



## PLAGUE

- Agent Information:** Plague is caused by the gram-negative bacteria *Yersinia pestis*. There are three types of infection: pneumonic, bubonic, or septicemic. The bacterium occurs naturally in many areas of the world, including the U.S. Pneumonic plague is the most likely form that would result from a bioterrorist attack.
- Transmission:** Plague bacteria may be transmitted to humans through the following:
- Bite of an infected flea. Fleas may first become infected by feeding on plague-infected animals (rodents, dogs, or cats). This type of transmission would most likely result in bubonic or septicemic plague.
  - Contact with contaminated fluid or tissue when handling a plague-infected animal. This type of transmission would most likely result in bubonic or septicemic plague.
  - Infectious droplets produced when a person with pneumonic plague coughs. Another person may become infected by breathing in these droplets. Pneumonic plague is the **only** form of plague that is spread from person to person.
- Septicemic plague may develop as a complication from untreated bubonic plague. Pneumonic plague may develop from untreated bubonic or septicemic plague.
- Signs and Symptoms:** Incubation period generally is 1-6 days. General symptoms for all types of plague include fever, chills, weakness, and headache. Specific symptoms for each type:
- Pneumonic:** Rapidly developing pneumonia (24-36 hours from onset of illness) with shortness of breath, chest pain, cough, and hemoptysis. *The combination of a rapidly progressive influenza-like-illness (ILI) with bloody sputum is highly suspicious of pneumonic plague.*
- Bubonic:** One or more swollen lymph nodes or buboes.
- Septicemic:** Abdominal pain, shock, and bleeding into the skin and organs, causing skin and other tissues to turn black and die – specifically on fingers, toes, and nose.
- Decontamination:** Yes, if exposure is from aerosolization and presentation is immediate.
- Isolation:** Negative pressure for pneumonic plague.



<b>Protective Measures:</b>	Pneumonic: Contact and droplet precautions with use of an N-95 mask as a minimum. Maintain patients in negative pressure isolation rooms for at least 48 hours after beginning antibiotic therapy.
<b>Lab Samples Requested for Evaluation:</b>	Clinical specimens for PCR: sputum, bronchial washes, transtracheal aspirates, NP swabs ( <i>NO transport medium can be used for PCR testing</i> ). Clinical specimens for culture: include the above, plus: blood; bubo aspirate; biopsied specimen of liver, spleen, bone marrow; or lung tissue.
<b>Prophylaxis:</b>	<ul style="list-style-type: none"><li>• No vaccine of proven efficacy against primary pneumonic plague exists.</li><li>• Antibiotic treatment for seven days protects people who had direct, close contact with infected persons.</li><li>• In a contained casualty setting, parenteral streptomycin or gentamycin are recommended.</li><li>• In a mass casualty setting when IV or IM therapy may not be possible, oral doxycycline (or tetracycline), ciprofloxacin, or chloramphenicol are recommended.</li><li>• Doxycycline is the first choice for post-exposure oral prophylaxis.</li></ul>
<b>Treatment</b>	<ul style="list-style-type: none"><li>• Immediate: Antibiotics must be given within 24 hours of first symptoms to reduce mortality. Streptomycin, gentamycin, tetracyclines, and chloramphenicol are expected to be effective.</li><li>• First 24-48 hours: Advanced medical supportive cares required. Complications of gram-negative sepsis would be expected, including ARDS, DIC, shock and multi-system organ failure.</li></ul>
<b>Reporting:</b>	Immediately report suspect cases to the Division of Public Health, Office of Infectious Disease Epidemiology: 1-888-295-5156 (24/7 coverage).
<b>For additional Information:</b>	Visit the CDC website: <a href="http://www.cdc.gov/plague/healthcare">www.cdc.gov/plague/healthcare</a> .