



## What is plague?

Plague is an infectious disease caused by the bacteria *Yersinia pestis*. It is the cause of the infamous Black Death of medieval Europe, which is believed to have killed approximately one-third of the world's population in the 14th century. In the United States, plague occurs mostly in the western United States from the Great Plains to the Pacific Coast. Most reported cases occur in New Mexico, Arizona, and Colorado. Plague is a rare disease in Oklahoma; only one case of human plague has ever been reported. This case occurred in 1991 and was associated with exposure to prairie dogs in the Oklahoma panhandle.

## What are the symptoms of plague?

There are three kinds of plague:

- Bubonic plague is the most common form of the disease in nature, accounting for 75 to 97 percent of cases. The symptoms, which come on quickly, include fever, chills, weakness, and painful, swollen lymph nodes, or “buboes”.
- Septicemic plague, a blood infection caused by plague bacteria, is less common. It accounts for fewer than 20 percent of “natural” plague cases.
- Pneumonic plague is the most severe form of the illness, but the least common in nature. It accounts for fewer than 14 percent of cases. However, this is believed to be the form of plague most likely to result from a terrorist attack. It occurs when the bacteria enter the lungs, which quickly causes a severe form of pneumonia. Symptoms of pneumonic plague include high fever, chest pain, cough, shortness of breath, and coughing up bloody fluid or mucus.

## How is plague spread?

People get bubonic plague from infected animals. In nature, plague is a disease of wild rodents, but can also infect humans and other mammals. Plague is transmitted by flea bites. Fleas become carriers of the bacteria by feeding on chipmunks, prairie dogs, ground squirrels, and other rodents that are infected with the bacteria. Less often, other mammals may become accidentally infected with plague, but they play no significant role in the disease cycle. Rarely, humans are bitten by plague-carrying fleas from rodents and become infected. In addition, humans may become infected after handling tissue or body fluids of sick or dead animals infected with plague, for example, while hunting. The species of fleas that infest dogs and cats do not transmit plague; however, rodent fleas may attach themselves to domestic pets that are allowed to enter the habitat of wild rodents. When brought into the home, these fleas may then bite humans and cause disease.

A rare form of the disease, pneumonic plague, is spread from person to person. The droplets are released into the air when infected people—or animals—cough. However, if plague were to be used as a weapon, the bacteria could be released into the air on purpose. (Please see the related fact sheet entitled *Pneumonic Plague*). The typical form of plague, bubonic plague, is not spread from person to person.

## Is there a treatment for plague?

Treatment with antibiotics is very effective, especially if started in the early stages of the disease. If left untreated, the bubonic form of the disease has a fatality rate of about 40%. For cases of pneumonic plague, unless antibiotic treatment is started within 24 hours, the patient can quickly go into shock and die. For patients who do not receive immediate treatment, the death rate is nearly 100%.

## Is there a vaccine against plague?

No commercial vaccine currently exists in the United States.

### **What can be done to prevent plague?**

The risk of becoming infected with plague in Oklahoma is very low. However, if you live or visit the Panhandle, or participate in outdoor activities in the western United States (roughly west of the east-west Texas-Oklahoma border) the following tips will reduce your chances of becoming infected:

- Reduce rodent habitats around your home, work place, and recreational areas. Remove brush, rock piles, junk, cluttered firewood, and possible rodent food supplies, such as pet and wild animal food. Make your home and outbuildings rodent-proof.
- Wear gloves if you are handling or skinning potentially infected animals to prevent contact between your skin and the plague bacteria.
- Use repellent if you think you could be exposed to rodent fleas during activities such as camping, hiking, or working outdoors. Products containing DEET can be applied to the skin as well as clothing and products containing permethrin can be applied to clothing (always follow instructions on the label).
- Keep fleas off your pets by applying flea control products. Animals that roam freely are more likely to come in contact with plague infected animals or fleas and could bring them into homes. If your pet become sick, seek care from a veterinarian as soon as possible.
- Avoid allowing dogs or cats that roam free in endemic areas to sleep on your bed.