



Plague

Information for Healthcare Facilities

Adapted with permission from the Kansas Poison Control.

Last revised: August 2026

Causative Agent

Spore forming Bacterium called *Yersinia pestis*

Hospital Precautions

Standard and droplet precautions. Person-to person transmission of pneumonic plague can occur until 72 hours since appropriate antimicrobial therapy is started.

Transmission

Transmitted naturally by infected fleas. Can also be spread via infected animals or inhalation of an infected person's cough or sneeze.

Decontamination

Remove contaminated clothing and then launder with hot water and detergent or store in sealed, plastic bags which should then be re-bagged and labeled. Discard clothes if heavily contaminated. Patients should shower thoroughly with soap and water. Personnel coming into contact or handling contaminated clothing should wear appropriate barriers. Heat, disinfectant, and sunlight render the bacteria innocuous. Clothing and surface decontamination can be performed using a 0.5% hypochlorite solution (one part household bleach to nine parts water). Routine cleaning with EPA-approved disinfectants is sufficient for environmental contamination.

Mechanism

Acute bacterial infection resulting in lymphatic and blood colonization (bubonic and septicemia plague); inhalation results in pneumonic plague.

Routes

Inhalation, flea bites or contact with contaminated tissue, fluids, animals.

Symptoms/ Onset

- Incubation period is usually 2-6 days for the flea-borne transmission and 1-4 days for inhalation exposure. Primary pneumonic plague has shorter incubation period (hours to days).
- Bubonic Plague: high fever, chills, painful/swollen lymph nodes (buboes) usually in groin, axilla, or neck, headache/muscle aches.
- Septicemic Plague: can develop secondary to bubonic plague, fever, chills, abdominal pain, bleeding into skin and organs, shock.
- Pneumonic Plague: fever, chills, cough with bloody sputum, chest pain, may lead to respiratory failure and shock

Treatment

- If antimicrobial treatment is not initiated within 24 hours of the onset of symptoms, pneumonic plague is usually fatal. Treatment duration is generally 10-14 days or at least 2 days after fever resolves.
- Pneumonic or septicemic plague: IV (or PO if available) ciprofloxacin, levofloxacin, streptomycin, or gentamicin for both children and adults.
- Bubonic plague: IV (or PO if available) ciprofloxacin, levofloxacin, doxycycline, streptomycin, or gentamicin for both children and adults.
- Streptomycin dosing: 1g IM every 12 hours (adults; max 2 g/day) or 15mg/kg IM every 12 hours (children; max 2000 mg/day).
- Gentamicin dosing: 5 mg/kg IM/IV once daily (adults) or 2.5 mg/kg IM/IV every 8 hours for (children; max 250 mg/dose)
- Doxycycline dosing: 100mg IV/PO twice daily (adults) or 2.2 mg/kg IV/PO twice daily for (children; max 100 mg/dose)
- Levofloxacin dosing: 500 mg IV/PO once daily (adults) or 8 mg/kg IV/PO every 12 hours (children; max 250 mg/dose)
- Ciprofloxacin dosing: 400 mg IV every 8-12 hours or 500-750 mg PO twice daily (adults) or 15 mg/kg IV every 12 hours (children; max 400 mg/dose) or 20 mg/kg PO every 12 hours (children; max 500 mg/dose)

Doxycycline, ciprofloxacin, and levofloxacin PO can be used for both adults and children if suspected exposure has occurred. Prophylaxis should be continued for 7 days after the last known or suspected *Y. pestis* exposure. PO dosing is the same as listed above.

Medical Management of Biological Casualties Handbook. 9th ed. U.S. Army Medical Research Institute of Infectious Diseases. Fort Detrick Frederick, Maryland. September 2020.
Advanced Hazmat Life Support-Provider Manual. 4th ed. Arizona Board of Regents. Advanced Hazmat Life Support International Headquarters-Tucson, Arizona. 2023.

REFERENCES

Plague. Centers for Disease Control and Prevention Updated May 15, 2024. Available from: <https://www.cdc.gov/plague/about/index.html>.
Centers for Disease Control and Prevention. Recommended antibiotics for plague. Atlanta, GA: US Department of Health and Human Services, CDC; 2018. Available from: <https://www.cdc.gov/plague/resources/recommended-antibiotics-for-plague-web-site-rev-jan2018-p.pdf>.