

## 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 is pneumonic plague?

Plague can take different clinical forms depending on how the bacteria enters and spreads within the body. The three major clinical forms of plague are bubonic, septic, and pneumonic. (For an overview, please see the fact sheet called *Plague*.) Pneumonic plague is a rare form of the disease that results when plague bacteria infect the lungs. Pneumonic plague is the least common but most dangerous form of the disease. Recently, there has been heightened concern regarding the use of plague as a biological weapon. This fact sheet gives information about plague both as a biological weapon and the pneumonic form as a rare, but naturally occurring disease.

## How does someone get pneumonic plague?

There are two ways a person or an animal can become sick with pneumonic plague. The first, most common way, is called *secondary* pneumonic plague. In this form, a person or animal's lungs become infected as a result of (that is, *secondary*) widespread infection of the body. This widespread infection is a rare complication of bubonic plague, which is acquired from the bite of infected fleas or from handling infected animals (see *Plague* fact sheet). However, once a person or animal has developed pneumonic plague, they are able to transmit pneumonic plague to others by coughing or sneezing. A person or animal who gets the disease after being coughed or sneezed on by another has *primary* pneumonic plague. The droplets expelled by a coughing or sneezing pneumonic plague patient are fairly large, and do not travel more than about six feet. Therefore, only people in close contact with a person with pneumonic plague are considered to be a risk for the disease. In a hypothetical bioterrorism attack, *Yersinia pestis* bacteria would have been altered to allow particles to be transmitted by air. The inhalation of these particles would result in primary pneumonic plague.

## Can pets get plague?

Yes. Most mammals, including cats and dogs, can become infected and die from plague. In the United States, the most common way humans get pneumonic plague is from respiratory secretions from pet cats with secondary pneumonic plague. Upon investigation, most of these cats were found to have lived in parts of the rural west where interaction with wild rodents and their fleas probably occurred. While this type of exposure is extremely rare, pet owners and others caring for sick animals that have been in areas where plague exists in rodents (see *Plague* fact sheet) should avoid getting sneezed or coughed on, or having contact with respiratory secretions from the pets.

## What are the symptoms of pneumonic plague?

The first signs of pneumonic plague are fever, headache, weakness, and cough. Pneumonia progresses rapidly, resulting in difficulty breathing, shortness of breath, and chest pain. Within about a day of first symptoms, infected people usually begin to cough up bright red, bloody sputum. Other symptoms include nausea, vomiting, abdominal pain, and diarrhea.

## How soon do symptoms appear?

In primary pneumonic plague, symptoms appear between one and six days after breathing in the bacteria, usually within two to four days.

**Is there a treatment for pneumonic plague?**

To be effective, antibiotics should be given within 24 hours of the first symptoms. Several types of antibiotics are effective for treating the disease and for preventing it in those exposed. There is no vaccine available that protects against pneumonic plague.

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

1. Reduce the risk of the development of bubonic plague and secondary pneumonic plague in pets by using recommended flea control products.
2. Antibiotic treatment for seven days will protect people who have had direct, close contact with an infected person or for those exposed in a bioterrorism event.
3. Wearing a close-fitting surgical mask around ill persons will protect against infection.

