

# Plague Fact Sheet

Toledo-Lucas County Health Department | Emergency Preparedness



## What is plague?

Plague is a disease that affects humans and other mammals. It is caused by the bacterium, *Yersinia pestis*. Humans usually get plague after being bitten by a rodent flea that is carrying the plague bacterium or by handling an animal infected with plague. Plague is infamous for killing millions of people in Europe during the Middle Ages. Today, modern antibiotics are effective in treating plague. Without prompt treatment, the disease can cause serious illness or death. Presently, human plague infections continue to occur in the western United States, but significantly more cases occur in parts of Africa and Asia.

## How is plague transmitted?

The plague bacteria can be transmitted to humans in the following ways:

**Flea bites.** Plague bacteria are most often transmitted by the bite of an infected flea. During plague epizootics, many rodents die, causing hungry fleas to seek other sources of blood. People and animals that visit places where rodents have recently died from plague are at risk for being infected from flea bites. Flea bite exposure may result in primary bubonic plague or septicemic plague.

### Contact with contaminated fluid or tissue.

Humans can become infected when handling tissue

or body fluids of a plague-infected animal. For example, a hunter skinning a rabbit without using proper precautions could become infected. This form of exposure may result in bubonic plague or septicemic plague.

**Infectious droplets.** When a person had plague pneumonia, they may cough droplets containing the plague bacteria into the air. If these bacteria-containing droplets are breathed in by another person they can cause pneumonic plague. This typically requires direct and close contact with the person with pneumonic plague. Transmission of these droplets is the only way that plague can spread between people.

## What are the symptoms of plague?

**Bubonic plague:** Patients develop sudden onset fever, headache, chills, and weakness and one or more swollen, tender and painful lymph nodes. This form usually results from the bite of an infected flea. The bacteria multiply in the lymph node closest to where the bacteria entered the human body. If the patient is not treated with the appropriate antibiotics, the bacteria can spread to other parts of the body.



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**Septicemic plague:** Patients develop fever, chills, extreme weakness, abdominal pain, shock, and possibly bleeding into the skin and other organs. Skin and other tissues may turn black and die, especially on fingers, toes, and the nose. Septicemic plague can occur as the first symptom of plague, or may develop from untreated bubonic plague. This results from bites of infected fleas or from handling an infected animal.

**Pneumonic plague:** Patients develop fever, headache, weakness, and a rapidly developing pneumonia with shortness of breath, chest pain, cough, and sometimes bloody or watery mucus. Pneumonic plague may develop from inhaling infectious droplets or may develop from untreated bubonic or septicemic plague after the bacteria spread to the lungs. The pneumonia may cause respiratory failure and shock. Pneumonic plague is the most serious form of the disease and is the only form of plague that can be spread from person to person (by infectious droplets).

### How is plague diagnosed?

Plague is a probable diagnosis for people who are sick and live in, or have recently traveled to, the western United States or any other plague-endemic area. The most common sign of bubonic plague is the rapid development of a swollen and painful lymph gland called a bubo. A known flea bite or the presence of a bubo may help a doctor to consider plague as a cause of the illness.



In many cases, especially in septicemic and pneumonic plague, there are no obvious signs that indicate plague. Diagnosis is made by taking samples from the patient, either the blood or part of a swollen lymph gland, and submitting them for laboratory testing. Once plague has been identified

as a possible cause of the illness, appropriate treatment should begin immediately.

### What is the treatment for plague?

Plague is a very serious illness, but is treatable with commonly available antibiotics. The earlier a patient seeks medical care and receives treatment that is appropriate for the plague, the better their chances are of a full recovery.

People in close contact with very sick pneumonic plague patients may be evaluated and possibly placed under observation. Preventive antibiotic therapy may also be given, depending on the type and timing of personal contact.

### For more information:

Centers for Disease Control and Prevention (CDC):  
<https://www.cdc.gov/plague/>

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