

LEPTOSPIROSIS

Disease Overview

Leptospirosis is a bacterial infection found worldwide. There are over 200 serovars in over 20 serogroups of the genus *Leptospira*. The disease is most prevalent in tropical and subtropical regions.

Symptoms

The clinical course is highly variable. In most cases, clinical infection is asymptomatic or mild. Onset of symptoms is typically abrupt with severe headache, muscle aches, and fever (mild, influenza like illness). Symptoms usually resolve after a few days.

After the first phase of illness, a person may recover but become ill again, Symptoms are usually more severe and may include

- Jaundice, renal failure and hemorrhage (Weil's syndrome)
- Meningitis or meningoenzephalitis
- Pulmonary hemorrhage with respiratory failure

Reservoir

Pathogenic bacteria (leptospire) are naturally carried in the kidney or renal tubules and genitourinary tract of wild and domestic animals. Serovars are adapted to one or more reservoir animal species. The bacteria are shed in infected urine, amniotic fluid, or placental tissue and contaminate soil and water. They can remain viable for weeks or months under favorable conditions.

Mode of Transmission

Contact of the skin or mucous membranes with

- Moist soil or vegetation contaminated with urine of infected animals
- Contaminated waters (e.g. swimming)
- Urine, fluids, or tissues of infected animals.

Occasionally transmission is through consumption of water or food contaminated with urine of infected animals (often rats) or through inhalation of droplet aerosols of contaminated fluids.

Incubation Period

Usually 5-14 days, with a range of 2-30 days.

Period of Communicability

Direct person to person is rare. Bacteria can be secreted in the urine for a period of time, usually a month.

Risk Factors

Increased risk for persons acquiring and/or severe illness:

- Occupational hazard (farmers and sewage workers)
- Recreational hazard of water sports
- Travel to areas where infection is endemic in animal reservoirs (tropical areas)

Surveillance Case Definition

Confirmed case is clinical illness and:

- isolation *Leptospira sp* from clinical specimen OR fourfold or greater rise in antibody titre OR demonstration of *Leptospira sp* in a clinical specimen (no national definition).

Diagnosis and Laboratory Guidelines

In the first phase of illness, bacteria can be seen by dark field microscopy or cultured from blood, urine, or cerebrospinal fluid. Blood tests include ELISA or paired microscopic agglutination test (MAT). Diagnosis is confirmed by seroconversion or a 4-fold or greater rise in titre from samples collected greater than 2 weeks apart. All testing is done at National Microbiology Laboratory in Winnipeg

Reporting

Per Policy 2.2 Disease and Event notification to OCMOH and Disease and Event Reporting section

- Routine Surveillance (RDSS) for all confirmed cases

Case Management

Education

Case or relevant caregiver should be informed about:

- Nature of infection, length of communicable period, mode of transmission and disease ecology
- Hand washing
- Safe water source
- Safe animal handling
- Control of rodents and reservoir wildlife populations in human habitations

Investigation

Serological classification of bacteria is useful as serogroups and serovars are often associated with specific animal reservoirs.

Exclusion/Social Distancing

Treatment

Antibiotics.

Immunization

Not applicable

Contact Management

Education

Per case management

Investigation

Per case management

Exclusion/Social Distancing

Not applicable

Prophylaxis

Not applicable

Outbreak Management

Activate the local outbreak plan when an outbreak is declared.

Outbreaks may be associated with flooding and disasters that have increased the rodent population. Outbreaks are also associated with occupational exposure (for example to cattle) and recreational activities. Investigate clusters to determine areas of risk such as water sports locations.