CONDITION

Plague

Plague is a serious bacterial infection usually spread by infected fleas or contact with infected animals.

WHAT IT IS
Serious bacterial infection causing bubonic, bloodstream, or lung illness

BODY SYSTEM
Lymph nodes, blood, and lungs

MAIN SYMPTOMS
Sudden fever, swollen lymph nodes, weakness, cough

WHAT CAUSES IT
Infection with Yersinia pestis bacteria

HOW IT IS DIAGNOSED
Culture or PCR of blood, sputum, or lymph-node fluid

MAIN TREATMENT
Immediate antibiotics and supportive hospital care

CAN IT BE CURED?
Yes - prompt antibiotics can eliminate infection

IS IT AN EMERGENCY?
Yes - suspected plague needs immediate medical care

LONG-TERM OUTLOOK
Often full recovery when treated early

Overview

Plague is a rare but serious infection caused by the bacterium Yersinia pestis . The bacteria normally circulate among wild rodents and their fleas. People can become infected through flea bites, contact with an infected animal, or, less commonly, breathing in infectious droplets.

Plague still occurs in parts of Africa, Asia, and the Americas, including occasional cases in the western United States. Modern sanitation and antibiotics like amoxicillin or doxycycline have made large outbreaks much less common in many countries.

There are three main forms:

One form can develop into another. For example, untreated bubonic plague may spread to the blood and then the lungs.

Plague can worsen quickly, especially when it reaches the blood or lungs. However, it can usually be cured when appropriate antibiotics are started early. Suspected plague requires urgent medical assessment rather than routine monitoring at home.

- Bubonic plague affects the lymph nodes, which are part of the immune system
- Septicemic plague spreads through the bloodstream
- Pneumonic plague affects the lungs

Symptoms

Symptoms usually begin within several days of exposure. Pneumonic plague may appear more quickly, sometimes within about a day.

Most people develop a sudden illness with fever, chills, headache, marked weakness, and muscle aches. Other symptoms depend on the form of plague.

Bubonic plague usually causes one or more painful, swollen lymph nodes called buboes . A bubo may develop in the groin, armpit, or neck, often near the site of a flea bite or skin exposure. It can be very tender, warm, and enlarged. The skin over it may become red.

Septicemic plague occurs when bacteria multiply in the bloodstream. Symptoms may include severe weakness, abdominal pain, nausea, vomiting, bleeding under the skin, or bleeding from the mouth or nose. Blood circulation can fail, causing shock. Fingers, toes, or other tissues may become dark because they are not receiving enough blood.

Pneumonic plague causes fever, cough, chest pain, and difficulty breathing. Sputum, the mucus coughed up from the lungs, may be watery or bloody. Lung symptoms can progress rapidly.

Not everyone has a noticeable bubo. Septicemic or pneumonic plague can be the first sign of infection.

Causes and risk factors

Plague is caused by Yersinia pestis . The bacteria live in a cycle involving rodents and fleas. A flea can pick up the bacteria while feeding on an infected animal and pass them on through a later bite.

People may also become infected by handling the blood, tissue, or body fluids of an infected animal. Cats are particularly vulnerable to plague and can expose people through bites, scratches, droplets, or close contact with infected tissues. Dogs are less likely to become

severely ill but may carry infected fleas into a home.

Pneumonic plague can spread between people through respiratory droplets. This generally requires close, direct exposure to someone who is coughing while they have active lung infection. Bubonic plague does not usually spread from person to person unless the infection has reached the lungs.

Risk is higher with:

Plague is not caused by poor personal hygiene. A person can be exposed during ordinary outdoor, work, or animal-related activities in an affected area.

- Flea exposure in an area where plague occurs in wildlife
- Contact with sick or dead rodents, rabbits, cats, or other susceptible animals
- Hunting, skinning, or handling animal tissues without protection
- Close contact with a person or animal that has pneumonic plague
- Living, working, or camping where infected rodents and fleas are present

Diagnosis

A clinician will consider your symptoms, recent travel, animal or flea contact, occupation, and possible contact with someone who has pneumonic plague. Because the infection can progress quickly, treatment may begin before test results are final.

Samples may include blood, sputum, or fluid taken from a swollen lymph node. A laboratory can try to grow Yersinia pestis in a culture , which confirms the infection. PCR , a test that detects the bacterium's genetic material, can provide additional confirmation.

The laboratory and public health authorities need to be alerted when plague is suspected. This allows the samples to be handled safely and helps identify other people who may have been exposed.

Other conditions can cause fever, swollen lymph nodes, bloodstream infection, or pneumonia. Testing helps distinguish plague from these more common causes.

Treatment and management

Plague is treated with antibiotics that are active against Yersinia pestis . Treatment is most effective when started as soon as plague is suspected. The antibiotic chosen depends on the form and severity of the infection, the person's age and health, and available test results.

Hospital care may include fluids, oxygen, breathing support, and treatment for shock or bleeding problems. A severely swollen lymph node may need assessment, but it should not be squeezed or opened outside a medical setting.

