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Plague Fact Sheet



Male *Xenopsylla cheopis* (oriental rat flea) engorged with blood. This flea is the primary vector of plague in most large plague epidemics in Asia, Africa, and South America. Both male and female fleas can transmit the infection.

Q. How is plague transmitted?

A. Usually by bites from fleas that are infected with the bacterium that causes plague ([Yersinia pestis](#)), although smaller numbers of cases occur following direct contact with infectious body fluids or inhalation of infectious respiratory droplets. (<http://www.cdc.gov/ncidod/dvbid/plague/ifa.htm>).

Q. How do people get plague?

A. Usually by the bites of fleas infected with the plague bacterium, but also through handling infected animals or exposure to persons or animals with plague pneumonia and cough.

For more complete Internet Information:
<http://www.cdc.gov/ncidod/dvbid/plague/index.htm>

Q. What is the basic transmission cycle?

A. Fleas usually become infected by feeding on rats and certain other rodents that are circulating the bacterium [Yersinia pestis](#) in their bloodstreams. Fleas transmit the plague bacteria to humans and other mammals while feeding on the blood of these animals.

Q. Could you get plague from another person?

A. Yes, when the other person has plague pneumonia and cough, droplets containing plague bacteria can be spread into the air. If a non-infected person inhales these infectious droplets, they also can become infected.

Q. What are the signs and symptoms of plague?

A. The typical sign of the most common form of human plague is a swollen and very tender lymph gland, accompanied by pain. The swollen gland is called a "bubo" (hence the term "bubonic plague"). Buboes usually appears in the groin, armpit or neck region. Bubonic plague should be suspected when a person develops a swollen gland, fever, chills, headache, and extreme exhaustion, and has a history of possible exposure to infected animals or fleas. Pneumonic plague, a less common but much more dangerous form of the disease, is characterized by high fever, cough, bloody sputum and difficulty in breathing.

Q. What is the incubation period for plague?

A. A person usually becomes ill with bubonic plague 2 to 6 days after being infected. When bubonic plague is left untreated, plague bacteria invade the bloodstream. When plague bacteria escape the person's immune defenses and freely multiply in the bloodstream, they can spread rapidly throughout the body and cause a severe and often fatal condition called septicemic plague. Infection of the lungs with the plague bacterium causes the pneumonic form of plague, a severe respiratory illness. The infected person may

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experience high fever, chills, cough with bloody sputum and breathing difficulties. Although pneumonic plague may occur secondarily as a consequence of untreated bubonic or septicemic plague, it also can result from inhaling infectious respiratory droplets or other materials. The incubation period for pneumonic plague cases acquired by inhalation is usually about 2 days. If plague patients are not given specific antibiotic therapy, the disease can progress rapidly to death.

Q. What is the mortality rate of plague?

A. About 14% (1 in 7) of all plague cases in the United States are fatal. Most cases in the U.S. receive some antibiotic treatment during their course of illness and deaths typically result from delays in seeking treatment or misdiagnosis. Reportedly, about 50-60% of bubonic plague patients who fail to receive any antibiotic treatment die. Untreated septicemic or pneumonic plague is almost always fatal.

Q. How many cases of plague occur in the U.S.?

A. Human plague in the United States has occurred as mostly scattered cases in rural areas (an average of 5 to 15 persons each year). Globally, the World Health Organization reports 1,000 to 3,000 cases of plague every year. Most of these non-U.S. cases occur in impoverished rural environments that are heavily rat-infested.

Q. How is plague treated?

A. According to treatment experts, a patient diagnosed with suspected plague should be hospitalized and medically isolated. Laboratory tests should be done, including blood cultures for plague bacteria and microscopic examination of lymph gland, blood, and sputum samples. 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. The U.S. Public Health Service requires that all cases of suspected plague be reported immediately to local and state health departments and that the diagnosis be confirmed by CDC. As required by the International Health Regulations, CDC reports all U.S. plague cases to the World Health Organization.

Q. Is the disease seasonal in its occurrence?

A. Yes. Most cases in the U.S. occur during the warmer months of the year but cases can occur during any month of the year. Winter cases in the U.S. typically occur among hunters, trappers and cat owners handling infected animals. Warm season cases are most often attributed to flea bite. Numbers of cases in tropical regions often fluctuate between wet and dry seasons.

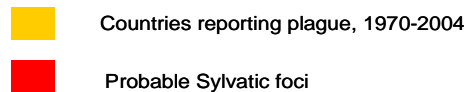
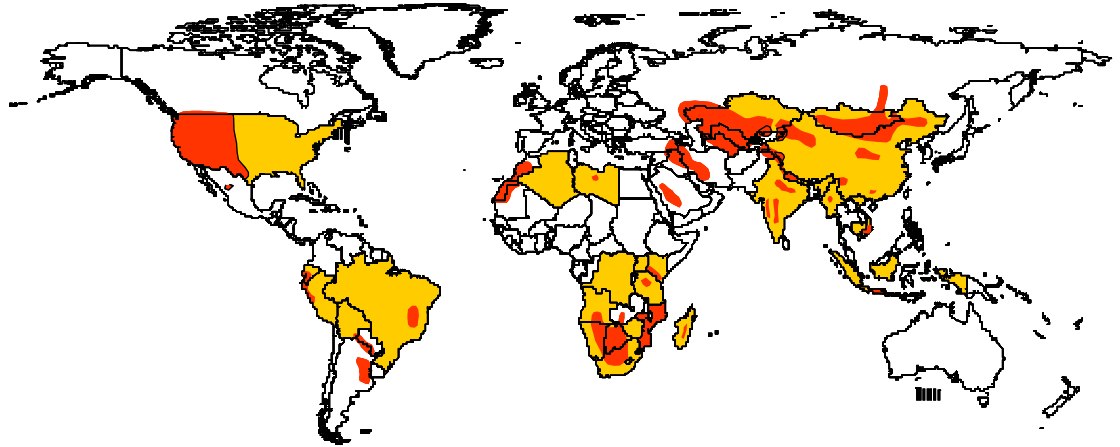
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Q. Where is plague most common?

A. The map at right shows countries that have reported plague since 1970. Also shown in red are areas where plague reportedly has become established in local rodent and flea populations. These red areas can serve as sources of infection for human plague outbreaks in surrounding areas.

Global Distribution of Plague



Compiled from WHO, CDC, and country sources

Q. Who is at risk for getting plague?

A. Outbreaks in people occur in areas where housing and sanitation conditions are poor. These outbreaks can occur in rural communities or in cities. They are usually associated with infected rats and rat fleas that live in or near homes.

For more information, visit www.cdc.gov/ncidod/dvbid/plague, or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (español), or (866) 874-2646 (TTY).