

Personal Preparedness for an Anthrax Emergency: Benefits and Risks of Home Storage of Antibiotic Drugs

Questions and Answers

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Introduction

Anthrax is a disease that can kill people. It is caused by a germ found in nature. A terrorist could make this germ into a weapon and use it to attack the United States.

Some drugs called antibiotics can help prevent anthrax disease if used quickly and properly after exposure to the anthrax germ. Storing antibiotics in your home could help you prepare for an anthrax emergency. But home storage of antibiotics involves risks that you should consider very seriously.

Please read all of the questions and answers below. They provide facts about anthrax disease and the benefits and risks of storing antibiotics in your home to use in an anthrax emergency.

1. What causes anthrax disease?

Anthrax is a disease caused by the germ *Bacillus anthracis*. Another name for germ is bacterium.

The anthrax germ has two forms. It can exist in an active form like most other germs that can cause infections. It also can exist as a spore.

A spore is like a seed that can travel far and wide. It can be inactive for a long time. But, under the right conditions, it can change into the active form of the germ. Anthrax spores can cause a bad disease in people if the spores become active germs after getting into the lungs, into a cut or other break in the skin, or into the digestive system.

2. What is anthrax disease?

Anthrax disease can occur in three different forms.

One form is an infection within the lungs after someone inhales anthrax spores and they then change into active anthrax germs. We call this form inhalational anthrax. It is the most serious of the three forms of anthrax.

Another form is infection of the skin. We call this form cutaneous anthrax. It occurs when someone's skin comes into contact with either anthrax spores or active anthrax germs and the germs or spores are able to enter a cut or other break in the skin.

Yet another form is an infection within the digestive system. We call this form gastrointestinal anthrax. It occurs when someone eats food that is contaminated with anthrax spores or active anthrax germs.

You can get more information about anthrax disease from the Centers for Disease Control and Prevention (CDC) at <http://www.bt.cdc.gov/agent/anthrax/diagnosis/>.

3. Is anthrax disease common?

Anthrax disease occurs in nature but is rare in the United States and other industrialized nations. We see anthrax disease more often in parts of the world where people often have close contact with farm animals that are not vaccinated for the disease.

Anthrax does not spread from one person to another in the way that the common cold does. But a person could spread anthrax if his or her clothing or body somehow were to get anthrax spores on it. Others who have close contact with that person could be exposed to those spores and possibly become infected.

4. How could an anthrax emergency come about?

The United States suffered an anthrax attack in 2001. We do not know who was behind it. Some person or persons sent anthrax spores through the mail. This caused 22 cases of anthrax disease – 11 cases were inhalational anthrax (when people breathed in the spores) and 11 other cases were cutaneous anthrax (when people got spores into cuts or other breaks in their skin). Of the 11 inhalational anthrax cases, 5 died.

An anthrax emergency might never occur again. But we have no way to be certain. Terrorists exist in many parts of the world. And many terrorists hate the United States and everything that it stands for. Experts in homeland security believe that some terrorists would use the anthrax germ as a weapon against the United States if they were to get the opportunity.

As bad as the 2001 anthrax attack was, a future attack could be very much worse. For instance, terrorists could release a large quantity of anthrax spores outdoors over a densely populated area. Such an attack could cause many more anthrax cases and deaths than in 2001.

5. What is the Federal Government doing to prepare for an anthrax emergency?

Since well before 2001, the Federal Government has been working at home and abroad to prevent and respond to terrorism. The guiding strategy has four basic themes: (a) to identify and stop potential terrorists before they can act; (b) to detect a terrorist attack soon after it occurs; (c) to make Federal Government agencies, States, and local governments better able to respond if an attack were to occur; and (d) to stockpile equipment and supplies needed for such a response.

In particular, the Department of Health and Human Services (HHS) gives very high priority to preparing for possible anthrax attacks. We have purchased and stockpiled an enormous quantity of antibiotics – enough to meet the needs of several large cities if they were attacked at the same time.

