

Plague (*Yersinia pestis*) in Cats

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What is plague and how is it transmitted?

Plague is a bacterial infection caused by *Yersinia pestis* which is transmitted by the rodent flea. Although the rodent flea, *Xenopsylla cheopis*, transmits the disease, the flea is found not only on rats, prairie dogs, rock squirrels, and other rodents, but on cats, dogs, and rabbits as well. These domestic animals could carry infected fleas into the home. Cats and dogs can become infected through the bite of infected fleas or eating a rodent, rabbit, or other animal carrying infected fleas. The fleas can remain infectious (capable of transmitting the disease) for months. Plague occurs in multiple places in the world including the western third of the United States. Approximately 13 cases are reported in the United States per year.

What are the symptoms of plague?

There are three forms of plague. Bubonic plague is the form in which the lymph nodes near the flea bite become enlarged and painful with draining tracts. In septicemic plague, the bacteria enter the bloodstream and infect multiple organs in the body. The bacteria can also affect the lung and this is called pneumonic plague. In this form, the *Yersinia pestis* can be transmitted person-to-person or cat-to-person through air droplets from coughing.

Dogs are generally resistant to plague; they may become infected, but generally, only develop swollen lymph nodes (lymphadenopathy) and seldom other signs. Wild and domestic cats can become infected, and develop any of the three forms of the disease (bubonic, septicemic, pneumonic). Half of the cats infected with *Yersinia pestis* will die soon after developing the disease. The cat will have a fever and show other signs including discharge from the eyes, vomiting, diarrhea, dehydration, poor hair coat, swollen tongue, mouth ulcers, enlarged tonsils, and an enlarged abdomen.

How is plague diagnosed?

Plague can be diagnosed either through taking cultures of tissue specimens or fluids, through immunofluorescent testing methods which test fluid specimens, or through blood testing. The blood testing would require two samples taken at least 10-14 days apart. The blood test looks at a change in antibody level, and to be positive, the level must change by a factor of four over the two week period. If plague is suspected, the person or animal is often treated while awaiting the results.

Any diagnosis of plague in people or animals is reported to the local, state, and federal health departments.

How is plague treated?

Plague is treated with antibiotics, usually gentamycin or streptomycin. Tetracycline or doxycycline may be used in animals showing the bubonic form of the disease. Animals are generally treated for at least 21 days, far after any bubonic or pneumonic symptoms have resolved.

How is plague prevented?

To prevent transmission, any pet suspected of or being treated for plague is handled by persons wearing gloves, gowns and surgical masks, and the animal is kept in isolation.

If a person or animal is suspected of being exposed to plague, they are generally treated with tetracycline or doxycycline.

Rodent and [flea control](#) are the main components in a plague prevention program. Cats and dogs should be restricted from animal burrows and from eating any carcasses of dead rabbits or rodents.

A human vaccine against *Yersinia pestis* is available.