



## **Anthrax**

### **Information for the Public**

#### **What is anthrax?**

Anthrax is a serious disease caused by *Bacillus anthracis*, a bacterium that forms spores. A bacterium is a very small organism made up of one cell. Many bacteria can cause disease. A spore is a cell that is dormant (asleep) but may come to life with the right conditions. There are three types of anthrax infection: cutaneous (skin), inhalation (lungs), and gastrointestinal (digestive).

#### **Does anthrax occur naturally? And, how common is anthrax?**

Anthrax is found in infected animals, infected animal products, such as wool, hides, leather and hair, and in soil. In rare cases, anthrax can spread to people and cause life-threatening illness. Naturally acquired anthrax is very uncommon in the United States. In the United States, there are one or two cases of cutaneous disease per year.

#### **How long can anthrax bacteria exist in the environment?**

Anthrax spores can survive in soil for years.

#### **How do people become infected with anthrax?**

- **Anthrax from animals.**  
Humans can become infected with anthrax by handling products from infected animals or by breathing in anthrax spores from infected animal products (like wool, for example). People also can become infected with gastrointestinal anthrax by eating undercooked meat from infected animals.
- **Anthrax as a weapon.**  
Anthrax also can be used as a weapon. This happened in the United States in 2001. Anthrax was deliberately spread through the postal system by sending letters with powder containing anthrax. This caused 22 cases of anthrax infection.

#### **Is anthrax contagious?**

Anthrax is not known to spread from one person to another.

#### **How dangerous is anthrax?**

The Centers for Disease Control and Prevention classifies agents with recognized bioterrorism potential into three priority areas (A, B and C). Anthrax is classified as a Category A agent.

Category A agents are those that:

- Pose the greatest possible threat for a bad effect on public health
- May spread across a large area or need public awareness
- Need a great deal of planning to protect the public's health

In most cases, early treatment with antibiotics can cure cutaneous anthrax. Even if untreated, 80 percent of people who become infected with cutaneous anthrax do not die. Gastrointestinal anthrax is more serious because 25 to 60 percent of cases lead to death. Inhalation anthrax is much more severe.

### What are the signs and symptoms of anthrax?

The chart below describes the three types of anthrax infection and lists some typical symptoms.

| Type of Anthrax                         | Cutaneous<br>(skin)   | Inhalation<br>(in the lungs through<br>breathing)  | Gastrointestinal<br>(in the stomach or<br>intestines)   |
|---|---|--|---|
| <b>How anthrax<br/>infects the body</b> | Bacteria enter a cut or abrasion on the skin  | Bacteria are inhaled into the lungs through breathing  | Meat that is contaminated with the bacteria is eaten  |
| <b>Case Fatality</b>                    | 20% of cases are fatal if untreated. Less than 1% are fatal if treated  | About 75% of cases are fatal, even when treated  | 25-60% are fatal. It is unknown if treatment decreases fatalities   |
| <b>Early Symptoms</b>                   | A raised itchy bump that looks like an insect bite appears within one to two days. This small sore then develops into a blister.  | Cold or flu-like symptoms such as sore throat, mild fever, muscle aches, malaise/ body discomfort, chills, nonproductive cough, chest pains, headache. *                               | Nausea, loss of appetite, vomiting, fever, throat lesions, sore throat, swelling of the lymph nodes.                                      |
| <b>Late Symptoms</b>                    | The blister then develops into a skin ulcer (one to three centimeters in diameter) with a black area in the center. The sore, blister and ulcer do not hurt. Also, nearby lymph glands may swell. | Cough, chest discomfort, tiredness, muscle aches, severe breathing problems and shock. Hemorrhagic meningitis (bloody infection of the brain causing severe life-threatening illness). | Abdominal pain, vomiting of blood, severe diarrhea, bloody diarrhea, and generalized toxemia (presence of bacterial toxins in the blood). |
| <b>Communicability</b>                  | No person-to-person transmission. <b>It is not contagious.</b>  | No person-to-person transmission. <b>It is not contagious.</b>   | No person-to-person transmission. <b>It is not contagious.</b>  |

**\*Caution: Do not assume that just because a person has cold or flu symptoms that they have inhalation anthrax.**

### How soon do infected people get sick?

There is an incubation period, which means that there is period of time between exposure and the appearance of symptoms of the disease.

