# Healthcare And Bioterrorism: Types of Agents And Ways To Combat Them

Bioterrorism is when someone intentionally releases a virus or bacteria that to make people ill or cause death. Anthrax, plague, smallpox, and viral hemorrhagic fevers are all examples of bioterrorism agents. Bioterrorism can cause not only illness and death, but it causes panic and mayhem. While the threat of a bioterrorism attack has declined, it is still a very real threat to our country. Being informed and prepared could be the difference between life and death for many people.

## Types of Bioterrorism Agents

Anthrax spores are so small you can't see them. They are tasteless, odorless, and can survive a long time, making them easy for someone to infect food, powders or sprays. Anthrax is also found in nature and is very easily produced in a laboratory environment. Anthrax is caused by rod-shaped bacteria called Bacillus anthracis. If anthrax is left untreated, it can cause severe illness and even death. Anthrax gets into the body through the skin, lungs, or gastrointestinal system. If Anthrax is left untreated it will eventually spread through the entire body, causing death.

Plague is an infectious disease that affects rodents and humans. It is caused by the Yersinia Pestis bacteria. People most can become infected with the plague by being bitten by a flea that is infected with the plague bacteria. People can also become infected from direct contact from an animal that is sick with the plague. Another way people can become infected with the plague is by inhaling respiratory droplets from other humans with the plague. If bubonic plague is left untreated plague bacteria can get into the bloodstream, which allows it to spread though the body very rapidly causing death.

Smallpox is a serious infectious disease caused by the variola virus. Smallpox is very contagious, this allows it to spread from one person to anther very quickly. Many people with smallpox recover, however about 3 out of every 10 people with smallpox die. People that survive smallpox can have permanent scares on large areas of their body and some are even left blind. Due to vaccination in the 20th century, smallpox has been wiped out. The last report of someone contracting smallpox naturally was in 1977. It is possible that smallpox could be used in a biological attack, however, the chances are slim.

Viral hemorrhagic fever is an infectious disease that can cause severe, life-threatening illness. Viral hemorrhagic fever damages the walls of tiny blood vessels causing them to leak, this then causes internal bleeding. Viral hemorrhagic fever also messes with the body's ability to clot. The internal bleeding that viral hemorrhagic fever can cause can range from minor to life-threatening. Viral hemorrhagic fever lives naturally in wide range of animals and insects. The most common are mosquitoes, ticks, rodents and bats. Some viral hemorrhagic fevers are spread by mosquito or tick bites and others can be transmitted by contact with infected blood. Some forms of viral hemorrhagic fever can be inhaled from infected rat feces or urine. Viral hemorrhagic fevers can damage your brain, eyes, heart, kidneys, liver, lungs, and spleen.

## Healthcare and Bioterrorism

People in the health care industry would be greatly affected by a bioterrorism attack. Hospitals will become overwhelmed with patients that need immediate care. If no antidote is available treatment will be limited and resources will become quickly depleted. The spread of the disease can become rapid by touch and air born partials. Healthcare workers would be the most exposed to these agents. Protection and prevention are key to the survival of a bioterrorism attack. The most important step in the event of a bioterrorist attack is the identification of the event. We need to generate awareness, have a high degree of suspicion, and have a good surveillance system to assist in quick detection, this will help aide in early containment of the illness. Bioterrorist agents have been categorized as A, B, and C. These categories are based on the severity of the virus or bacteria. The preparedness phase, early warning phase, notification phase, response phase and recovery phase are the five phases of activities in dealing with a bioterrorist attack. All healthcare personal should be familiar with the proper protocol and actions to take in the event of a bioterrorism attack.

## Effects of Bioterrorism

Bioterrorism can affect population in countries greatly, by eliminating populations within those countries. If an entire city or country is eliminated due to bioterrorism everyday life resources will become greatly affected. Access to food, gasoline, clothing, and transportation would be greatly reduced if not stopped until the agent has been eliminated our contained. People with then start to become ill because of lack of basic living supplies not being available. Panic and desperation would increase, causing more harm and injuries to people. A bioterrorism attack could halt and entire city in just a matter of days.

## Ways to combat and fight against Bioterrorism

To protect ourselves from a bioterrorism attack there are precautions we can take. Such as having an emergency supply kit, have an emergency plan, get any required and recommended vaccinations, and consider installing a High-Efficiency Particulate Air (HEPA) filter in your furnace return duct, this will help filter out biological agents that can enter your home. To ensure our safety and the safety of our loved ones we must understand the dangers that could have catastrophic consequences and have a plan in place to handle and protect ourselves in these situations. Panic and hysteria will not get anyone anywhere only more people harmed. Staying up to date with CDC guidelines and protocol for healthcare is a must. Getting vaccinations for yourself and your loved ones can help protect them in the event of a bioterrorism attack.

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