People with suspected or confirmed pneumonic plague are placed under respiratory precautions. These measures reduce exposure to droplets produced by coughing. Precautions are usually continued until antibiotics have had enough time to make transmission unlikely, following public health guidance.

Close contacts of someone with pneumonic plague may be monitored for symptoms and offered preventive antibiotics. People with a high-risk exposure to infected animals or laboratory material may also receive preventive treatment. Public health teams decide who needs this based on the type and timing of contact.

Finishing the prescribed antibiotic course is important even if symptoms improve quickly.

Complications

Without prompt treatment, plague may spread or cause life-threatening organ damage. Possible complications include:

Some complications, such as tissue loss or major organ injury, can have lasting effects. Early antibiotic treatment lowers the risk, but it cannot always reverse damage that has already occurred.

- Bloodstream infection and shock
- Severe pneumonia and respiratory failure
- Abnormal bleeding and blood clots
- Tissue death in fingers, toes, or other areas
- Meningitis, an infection around the brain and spinal cord
- Kidney or other organ injury

Prevention

Plague can sometimes be prevented by reducing contact with infected fleas, rodents, and animal tissues. It cannot be eliminated completely from places where the bacteria circulate naturally among wildlife.

There is no routinely available plague vaccine for the general public in the United States.

In areas where plague occurs:

Do not rely on killing rodents alone. If their fleas are not controlled, the fleas may move to people or pets. Local pest-control or public health services can advise on safe rodent and flea management.

If a pet becomes ill after contact with rodents, tell the veterinarian about that exposure. Avoid close face-to-face contact with a coughing cat until it has been assessed.

- Do not touch sick or dead wild animals with bare hands
- Keep pets from roaming or hunting rodents
- Use veterinarian-recommended flea control for pets
- Store food and rubbish so they do not attract rodents
- Remove brush, clutter, and other rodent shelter near buildings
- Use insect repellent when fleas may be present
- Wear gloves when handling potentially infected animals

Living with it and what to expect

Plague is an acute infection, not a lifelong condition. People who receive effective treatment early may improve over several days, although weakness and reduced stamina can continue during recovery. More severe infection may require a longer hospital stay and weeks or months of rehabilitation.

After the infection has been cleared, the bacteria do not normally remain dormant in the body. Plague is not considered a chronic infection. However, injury caused by shock, tissue death, or severe pneumonia may lead to longer-term health needs.

Follow-up may include checking that symptoms have resolved and reviewing any organ, breathing, or wound complications. Public health staff may also ask about recent contacts and exposures. This is used to protect other people, not to assign blame.

Having plague once should not be treated as reliable protection against another infection. Future exposure to infected fleas, animals, or respiratory droplets can still be a concern.

When to get medical help

Seek emergency medical care immediately if you develop sudden fever or severe illness after:

Fever with a new, very painful swollen lymph node also needs immediate assessment. Call

ahead when possible and describe the exposure so the healthcare setting can prepare safely.

Cough, chest pain, bloody sputum, or difficulty breathing after a possible plague exposure is an emergency. Avoid close contact with other people while arranging care. Follow instructions from emergency or public health services about transport and face coverings.

Routine follow-up is appropriate after treatment if recovery is continuing as expected. Contact your care team sooner for returning fever, worsening weakness, new swelling, increasing pain, breathing symptoms, or trouble taking the prescribed antibiotics.

- A flea bite or rodent exposure in an area where plague occurs
- Handling a sick or dead animal that might have been infected
- Close contact with a person or animal suspected of pneumonic plague

Common questions

Is plague still around today?

Yes. Yersinia pestis continues to circulate among animals and fleas in several parts of the world. Human cases are now uncommon in many countries, but small outbreaks and isolated cases still happen.

Can plague be cured?

Yes. Appropriate antibiotics can cure plague, especially when they are started early. Delayed treatment increases the chance of bloodstream infection, lung infection, shock, and other complications.

Can I catch plague from another person?

Person-to-person spread is mainly associated with pneumonic plague. It happens through close exposure to respiratory droplets from someone who is coughing. Bubonic plague does not usually pass directly between people.

What does a plague bubo feel like?

A bubo is a swollen lymph node that is usually very painful and tender. It often appears in the groin, armpit, or neck and may have warm or red skin over it. Other infections can also cause swollen lymph nodes, so appearance alone cannot confirm plague.

Can dogs or cats give people plague?

Pets can bring infected fleas into the home. Cats can also develop plague and may transmit it through bites, scratches, infected tissues, or respiratory droplets if their lungs are affected. A pet that becomes ill after hunting or contacting rodents needs prompt veterinary assessment.

Was the Black Death caused by plague?

Yes. Evidence indicates that Yersinia pestis caused the Black Death, the major pandemic that affected Europe, Asia, and North Africa in the 14th century. Plague remains the same type of bacterial infection, but antibiotics, laboratory testing, sanitation, and public health systems have greatly changed how it is managed.

Sources

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