

## Rats, Leptospirosis and Public Health

Leptospirosis is a cork screw shaped gram negative bacteria that is spread by urine of infected animals such as: rodents, raccoons, opossums, skunks, livestock and dogs. The bacteria like a wet and warm environment- puddles, dewy grass, etc. Transmission is through the mucous membranes or skin with any wound, such as a cut or scrape which comes into contact with infected urine, urine-contaminated soil, water, food or bedding; through a bite from an infected animal; by eating infected tissues or carcasses; drinking contaminated water and rarely, through breeding. It can also be passed through the placenta from the mother dog to the puppies. There are numerous strains of leptospirosis.

Symptoms of Leptospirosis in dogs are: lethargy, diarrhea, vomiting, loss of appetite, yellow skin, shivering, weakness, sore muscles, stiffness, sudden fever, increased thirst and urination, difficulty breathing.

Protecting dogs:

1. Follow your veterinarians' vaccine recommendations.
2. Do not allow your dog to drink from stagnate water.
3. Keep your dog away from wildlife, rodents and wildlife and rodent carcasses.
4. Inspect paw pads for cuts/scrapes that the bacteria can enter through.
5. Wipe your dog's feet when they become wet or in contact with dewy grass.
6. Discourage your dog from licking/chewing their paws.
7. Eliminate rats, raccoons, opossums, etc. from your dog's immediate environment.
8. Remove all food, water bowls and toys from outside at night or times when your dog is not in the yard.
9. Use good sanitation in and outside of your house. Leptospirosis is susceptible to common household disinfectants such as bleach in 1 part bleach to 10 parts water mixture, chlorhexidine, 70% isopropyl alcohol, Lysol. Consider sanitizing the bottom of shoes before entering your house- use one of the above methods.
10. ANY SIGNS OF ILLNESS- SEE YOUR VETERINARIAN OR CONTACT AN EMERGENCY VETERINARY CLINIC RIGHT AWAY.
11. Should your dog become ill – ask for confirmation blood tests from your veterinarian. The State of Michigan tracks this illness by laboratory confirmation. Tracking this illness is very important to research for better prevention and treatments.

Leptospirosis and humans- Leptospirosis is a zoonotic disease which mean animals can transfer it to people. It is a serious disease for humans especially humans with immune compromised systems. The CDC has extensive information on humans and leptospirosis at [www.cdc.gov/leptospirosis/](http://www.cdc.gov/leptospirosis/)

Rats: Rats not only carry leptospirosis but: lice, mange, fleas, salmonella, bubonic plague, tapeworms, rat bite fever, hantavirus pulmonary syndrome, eosinophilic meningitis and typhus. The recent turn of the economy has left communities with a larger number of vacant homes which make nice harborage for rodents and other wildlife. Also, with the down turn of the economy less home improvements/maintenance are conducted and less households use professional pest control methods.

Some steps that can be taken by the City and residents to eliminate rats are:

1. Do not feed wild birds.
2. Use rodent proof garbage cans only.
3. Eliminate harborage and sources of food.
4. Do not plant or eliminate fruit bearing trees and veggie gardens. Plant rodent discouraging plants such as mint, garlic, daffodils, marigolds, lavender, oregano, sage, black pepper and cayenne
5. Eliminate puddles of water as soon as possible.
7. Eliminate backyard ponds and bird baths
8. Keep your lawns short as possible
9. Trim your bushes, especially evergreens, 12-18 inches from the ground- the shallow root system allows rodents to burrow and the low branches provide cover.
10. Pick up dog feces at least once a day and do it with a plastic bag so you can tie it up and put it in the trash. This minimizes the smell which is also an attractant for rodents.
11. Any out buildings - including sheds must be rodent proof, rat wall etc.
12. Encourage and build hawk/eagle nesting areas throughout the City- natural pest control.
13. The City should pre- bait before any road/digging projects. Alert residents of exact date these projects are occurring so they can take extra precautions when the rodent nests are disturbed.
14. Eliminate composing piles.

15. Do not leave dog water bowls out over night
16. Pick up dog toys and/or kids toys from yard overnight.
17. Secure any raised decks or patios that connect with lawns or dirt by sinking steel small gauge mesh from the side of the deck down about 12 inches into the ground. Rodents like to borrow under decks and patios to build nests.
18. If there is a hole the size of a quarter a rat can get through it. Eliminate holes/spaces that rodent can get through to shelter or food.
19. Do not leave abandoned cars in yards.
20. Remove wood piles, trash piles or any pile that would provide shelter.
21. Work with your neighbors- if you are having a rodent problem and begin pest control alert your neighbors to do the same at the same time. If you eliminate rodents they will just move on to the next property if that property is attractive for them to live.
22. Rodent bait/poison is highly dangerous and fairly ineffective if rodents have other sources of food. Consider other rodent control methods.
23. Consult a professional pest control company.
24. Use "report a concern" or call the City when you see a problem in your neighborhood or at a business. Insist on a follow up report and time frame for correction of violations. Get the name, phone number and/or email of the responding Inspector. Follow up with the Inspector or City Council until the problem is solved.

These measures may sound extreme but if the City and residents work together for a few years this large rat population can be controlled. It is all about making the environment unattractive for rodents to live, eat, drink and breed. This is a serious public health issue for both humans and pets.