

Lymphocytic Choriomeningitis Virus

DISEASE IN ANIMALS

Lymphocytic Choriomeningitis Virus (LCMV) is found worldwide in rodent populations. House mice are the primary reservoir for this virus, however hamsters can also be persistently infected carrying the virus for life. Several other species including guinea pigs, chinchillas, rats, rabbits, dogs, pigs and primates have been infected.

Reporting: This is a reportable animal disease in Ohio and all suspected cases must be reported 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. It is encouraged that the [local health department](#) (LHD) be contacted about confirmed animal cases with potential for transmission to humans.

Transmission: LCMV is excreted in the saliva, urine, milk, feces and semen. Infections can be spread congenitally, through bites, contact with aerosolized virus or ingestion of other infected rodents. Laboratory evidence shows that vectors such as fleas, ticks, cockroaches and mosquitoes can transmit the virus, but they are not believed to play a significant role in nature.

Clinical signs:

SPECIES	CLINICAL SIGNS
Mice	Many infected in utero are asymptomatic for months developing glomerulonephritis between six and 12 months later. Stunted growth and reproductive failure are common. Those infected after a few days of age experience acute signs of blepharitis, weakness, convulsions and death.
Hamster	Early symptoms include lethargy, anorexia and rough coat. Chronic cases have stunted growth, reduced litter sizes, and glomerulonephritis.
Rat	Symptoms include microcephaly, retinitis and permanent CNS damage.
Nonhuman Primate	Fever, anorexia, dyspnea, weakness, lethargy, hepatitis and petechial hemorrhages; usually followed by death

Diagnostics:

- Immunostaining: detects viral antigens in liver tissue
- Viral isolation
- RT-PCR: kidney or brain tissue
- Serology (ELISA, neutralizing antibody, IFA) can be negative even in confirmed cases

Case classification:

- Suspected: a clinical case with signs consistent with LCMV.
- 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: The reporting of single human cases is not required, although encouraged. Two or more suspected human cases (e.g. outbreak) are required to be reported to the LHD.

Human illness: Infection during pregnancy presents life-threatening risk to fetus. Immunocompetent persons typically are asymptomatic or develop self-limiting flu-like symptoms. Especially in those who are immunocompromised, infection can lead to meningitis, transverse myelitis, Guillain-Barré-type syndrome and arthritis. Chronic infections do not occur and death is rare.

Personal protection: Person-to-person transmission has not been reported. Employ universal precautions and bite prevention when working with live or dead wild rodents, rodent colonies and primates. Pregnant women should avoid contact with these sources whenever possible. The CDC has specific recommendations for cleaning up areas contaminated with rodent droppings and nesting materials to prevent aerosolization of pathogens.

FOR MORE INFORMATION

Reportable Animal Diseases in Ohio

[ODA Division of Animal Industry](#)

[OAC Chapter 901:1-21 Dangerously Contagious or Infectious and Reportable Diseases](#)

Disease in Animals

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

Disease in Humans

[ODH Infectious Disease Control Manual](#)

[The Center for Disease Control Special Pathogens Branch](#)

[CDC Cleaning up after Rodents](#)