May 4, 2011

Plague Fact Sheet

1. **What is Plague? -** Plague is a disease caused by *Yersinia pestis*, a bacterium found in rodents and their fleas in many areas around the world.

2. **Why are we concerned Plague as a bioweapon? –** If *Y. pestis* is used in an aerosol attack could cause large number of cases of Pneumonic Plague one to six days after becoming infected Once people have Pneumonic Plague, the bacteria would be airborne and spread person-to-person. Because of the time delay between being exposed to the bacteria and becoming sick, people could travel long distances before becoming contagious. Controlling the disease would then be more difficult.

3. **Is Pneumonic Plague different from Bubonic Plague? -** Yes. Both are caused by *Y. 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 another person breathes in *Y. pestis* bacteria suspended 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. Symptoms include swollen, tender lymph glands called buboes. Buboes are not present in Pneumonic Plague. If Bubonic Plague is not treated, however, the bacteria can spread through the bloodstream and infect the lungs, resulting in Pneumonic Plague.

4. **What are the signs and symptoms of Pneumonic Plague? -** Patients usually have 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.

5. **How do people become infected with Pneumonic Plague? -** Pneumonic Plague occurs when *Y. pestis* infects the lungs. Transmission can take place if someone breathes in *Y. pestis* bacteria, which could happen in an aerosol release during a bioterrorism attack. Pneumonic Plague is also transmitted by breathing in *Y. pestis* suspended in respiratory droplets from a person (or animal) with Pneumonic Plague. Respiratory droplets are spread most readily by coughing or sneezing. Becoming infected in this way usually requires direct and close (within 6 feet) contact with the ill person or animal. Pneumonic Plague may also occur if a person with Bubonic or septicemic Plague is untreated and the bacteria spread to the lungs.

6. **Does Plague occur naturally? -** Yes. The World Health Organization reports 1,000 to 3,000 cases of Plague worldwide every year. An average of 5 to 15 cases occur each year in the western United States. These cases are usually scattered and occur in rural to semi-rural areas and have been linked to contact with infected rodents or cats. Most cases are of the Bubonic form of the disease. Naturally occurring Pneumonic Plague is uncommon, although small outbreaks do occur. Both types of Plague are readily controlled by standard public health response measures.

7. **Can a person exposed to Pneumonic Plague avoid becoming sick? -** Yes. People who have had close contact with an infected person can greatly reduce the chance of becoming sick if they begin antibiotic treatment within 7 days of their exposure. Treatment consists of taking antibiotics for at least 7 days.

8. **How quickly would someone get sick if exposed to Plague bacteria through the air? -** Someone exposed to *Y. pestis* through the air—either from an intentional aerosol release or from close and direct exposure to someone with Plague pneumonia—would become ill within 1 to 6 days.

9. **Can Pneumonic Plague be treated? -** Yes. 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). For injection or intravenous use, streptomycin or gentamicin antibiotics are used. Since drug resistance can occur, the infecting bacteria should be tested to learn which antibiotic works best.

10. **What should someone do if they suspect they or others have been exposed to Plague? -** Get immediate medical attention: To prevent illness, a person who has been exposed to Pneumonic Plague must receive antibiotic treatment without delay. If an exposed person becomes ill, antibiotics must be administered within 24 hours of their first symptoms to reduce the risk of death. Immediately notify local or state health departments so they can begin to investigate and control the problem right away.

11. **How can the general public reduce the risk of getting Pneumonic Plague from another person or giving it to someone else? -** If possible, avoid close contact with other people. People having direct and close contact with someone with Pneumonic Plague should wear tightly fitting disposable surgical masks. If surgical masks are not available, even makeshift face coverings made of layers of cloth may be helpful in an emergency. People who have been exposed to a contagious person can be protected from developing Plague by receiving prompt antibiotic treatment.

12. **How is Plague diagnosed? -** The first step is evaluation by a health worker. If the health worker suspects Pneumonic Plague, samples of the patient's blood, sputum, or lymph node aspirate are sent to a laboratory for testing. Once the laboratory receives the sample, preliminary results can be ready in less than two hours. Confirmation will take longer, usually 24 to 48 hours.

13. **How long can Plague bacteria exist in the environment? -** *Y. pestis* is easily destroyed by sunlight and drying. Even so, when released into air, the bacterium will survive for up to one hour, depending on conditions.

14. **Is a vaccine available to prevent Pneumonic Plague? -** Currently, no Plague vaccine is available in the United States. Research is in progress, but we are not likely to have vaccines for several years or more.

15. **For more information about Plague:** http://www.bt.cdc.gov/agent/Plague/faq.asp

This fact sheet provides general information. Please contact your physician and/or veterinarian for specific clinical information related to you or your animal.