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Health Department

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Plague

May 2009

What is plague?

Plague is a disease caused by *Yersinia pestis* (*Y. pestis*), a bacterium found in rodents and their fleas in many areas around the world. There are two types of plague: pneumonic and bubonic. A bioweapon carrying *Y. pestis* is possible because the bacterium occurs in nature and could be isolated and grown in quantity in a laboratory. *Yersinia pestis* used in an aerosol attack could cause cases of pneumonic plague.

Is pneumonic plague different from bubonic plague?

Yes. Both are caused by *Yersinia pestis*, but they are transmitted differently and their symptoms differ. Pneumonic plague can be transmitted from person to person; bubonic plague cannot. Pneumonic plague affects the lungs and is transmitted when a person breathes in *Y. pestis* particles in the air. Bubonic plague is transmitted through the bite of an infected flea or exposure to infected material through a break in the skin.

What are the symptoms of plague?

Symptoms for bubonic plague include swollen, tender lymph glands called buboes. If bubonic plague is not treated, the bacteria can spread through the bloodstream and infect the lungs, causing a secondary case of pneumonic plague. Symptoms of pneumonic plague usually include fever, weakness, and rapidly developing pneumonia with shortness of breath, chest pain, cough, and sometimes bloody or watery sputum. Nausea, vomiting, and abdominal pain may also occur. Without early treatment, pneumonic plague usually leads to respiratory failure, shock, and rapid death.

A person usually becomes ill with bubonic plague two to six days after being infected. With pneumonic plague, illness occurs within one to six days after exposure.

Can pneumonic plague be treated?

Yes. To prevent a high risk of death, antibiotics should be given within 24 hours of the first symptoms. Several types of antibiotics are effective for curing the disease and for preventing it. Available oral medications are a tetracycline (such as doxycycline) or a fluoroquinolone (such as ciprofloxacin). Early in the response to a bioterrorism attack, these drugs would be tested to determine which is most effective against the particular weapon that was used.

How is plague treated?

Antibiotics should be given within 24 hours of the first symptoms. This is extremely important to reduce the risk of death. Local or state health departments should be notified immediately so they can begin to investigate and control the problem right away. In the event of a bioterrorism attack with pneumonic plague, national and state public health officials have large supplies of medication that can be sent anywhere in the U.S. within 12 hours.

How can you prevent plague?

To reduce the risk of getting pneumonic plague from another person or giving it to someone else, avoid close contact with other people. Individuals having direct and close contact with someone with pneumonic plague should wear tightly fitted disposable surgical masks. People who have had close contact with an infected person can greatly reduce the chance of becoming sick if they begin treatment within seven days of their exposure. This consists of taking antibiotics for at least seven days. Currently, there is not a plague vaccine available in the U.S.

For more information:

Call the Sedgwick County Health Department at
660-7300 or the
Sedgwick County Health Department Public Health
Emergency Management (PHEM) Team
On-Call Number: (316) 660-5551