

What is plague?

Plague is an infectious disease that affects animals and humans. It is caused by the bacterium *Yersinia pestis*. This bacterium is found in rodents and their fleas and occurs in many areas of the world, including the United States.

How do people get plague?

Plague is usually acquired from the bites of fleas infected with the plague bacterium. Fleas become infected by feeding on rodents, such as chipmunks, prairie dogs, ground squirrels, mice, and other mammals that are infected with the *Yersinia pestis* bacterium. These fleas can then transmit the bacteria when they subsequently bite humans. Less commonly, plague can be acquired from being bitten or scratched by infected animals or by handling carcasses of animals (often rodents or rabbits) that had been infected. Persons can also become infected by inhaling respiratory droplets from a coughing person who has plague pneumonia.

What are the signs and symptoms of plague?

The typical sign of the most common form of human plague is a swollen and very tender lymph node, accompanied by pain. The swollen node is called a "bubo" (hence the term "bubonic plague"). Besides the swollen lymph node, bubonic plague symptoms include fever, chills, headache, and extreme exhaustion. A person usually becomes ill with bubonic plague 2-6 days after being infected. When bubonic plague is left untreated, plague bacteria invade the bloodstream. When plague bacteria multiply in the bloodstream, they spread rapidly throughout the body and cause a severe and often fatal condition. The other form of human plague is called pneumonic plague. This is an infection of the lungs with the plague bacterium, causing a very severe respiratory illness.

The infected person may experience high fever, chills, cough, and breathing difficulty, and expel bloody sputum. Pneumonic plague can be transmitted from person to person through the air. Transmission can also occur if someone breathes in deliberately aerosolized bacteria, which could happen in a bioterrorist attack. In either the bubonic or pneumonic forms of plague, if patients are not given specific antibiotic therapy, the disease can progress rapidly to death.

Where does plague occur in the USA? How common is it?

The CDC reports an average of about 10 to 20 cases per year in the USA. Plague occurs in the western states, particularly Arizona, California, Colorado, and New Mexico. There has never been a case of plague in Wisconsin. In the rest of the world, plague occurs in parts of Asia, Africa, and South America.

How is plague diagnosed?

Laboratory tests must be done to detect the plague bacterium. These tests usually consist of blood cultures and microscopic examination of lymph gland, blood, and sputum samples.

How is plague treated?

Patients with suspected plague should be hospitalized and medically isolated, and antibiotic treatment should begin as soon as possible after laboratory specimens are taken. Streptomycin is the antibiotic of choice. Gentamicin is used when streptomycin is not available. Tetracyclines and chloramphenicol are also effective. Persons who have been in close contact with a plague patient, particularly a patient with plague pneumonia, should be identified and evaluated. Occasionally, preventive antibiotics are given to such contacts to keep them from getting sick.

Who is at risk of plague?

Persons who come into contact with animals and their fleas in areas where plague occurs are at risk of getting infected. These would include hunters and trappers; campers or hikers entering areas with outbreaks of animal plague; residents of areas in which plague exists, especially where housing and sanitation conditions are poor; and veterinarians and pet owners handling infected cats. Persons who come into contact with patients with plague pneumonia are also at risk and may require preventive antibiotics.

How can plague be prevented?

Avoiding contact with infected animals and their fleas is the key to prevention. Therefore, in areas where plague occurs, rodent-proofing of dwellings and reducing rodent harborage (e.g., refuse piles, woodpiles, cutting tall grass and shrubs) will make contact with rodents less likely. If traps or poisons are used for rodent control, insecticides should also be used to kill any fleas the rodents might have. Campers and hikers should avoid rodent burrows and any contact with rodents. Hunters and trappers should wear gloves when handling wildlife, and should consider using insect repellents to minimize fleabites. Veterinarians and cat owners in affected areas should take care to avoid bites and scratches from cats that have a fever and enlarged lymph nodes.