Also, we are working closely with our state and local government partners to develop and test ways to get these drugs quickly to everyone at risk in an anthrax emergency. This could save many lives. But it is a huge challenge, and we have not met it yet. In fact, we have much more work to do to feel confident about providing antibiotics as broadly and rapidly as a future anthrax attack might require.

People could store antibiotics in their homes to help them prepare for an anthrax attack. This would reduce the number of people to whom local and State health officials would need to distribute antibiotics during the first few days after an anthrax emergency. To pursue this idea, we are

working to encourage development of a special kit containing antibiotics to prevent anthrax. The kit also would contain instructions for storage and emergency use.

A study using a test version of such a kit was done with about 4,500 households in St. Louis, Missouri during 2006-2007. This study showed that almost all of those households (more than 95%) stored their kits properly and, when the time came to give them back to the study team, returned their kits intact and unopened. This study did not, however, test each person's understanding of the instructions on the package. Also, the people who participated in the study might not represent the United States population in general.

We plan more studies to encourage private companies to develop a kit like this as an FDA-approved commercial product. You would be able to get it with a doctor's prescription.

6. What can I do now to ensure that my household members and I have timely access to antibiotics after an anthrax attack?

HHS generally does not recommend home storage of antibiotics. But we understand that you might want to think about storing such drugs in your home. This could reduce your need to depend upon public health agencies as they try to get antibiotics to everyone at risk during an anthrax emergency.

You will need a doctor's prescription to get antibiotics that work against the anthrax germ. Your doctor will need to determine whether such drugs are right for you.

You should be aware that anthrax drugs can have bad effects as well as benefits. Further, you should be aware that, like other drugs, anthrax drugs expire over time. Once this happens, they might not work against the anthrax germ. See the answers to Questions 7, 8, and 9 for additional facts related to the benefits and risks of antibiotics.

7. What are the benefits of antibiotics?

Antibiotics are used to treat infections from germs. Often the treatment cures the infection. Infections can occur in many different parts of the body. Different antibiotics work against different germs. None of them work against all germs and the infections they cause.

8. What are the risks of antibiotics?

Like other drugs, antibiotics can have bad effects as well as good ones. Some bad effects are common to all antibiotics. Other bad effects vary from one drug to another. Some bad effects can be very serious – even put your life in danger. One example of a very serious bad effect that sometimes occurs after antibiotic use is a type of shock called anaphylaxis. That is why you should use antibiotics only as directed by your doctor or public health officials.

With regard specifically to FDA-approved anthrax drugs, FDA recently issued a warning that use of a certain class of antibiotics called fluoroquinolones, which includes ciprofloxacin and levofloxacin, can lead to inflammation and rupture (tears) of tendons. Torn tendons can result in severe physical disability and may not be repairable, even with surgery. See the answer to Question 10 for additional facts about these drugs.

9. What other facts should I consider?

Antibiotics do not work against viruses and the infections they cause. The common cold and the flu (influenza) are two examples of infections caused by viruses.

Also, never take an antibiotic unless a doctor or public health official tells you to do so. Misuse of antibiotics could cause them to lose their ability to treat common diseases caused by germs, such as urinary tract infections and pneumonia. As a general rule, the more that an antibiotic is used, the more quickly some germs that are all around us as part of nature will become able to resist the drug.

Drug-resistant germs can spread quickly to family members, schoolmates, and co-workers. One current example you may have read about is the increase in cases of infection with the germ called MRSA. Its full medical name is “methicillin-resistant Staphylococcus aureus”.

Thus, any antibiotics you get to prepare for a possible anthrax emergency should be used only if such an emergency happens and then only as directed by public health officials or a doctor.