Symptoms of an anthrax infection usually occur in seven days for all three types of anthrax. For inhalation anthrax, symptoms can appear within four days or can take up to 42 days to appear.

### **How is anthrax treated?**

Early antibiotic treatment for someone who has been infected can increase chances of survival, especially with cutaneous infection. Anthrax is usually sensitive to penicillin, doxycycline and fluoroquinolones. *However, a person should NEVER self-treat with any antibiotics. Health authorities must determine treatment.*

- **Prevention after exposure.**

Treatment is different for a person who is exposed to anthrax, but is not yet sick. Health-care providers will use antibiotics (such as ciprofloxacin, doxycycline, or penicillin) combined with the anthrax vaccine to prevent anthrax infection.

- **Treatment after infection.**

Treatment is usually a 60-day course of antibiotics. Success depends on the type of anthrax and how soon treatment begins.

### **Can anthrax be prevented?**

There is a vaccine to prevent anthrax, but it is not yet available for the general public. Anyone who may be exposed to anthrax, including certain members of the U.S. armed forces, laboratory workers, and workers who may enter or re-enter contaminated areas, may get the vaccine. Also, in the event of an attack using anthrax as a weapon, people exposed would get the vaccine. Antibiotics are very effective in preventing an anthrax infection from occurring after exposure

### **What should someone do if they suspect they have anthrax?**

If you are showing symptoms of anthrax infection, call your health-care provider right away.

### **What should someone do if they think they have been exposed to anthrax?**

Contact local law enforcement immediately if you think that you may have been exposed to anthrax. This includes being exposed to a suspicious package or envelope that contains powder.

Report suspected cases of anthrax or suspected intentional release of anthrax to your local health department. The local health department is responsible for notifying the state health department and local law enforcement. The state health department will notify the Centers for Disease Control and Prevention (CDC), Michigan State Police Emergency Management, and the Michigan office of the Federal Bureau of Investigation (FBI).

### **What is being done to prepare for a possible anthrax attack?**

The Centers for Disease Control and Prevention (CDC) is working with state and local health authorities to prepare for an anthrax attack. Activities include:

- Developing plans and procedures to respond to an anthrax attack.
- Training and equipping emergency response teams to help state and local governments control infection, gather samples, and perform tests.
- Educating health-care providers, media, and the general public about what to do in the event of an attack.
- Working closely with health departments, veterinarians, and laboratories to watch for suspected cases of anthrax.
- Developing a national electronic database to track potential cases of anthrax.
- Ensuring that there are enough laboratories for quickly testing suspected anthrax cases.
- Working with hospitals, laboratories, emergency response teams, and health-care providers to make sure they have the supplies they need in case of an attack.

### **What is Michigan doing to combat this health threat?**

The Michigan Department of Community Health is working closely with physicians and laboratories to make them aware of the signs and symptoms of anthrax and to be able to identify anthrax. Increased surveillance by local health departments is incredibly important in our efforts to detect bioterrorism, investigate potential cases and ensure that patients will be cared for properly. Hospitals, health care providers, and health departments throughout the state are prepared to follow the protocols and recommendations for care set by the Centers for Disease Control and Prevention to ensure patient safety.

### **For more information on anthrax:**

For more information on anthrax:

- Contact your local public health department. Check <http://www.malph.org/page.cfm/108/> for your jurisdiction. A list of local public health departments is also available at [http://www.michigan.gov/documents/June2003LHDList\\_69658\\_7.pdf](http://www.michigan.gov/documents/June2003LHDList_69658_7.pdf)
- Visit the Michigan Department of Community Health website <http://www.michigan.gov/ophp>
- Visit The Centers for Disease Control and Prevention (CDC) website, <http://www.bt.cdc.gov/agent/anthrax/index.asp>
- Call the Centers for Disease Control and Prevention Public Response Service Hotline:  
English: 1-888-246-2675  
Español: 1-888-246-2857  
TTY: 1-866-874-2646