

Leptospirosis

DISEASE IN ANIMALS

Leptospirosis is caused by *L. interrogans* which has over 200 serovars. Infection is common and the disease is nonpathogenic in rodents and some wild mammals. Reservoir hosts among domestic animals include cattle, pigs, sheep and dogs. Each serovar has its preferred animal host(s), but each animal species may be host to one or more serovars. Disease in reservoir hosts is more likely to be asymptomatic, mild or chronic. Clinical signs are often related to kidney disease, liver disease or reproductive dysfunction.

Reporting: Leptospirosis is not a required reportable disease in animals. Voluntary reporting of animal cases to the Ohio Department of Agriculture (ODA), Division of Animal Industry at (614) 728-6220 or (800) 300-9755 or the USDA APHIS Veterinary Services at (614) 856-4735 or (800) 536-7593 is encouraged. Voluntary reporting to the [local health department](#) (LHD) of lab-confirmed animal cases associated with transmission to humans is also encouraged.

Transmission: Leptospirosis can be transmitted indirectly in the environment or directly between hosts. Bacteria are excreted in the urine for extended periods of time. The organism can also be found in aborted and healthy fetuses and associated vaginal discharges. The organisms usually enter the body through contact with mucous membranes or abraded skin, but they can be aerosolized or ingested.

Clinical signs:

SPECIES	SEROVAR	PRIMARY CLINICAL SIGNS
Cattle	<i>L. pomona</i> , <i>hardjo</i> , and <i>grippotyphosa</i>	Fever, icterus, anemia and hemoglobinuria in calves, abortion in third trimester or abnormal looking milk in adult cattle
Sheep and goats	<i>L. pomona</i> and <i>hardjo</i>	Similar to cattle
Swine	<i>L. pomona</i> , <i>tarrasova</i> and <i>bratislava</i>	Fever, abortion, weak piglets, occasionally meningitis
Horses	<i>L. pomona</i>	Abortion and uveitis
Dogs	<i>L. pomona</i> , <i>bataviae</i> , <i>grippotyphosa</i> , <i>canicola</i> , and <i>icterohaemorrhagiae</i>	Nonspecific - fever, depression, anorexia, generalized pain. Progression of the disease in dogs may present as vasculitis, coagulopathy, uremia and oral ulceration

Diagnostics:

Serology: MAT test. Serial blood draws for acute and convalescent levels are recommended.

Fluorescent antibody: kidney, lung, placenta, thoracic fluid, urine (preferably mid-stream)

PCR: kidney, lung, placenta

Case classification:

- Suspected: a clinical case with signs consistent with leptospirosis
- Probable: a clinically suspect case with laboratory evidence from a screening or unvalidated test
- Confirmed: a case that meets confirmatory testing criteria determined by a state or federal diagnostic laboratory

DISEASE IN HUMANS

Reporting: Report by the end of the business week any suspected human illness or positive laboratory result to the LHD where the patient resides. If unknown report to the LHD of the health provider or laboratory.

Human illness: Clinical picture can vary, with many individuals having unapparent or subclinical infections. In general, two clinical types are distinguished: anicteric and icteric.

1. Anicteric: Initial symptoms last four to seven days and may mimic flu, including fever, myalgia, conjunctivitis, neck stiffness, nausea and sometimes vomiting. In the second or immune stage of anicteric leptospirosis, fever is usually not present or is low-grade. Headaches, meningitis, myalgia, nausea, vomiting and abdominal pain are also common in this stage. Patients usually recover in about a month, although leptospiruria may continue for several months.
2. Icteric: Only five to 10 percent of cases have this severe form of leptospirosis (Weil's Disease), in which the infection progresses to hepatitis, nephritis, meningitis, respiratory distress and hemorrhagic tendencies, with associated jaundice and azotemia. Convalescence may take several months.

Personal protection: PPE to prevent contact with skin, and mucous membranes (depending on type of exposure) should be worn by those who may be working with suspect infected animals or contaminated environments. In disaster response situations, additional precautions should be taken when entering floodwaters. Human vaccine is available but not widely used in the U.S. because protection is serovar-specific and the annual vaccination often results in painful swelling.

FOR MORE INFORMATION

Disease in Animals

[ODA Division of Animal Industry](#)

[Iowa State University Center for Food Security and Public Health Animal Disease Factsheets](#)

[CDC Leptospirosis and Your Pet](#)

[OIE Manual of Diagnostic Tests](#)

Disease in Humans

[ODH Infectious Disease Control Manual](#)