10. Which antibiotics work against the anthrax germ?

The Food and Drug Administration (FDA) has approved three drugs to help prevent anthrax disease. You can take these drugs orally (by mouth). They are doxycycline, ciprofloxacin, and levofloxacin. You can get more facts about them from FDA’s Counterterrorism page. The web address is <http://www.fda.gov/oc/opacom/hottopics/bioterrorism.html> ; click on the heading "Anthrax Vaccine/Treatments". You also can check at Drugs@FDA. The web address is <http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm>].

Doctors consider many things on a patient-by-patient basis before deciding whether to prescribe any drug and, if so, which one(s). Doctors and public health officials know that all of the antibiotics approved for use against anthrax have other important uses in healthcare. They might worry that prescribing antibiotics to prepare for an anthrax attack could lead to their misuse. This in turn could lead to the bad outcomes discussed in Questions 8 and 9.

Doctors and public health officials might worry especially about misuse of the class of antibiotics called fluoroquinolones. Ciprofloxacin and levofloxacin are in this class of drugs. They are the main ones used to treat certain common illnesses such as urinary tract infections and pneumonia.

We recognize that many doctors will want more information about what to consider if people request prescriptions for antibiotics to prepare themselves for a possible anthrax emergency. We therefore plan to work with professional societies representing doctors and public health officials to help them be better prepared to make such decisions.

11. Should these antibiotics be given to children during an anthrax emergency?

These antibiotics have risks associated with their use in children. Some of these risks are very serious. To get details, see the websites listed in the answer to question 10. But be aware that an anthrax emergency would put those risks in a very different light. FDA has determined that the benefits of using these antibiotics to prevent inhalational anthrax in children would outweigh the risks.

12. Should women who are pregnant or breast feeding an infant use these antibiotics during an anthrax emergency?

These antibiotics have risks associated with their use by women who are pregnant or breast feeding an infant. Some of these risks are very serious. To get details, see the websites listed in the answer to question 10. But be aware that an anthrax emergency would put those risks in a very different light. FDA has determined that the benefits of using these antibiotics to prevent inhalational anthrax in women who are pregnant or in women and infants whom they are breast feeding would outweigh the risks.

13. If, after getting a prescription from my doctor, I were to purchase an antibiotic to keep for use during a possible anthrax emergency, how should I store the antibiotic in my home?

Store the drug in a safe, dry, and dark place. Make sure the space is at room temperature (68-77 degrees Fahrenheit). Keep the drug far away from children and pets. If a child or pet accidentally swallows the drug, call your Poison Information Center immediately to get advice about what to do – 1-800-222-1222.

Also, be sure that you do not keep the antibiotic beyond the expiration date printed on the label. If you have more questions about storage conditions, please consult your prescribing physician or a pharmacist.

14. If I were storing an antibiotic at home to use during a possible anthrax emergency, how should I dispose of the drug when it reaches its expiration date or when I decide that I no longer wish to keep it?

Take the antibiotics out of their container. Mix them with an undesirable substance, such as coffee grounds or kitty litter. Put the mixture into a watertight container such as an empty can or sealable bag. Throw it into the trash. Do not flush the drugs down the toilet or wash them down the sink unless the accompanying drug label or patient information specifically instructs you to do so.

Also, ask your local public health department if your city or town has a program for disposing of expired drugs or ones that are no longer needed. If so, this program might give you an easier way to dispose of the antibiotics.

For more information about drug disposal, see the following FDA web site:
http://www.fda.gov/consumer/updates/drug_disposal062308.html .

15. Will my health insurance company, Medicaid, or Medicare pay for a prescription for home storage for use in a possible anthrax emergency?

Contact your health insurance company if you have questions about whether this cost is covered. Medicaid and Medicare do not cover the costs of such prescriptions.

16. How can I learn more?

You can find additional information at the following FDA and CDC websites:

<http://www.fda.gov/oc/opacom/hottopics/bioterrorism.html>

<http://www.fda.gov/cder/drugprepare/default.htm>

<http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm>

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