

FACT SHEET

For Veterinarians

PLAQUE

What causes plague?

It is caused by a gram-negative coccobacillus *Yersinia pestis*. This organism caused massive epidemics in Europe in the Middle Ages and was synonymous with Black Death. Today, the disease is rare, but the organism is still in the environment in sylvatic rodent species. In the United States, most of the recent cases of plague have been found in western states.

How is the disease transmitted?

The organism is spread through the bite of a flea that has ingested blood from an infected rodent. The flea can inoculate a large number of mammals through regurgitation of the bacteria while acquiring blood. Fleas can infect dogs and cats and can be carried into homes. Humans can then be exposed without seeing the original rodent. The bacteria can also be spread through direct contact with infected animals, careless manipulation of laboratory cultures, or through inhalation of secretions from a patient with plague pneumonia. Any patient with plague pneumonia can rapidly infect other people. Cats develop plague abscesses that have been a source of infection to veterinarians.

What is the incubation period?

In both humans and animals, it takes approximately 2 - 6 days from the initial contact or bite to result in disease.

What are the clinical signs in infected animals?

Rodents show similar signs as humans, including painful suppurative lymph nodes called buboes. *Yersinia pestis* can eventually spread via blood and infect other organ systems. Dogs and cats will usually show only a mild fever. Cases in animals are usually diagnosed after human infection has been identified or after the animal is found dead.

How is plague diagnosed?

Clinical diagnosis, laboratory confirmation, and evidence of travel to (or living in) endemic areas is necessary for human diagnosis. Plague infections in animals need to be reported to the State Veterinarian; infections in people to the Iowa Department of Public Health, (800) 362-2736.

What is the treatment and prognosis of plague?

Plague can be treated with antibiotics. Early diagnosis and treatment is the key because untreated pneumonic and septicemic forms are invariably fatal. Untreated bubonic plague has a fatality rate of 50% - 60%.

How can plague be prevented?

Flea control for both the environment and domestic pets will reduce the number of vectors that could possibly spread the disease. People living in rural, endemic areas should follow strict rodent control. A vaccine is available for laboratory workers or biologists working in the endemic areas.