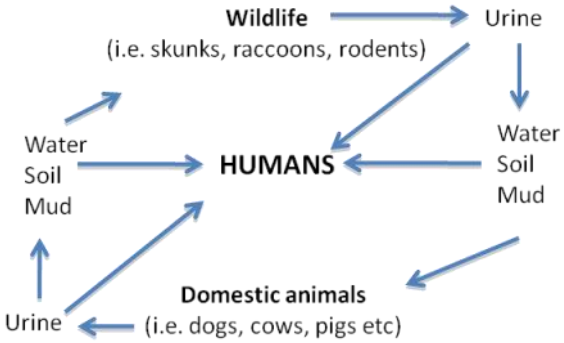
LEPTOSPIROSIS

What is Leptospirosis?

- Leptospirosis is a zoonotic disease caused by the bacteria *Leptospira interrogans*. The bacteria live in the kidney of the infected host.
- Most mammals can be infected with Leptospirosis, however animals like skunks and raccoons are natural reservoirs that do not show clinical signs. These animals excrete the bacteria in their urine and contaminate the surrounding environment such as soil, mud, ground waters, streams and rivers where the bacteria can survive for months to years.

The bacteria are able to survive for long periods of time in water, making exposure to contaminated water sources the major mode of transmission for humans and pets

- Humans tend to excrete the bacteria for 60 days or less, however shedding for months to years has been reported in some cases.



Possible transmission routes for *Leptospira interrogans*.

Where is Lepto found?

- Leptospirosis occurs worldwide, but is only common in humans and animals living in tropical and subtropical areas since the bacterium thrives in warm, moist climates.
- The disease is sporadically reported in countries with temperate climates, such as Canada, but is often a result of international travel to exotic destinations.
- Human infection in Canada and in particular, Ontario, is rare. Outbreaks have been associated with trapping and handling raccoons without proper hand protection and from exposure to infected dogs.

Prevention

- Humans and domestic animals should avoid contact with potentially contaminated bodies of water.
- Draining stale or consistently wet areas may also decrease the incidence of disease (this tip applies to general disease/pest control).
- Currently in North America there is no human vaccine against Leptospirosis. However, control of canine leptospirosis via annual vaccination is an important means to reduce disease in the pet population thereby reducing the zoonotic risk of transmission.
- Domestic animals should not be allowed to urinate in water that humans contact.
- Personal hygiene and protective clothing (gloves, masks) are important preventative measures in high-risk occupations such as farmers, or animal trappers.

- Travelers going to tropical regions should avoid contact with animal urine, infected animals or an environment that could be contaminated with infected animal urine. Specifically, travelers should avoid ingestion of water if engaging in water activities and avoid swimming or wading in potentially contaminated waters if possible.

The bacteria survives best in freshwater. Leptospirosis cannot survive in water with salinity greater than 1%

LEPTOSPIROSIS

Lepto in Humans

How common is Leptospirosis in humans?

- Human infection in Canada occurs only rarely.
- Other than a few cases involving dogs and raccoons, transmission of leptospirosis to humans from domestic and wild animals in Ontario remains rarely recognized.

How do people get leptospirosis?

- In Canada, the main source of human infection is likely water contaminated by animals such as rodents, raccoons and skunks, which act as maintenance hosts for the bacteria.
- Humans can also become infected through bacterial contact with open cuts or abraded skin, mucous membranes, or the conjunctivae.
- Human to human transmission can occur, but is rare.

What are the symptoms in humans?

- There is a wide range of symptoms that infected people may experience. Most infections start with non-specific presenting symptoms which can include fever, chills, headache, malaise, vomiting, severe muscle pain and swelling of the eye.
- The majority of affected humans (90%) are asymptomatic (no symptoms) but others may experience an influenza-like illness or more seriously, severe kidney and liver failure and bleeding, potentially leading to death.
- Once infected, symptoms may begin anywhere from 2-30 days after exposure, with the average usually ranging from 5-14 days.
- A severe headache and stiff neck are features of meningitis and occur in approximately half of all patients, usually lasting a few days but can last up to two weeks.
- In more severe cases, occurring in 5-10% of patients, the disease may worsen rapidly to cause multi-organ failure and death if left untreated.

Can it be treated?

- Antibiotics given within the first 7-10 days of infection are effective in treating the bacteria, but will not reverse damage that has already been done to affected organs and tissues.
- Contact your physician if you are concerned you have been exposed or infected.

RISK

Who is most at risk of becoming infected?

- Trappers, hunters, people living in rural areas, farmers, wildlife biologists and rehabilitators, as well as zookeepers are all at increased risk of infection because of the higher probability of contact with infected animals.
- Outdoor recreational activities, such as swimming, kayaking, canoeing, and fishing may also put people at higher risk for Leptospirosis infection due to the possibility of contact with contaminated water and soil.
- Non-vaccinated pet dogs or stray dogs that play in water where infected wildlife urinate are at risk. These pets or strays can potentially carry the infection into your home or neighbourhood.

- **Cover cuts and scrapes if wading or swimming and do not drink local water without boiling if you are camping near potentially contaminated water.**
- **Practice personal hygiene and frequent hand-washing.**
- **Avoid attracting rodents or other animals to your campgrounds.**

Dogs are also susceptible to infection and can potentially transmit leptospirosis to humans.

CPHAZ
Centre for Public Health and Zoonoses

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