

June 2019

Leptospirosis: Information for medical providers



This fact sheet provides information for medical providers (general medical practitioners) about what to look for and how to treat patients who may have leptospirosis.

Key points

Leptospirosis is easy to catch from an infected animal and its environment.

Infection can occur through breaks in the skin or through mucous membranes of the eyes, nose or mouth.

Protect yourself, your family and staff by vaccinating your animals, controlling rodents, practicing good personal hygiene, using protective equipment, and seeking help early if you feel unwell.

What is leptospirosis?

Leptospirosis is an infectious disease transmitted from animals to humans (a zoonosis), and from animal to animal, through cuts or cracks in the skin or through the mucous membranes of the eyes, nose or mouth. It is present in almost all warm-blooded mammals, including farm, domestic and feral animals.

Leptospirosis spreads easily, and is caused by bacteria known as leptospires that multiply in the kidneys of animals and are shed in the urine. The bacteria thrive in moist or wet conditions and can survive for months.

How are people infected?

People can catch leptospirosis from infected animal urine. Even a splash or fine spray of urine or indirect contact with urine-contaminated water can spread large numbers of leptospires.

Cuts, sores and skin grazes increase the risk of infection, as does licking your lips and eating or smoking before washing and drying hands.

Who is at risk of infection?

Leptospirosis remains the most common occupational infectious disease in New Zealand. Occupations at risk of infection are those involving animals or animal products, such as:

- farm workers
- vets
- meat workers.

Or those involving frequently contaminated environments, like:

- sewer workers
- coal miners
- plumbers
- fishing industry workers.

Those at highest risk are:

- farmers (particularly sheep, beef, deer and dairy farmers) and their families
- any other people living on the farm
- farm workers, including relief milkers and casual labourers
- people working in the farm garden
- service workers on the farm (eg stock truck drivers, artificial insemination (AI) technicians, and anyone else handling animals)
- others working on and around the farm (eg drain layers)
- meat inspectors, meat processing workers, and service workers to the meat sector
- forestry workers
- vets, both on-farm and in a meat plant.

What should I look for?

Medical providers should look out for leptospirosis, especially in patients who present with flu-like symptoms and work with farm animals or in the meat processing industry.

Patients are likely to present with flu-like symptoms, which may include:

- headache
- high temperature/chills
- sore throat and/or cough
- muscle pain
- nausea and/or vomiting
- diarrhoea
- abdominal pain
- cough
- sensitivity to light/vision problems.

How should treatment proceed?

Medical providers should:

- test for antibodies and Leptospiral DNA (see information on diagnostic tests)
- prescribe antibiotics
- monitor patients for signs of complication (eg renal failure)
- notify suspected cases to the medical officer of health of the local public health service – don't wait until infection is confirmed
- advise patients of the risks and prevention strategies, including:
 - applying animal vaccination programmes



- being cautious with all animal urine exposure, including dogs, rodents and wildlife
- avoiding urine splashes or contact with potentially contaminated water
- covering open cuts and scratches with waterproof coverings
- washing hands frequently
- using personal protective equipment (PPE)
- avoiding work in high risk areas if they have open wounds or eczema, or are pregnant or trying to become pregnant.

Antibiotics

Early antibiotic treatment may get rid of leptospires quickly, decreasing the level of antibody response. This will make it harder to detect infection through testing; however, antibiotics should still be given (within the first seven days of symptom onset) if infection is suspected!

Intravenous antibiotics may be needed for people with more severe symptoms.

Diagnostic tests

For a definite diagnosis culture, molecular biology (eg PCR) or serological (eg MAT) testing is needed. Consistent clinical symptoms and a titre (antibody concentration) of 800 or more indicates infection. A rise or fall in titre levels is usually proof of infection, but infection can still be present without a rise or fall.

¹ Day, N. (2014). *Treatment and prevention of leptospirosis*. Topic 5524 version 7.0; cited in *Leptospirosis in New Zealand: an overview of clinical best practice*. ACC Review 54. Retrieved December 2014 from: www.acc.co.nz

Samples taken early in the illness may not identify infection. Two samples are needed at least three weeks apart to get a definite result. The first test must be carried out on the day of the initial consultation, before treatment.

The Immunoglobulin M (IgM) test will identify infection within the first weeks of illness.

The **IgM ELISA** test:

- will likely test positive in the early stages of infection, as it measures a different immunoglobulin (antibody)
- should be used for a quick and early diagnosis of infection and disease, about seven days after symptoms begin (the acute stage); however, it should be followed by another test to confirm
- is easy to do, safe, inexpensive, and reduces risk for laboratory staff.

The **microscopic agglutination test (MAT)**:

- will diagnose leptospirosis and give a rough idea of the serovars present at population
- level (a collection of living serovars)
- isn't exact (ie won't identify the infecting serovar in an individual case)
- can indicate active or recent infection, or past exposure, depending on the level of antibodies in the blood
- will usually give a negative result in the first seven days of illness (the acute stage)
- can be hazardous to laboratory staff.

How do I report a case of leptospirosis?

Leptospirosis is listed as a notifiable infectious disease under the Health Act 1956. Medical practitioners have a duty under the Health Act to notify any suspected cases to the medical officer of health of the local public health service. Notification must not wait until infection is confirmed.

These patients are eligible for ACC cover – a form must be completed by the person's medical practitioner, employer and claimant.²

What prevention information can I provide?

The following basic prevention information for at-risk people focuses on minimising exposure:

- apply a vaccination programme for animals.

PPE

- Use personal protective equipment (PPE) (eg eye or face protection, aprons, sturdy and waterproof footwear, hats, overalls, gloves – the rate of leptospirosis in the meat industry has fallen since double-gloving was introduced).
- Change gloves or boots immediately if they split or leak.

Maintain personal hygiene

- Wash hands regularly, using water, soap, and disinfectant, and drying with disposal towels.
- Don't scrub hands harshly as it may cause breaks in the skin.
- Don't touch eyes, nose or mouth before washing your hands.
- Cover cuts, grazes, blisters and skin breaks with waterproof coverings, and change coverings regularly.
- Make sure deeper cuts are fully healed before working closely with animals.
- Wash clothes after handling animals.
- Don't smoke, drink or eat when handling animals, as this can introduce bacteria into the mouth. Keep coffee mugs away from the work area.

First aid

A readily available supply of clean water is important.

Look after personal health. As soon as there is exposure to urine or infection is suspected:

- dry off urine splash immediately (leptospirae dry out easily), then wash the area
- flush out mouth and eyes, and any exposed skin with lots of running water
- wash hands and face well, using soap and water, and dry well – take particular care
- with facial hair
- wash out fresh or old cuts and grazes with water and disinfectant, and dry well
- tell a supervisor.

Finding out more

Good practice guide:

[Prevention and Control of Leptospirosis](#)

² ACC. (2014). *Leptospirosis in New Zealand: an overview of clinical best practice*. ACC Review 54. Retrieved December 2014 from: www.acc.co.nz