

Human Plague

Transmission from person to person

Plague symptoms depend on how the patient was exposed to the plague bacteria. Plague can take different forms, including:

- **Bubonic plague**—Patients develop sudden onset of fever, headache, chills, and weakness and one or more swollen, tender, and painful lymph nodes (called buboes). This usually results from the bite of an infected flea.
- **Septicemic plague**—Patients develop fever, chills, extreme weakness, abdominal pain, shock, and possibly bleeding into the skin and other organs. This usually 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. May develop from inhaling infectious droplets or from untreated bubonic or septicemic plague that spreads to the lungs.

Pneumonic plague transmission

Although plague can sometimes spread from person to person, this is very rare.¹ A person who has pneumonia caused by plague may cough up droplets (e.g., splashes or sprays) that contain plague bacteria. These bacteria-containing droplets can cause pneumonic plague if they are breathed in by another person nearby. Human-to-human transmission of plague from droplets typically requires **direct and close contact** with a person who has pneumonic plague (<http://www.cdc.gov/plague/symptoms/index.html>). Close contact is defined as anyone who has been within 6 feet of a patient with plague while they were coughing up blood. **Transmission of infected droplets is the only way that plague can spread between people.**

Incubation period

The incubation period (time between exposure to the bacteria and showing signs of infection) for pneumonic plague is typically 2-4 days (range 1-6 days).^{2,3} **Therefore, a person who was exposed to infected droplets more than 7 days ago and remains healthy is very unlikely to develop infection.**

Recommendations for follow-up

Antibiotics should be considered for people who have been in close contact with a person who has had pneumonic plague in the previous 7 days. Doxycycline, ciprofloxacin, and levofloxacin are the most effective antibiotics for preventing plague and should be taken for 7 days. Close contacts should also measure their temperature twice a day for 7 days and see a physician if fever develops.

People who had some contact with a person with pneumonic plague (but not close contact) in the previous 7 days should be **monitored for fever or cough** and notify their healthcare provider and their state or county public health department if any symptoms develop.

¹ Kugeler KJ, Staples JE, Hinckley AF, Gage KL, Mead PS. Epidemiology of human plague in the United States, 1900–2012. *Emerg Infect Dis*. 2015 Jan. (http://wwwnc.cdc.gov/eid/article/21/1/14-0564_article)

² Kool JL. Risk of person-to-person transmission of pneumonic plague. *Clin Infect Dis*. 2005 Apr 15;40(8):1166-72.

³ Koirala J. Plague: disease, management, and recognition of act of terrorism. *Infect Dis Clin North Am*. 2006 Jun;20(2):273-87, viii.