since leptospires are usually present in the blood for the first 4-6 days of illness. Urine samples can also be collected and sent for PCR testing after approximately 1 week since illness onset, as leptospires can be shed intermittently in the urine around this time. In addition, cerebrospinal fluid (CSF) should be collected for PCR testing for any patients presenting with signs of meningitis.

For serologic testing, both acute and convalescent serum samples should be collected roughly 7-14 days apart since antibodies for leptospirosis may develop 3-10 days after symptom onset.

A summary of the above recommendations from CDC is listed below:

PCR testing

- Whole blood (collected in EDTA) collected during the first week of illness.
- Urine is intermittently positive for the first week of illness and then is more consistently positive after the first week.
- PCR on CSF can be helpful in individuals with meningitis, but sensitivity is highly variable and if done, should be done in conjunction with other testing.

Serologic testing

- Collection of both acute and convalescent serum roughly 7-14 days apart is recommended.
- For timely diagnosis, the acute serum can be sent and then a follow up serology 7-14 days later.

Testing - Public Health Laboratory

Some testing for Leptospirosis may be available through public health (e.g., CDC). However, turnaround time for test results generally take longer than testing at commercial labs and requires pre-approval through the public health labs. Therefore, for timely diagnosis and treatment, testing at commercial labs should be prioritized. However, **please retain any residual specimens (blood/serum, urine or CSF)** and contact (805) 981-5131 to coordinate submitting specimens to the Ventura County Public Health Laboratory at 2240 E. Gonzales Road, Suite 160, Oxnard CA 93036. No charges will be associated with testing done through Public Health.

Prompt identification of illness and early treatment is necessary to prevent complications. Treatment may involve supportive care and antibiotic therapy. Treatment should not be delayed while waiting for laboratory test results if high clinical suspicion for leptospirosis is present.

Recommendations

For healthcare providers

- Consider the diagnosis in leptospirosis in patients who:
 - Work in agriculture, particularly as berry harvesters;
 - Have clinically compatible symptoms especially the sudden onset of fever, headache, myalgias, abdominal pain, gastrointestinal symptoms, nonproductive cough, and/or meningitis.
 - Laboratory values consistent with leptospirosis, including transaminitis and thrombocytopenia.
- If leptospirosis is suspected, obtain testing as detailed in the diagnosis and treatment section.
- If leptospirosis is strongly suspected due to clinical presentation, if laboratory testing confirms leptospirosis, or for consultation, contact VCPH at (805) 981-5201.

For at-risk occupations

- Wash any skin abrasions or cuts with soap and water and cover them with waterproof bandages to prevent contact with contaminated soil or water.
- Wash hands thoroughly with soap and water following outdoor activities, after handling animals, before and after using the restroom, and prior to eating or drinking.
- Wear waterproof protective clothing and equipment while working outdoors, which could include gloves, long sleeve shirts and pants, boots, or shoes, while continuing to follow recommended industry best practices for food and worker safety.

For pet owners

- Consult with your veterinarian on vaccinating your pets against leptospirosis.
- Keep pets away from ponds, lakes, and or other natural bodies of water.
- Seek veterinary care promptly upon identification of any signs or symptoms of illness in pets following outdoor activities.
- If your pet is diagnosed with leptospirosis, isolate it from other animals in the household until treatment is completed. Wear gloves while cleaning and disinfecting any areas that become contaminated with urine, and thoroughly wash hands afterward.

For the general public

At this time, most illness has occurred among agricultural workers and there is no evidence of spread to the larger community. However, general recommendations include:

- Wash your hands frequently and thoroughly.
- Eliminate any potential sources of waste around your property to control rodent populations and prevent infestations.

Resources

[About Leptospirosis | Leptospirosis | CDC](#)

[Clinical Overview of Leptospirosis | Leptospirosis | CDC](#)

[Leptospirosis | Fact Sheet for Clinicians | CDC](#)

[Agricultural Operations - Hazards & Controls | OSHA.gov | Occupational Safety and Health Administration](#)