

## **ANTHRAX — General information and procedures**

### **FACTS ABOUT ANTHRAX**

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

Anthrax is a bacterial disease zoonosis caused by the bacterium *Bacillus anthracis*. It is most commonly found among animals such as cows, horses, sheep and goats, and human can be contaminated by handling dead carcasses. The bacterium can survive for years in the form of spores. However, in the Pacific Islands, anthrax has not been reported in any form — except in Papua New Guinea, where it is endemic among pigs especially. Anthrax does not occur naturally in powdered form. Powdered anthrax, with anthrax spores, is man-made.

Anthrax infection in humans is of three types reflecting the route by which the disease was acquired:

- cutaneous anthrax - infection of the skin;
- gastro-intestinal tract anthrax - infection of the gut/intestines;
- pulmonary or inhalation anthrax - infection of the lung.

#### **How is it spread?**

Anthrax infection in humans usually comes from infected animals or from exposure to the spores. The transmission of anthrax is as follows.

- Cutaneous (skin) anthrax occurs when the bacterium enters a cut or a bruise on the skin, such as when handling contaminated skins, wool, flesh or other parts of the infected animal, or by contact with contaminated soil.
- Intestinal anthrax follows the ingestion of contaminated food, mainly undercooked meat from an infected animal.
- Inhalation anthrax results from breathing in airborne spores of the bacteria. Anthrax spores in powders can enter the body via inhalation.

Person-to-person spread of anthrax is extremely unlikely, if it occurs at all.

#### **What are the signs and symptoms?**

Symptoms vary depending on how the disease was contracted, but usually occur within seven days after exposure.

- Cutaneous (skin) anthrax starts as a small itchy bump that grows and develops a blackened centre. It is usually painless.
- The initial signs of intestinal anthrax are nausea, loss of appetite, vomiting, and fever. These are usually followed by abdominal pain, vomiting of blood, and severe diarrhoea.
- The early symptoms of inhalation anthrax are similar to the common cold. After several days, the symptoms progress to severe breathing problems and shock. Inhalation anthrax can be fatal.



## How is anthrax treated or prevented?

Anthrax can be prevented after exposure with prompt antibiotic treatment. Prompt antibiotic treatment is also important for patients who have developed anthrax symptoms.

Vaccination against anthrax is not recommended for the general public.

## THE ANTHRAX THREAT IN THE WORLD

Amongst the numerous germs that may be used as weapons of bioterrorism, only a limited number could cause disease and deaths in sufficient quantities to seriously affect a population. Anthrax is one of the most serious of these diseases. To be efficient, and cause the more severe form of the disease — i.e., pulmonary anthrax — it has to be aerosolised into very small particles. This requires technical skills and special equipment. After an attack with aerosolised anthrax, inhalation anthrax is expected to account for most of the mortality and morbidity.

From October 2001 to the end of November 2001, cases of anthrax were reported in the United States among media and postal workers; other cases were consistent with exposure to letters known to be contaminated with anthrax. Although the presence of anthrax was also suspected in U.S. embassies in a few countries, most anthrax alerts outside the United States were due to hoaxes.

Anthrax or other bioterrorist threats are generally expected to target major towns and cities, rather than rural areas.

## THE ANTHRAX THREAT IN THE PACIFIC ISLANDS

In general, the risk of real anthrax exposure is negligible in the Pacific Islands at this point. A suspicious powder discovered in a package or letter is even more unlikely to contain anthrax if it was directly sent from a Pacific Island country or territory.

But the risk of exposure to an anthrax hoax is real; there have been many episodes in the Pacific already.

Because the two situations cannot be differentiated immediately, we must be prepared to respond appropriately — and at the same time to avoid over-reaction.

## WHAT MUST BE DONE IN RESPONSE TO AN ANTHRAX THREAT?

The main points of the response to an anthrax threat are as follows:

- Avoid any contact with the content of any suspicious letter or package.
- Determine if the contents include anthrax spores.  
*This step requires access to appropriate laboratory services. Countries and territories without such access will need to have an alternative way to deal with the threat until such access is provided.*
- In all cases in which exposure to anthrax is confirmed or cannot be ruled out:



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- give an appropriate preventive treatment to the persons who have been in contact with the powder;
  - decontaminate the premises where the exposure happened.
- Investigate the threat; try to determine who did it.

### **Who must be involved in response to an anthrax threat?**

An anthrax threat requires the services of the police, the fire brigade (or another public agency equipped with biohazard protection), and the health services.

#### **Police**

As any anthrax threat is a criminal act that affects both individuals and the population as a whole, law enforcement officers should lead the response. They should seal off the possibly infected area, make sure the appropriate measures are taken, and conduct an investigation. Respective responsibility for criminal and public health investigations have to be clearly identified and dissociated.

#### **Emergency workers with biohazard protection**

If firefighters or other biohazard-equipped personnel arrive before the police, they should seal off the involved area. They should be responsible for handling the suspected materials and dispatching them to the relevant laboratory — as well as for decontaminating the area if the need arises.

#### **Health services**

Health service personnel should be responsible for prophylaxis (preventive treatment) of exposed cases, laboratory testing of suspect substances (if possible), and diagnosis and treatment of any suspected anthrax case.

### **What anthrax-related policies should governments establish?**

Government policies must reflect all the above considerations.

They must strongly discourage anthrax hoaxes.

They should encourage international collaboration, especially for the investigation of suspected anthrax threats. In particular, they should facilitate collaboration on laboratory testing between countries and territories with adequate facilities and those without.

Each country and territory should have a contact person for the anthrax bioterrorism issue, so that people looking for more information or having a suspect letter or package have someone to turn to at all times.

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