

Biological and Chemical Terrorism

Biological agents include bacteria, viruses, fungi, other microorganisms and their associated toxins. They have the ability to adversely affect human health in a variety of ways, ranging from allergic reactions to serious medical conditions, even death. These organisms are widespread in the natural environment of water, soil, plants, and animals. They reproduce rapidly and survive in a variety of settings.

Bioterrorism is the intentional use of harmful biological substances or germs to cause widespread illness and fear. Bioterrorism is different from chemical, nuclear, or radiation attacks, which are designed to cause immediate damage and release dangerous substances into the air and surrounding environment. Because it would not usually be signaled by an explosion or other obvious cause, a biological attack may not be recognized immediately and may take local health care workers time to discover that a disease is spreading.

Chemical warfare agents are poisonous gases, liquids, or solids that have toxic effects on people, animals and plants. Exposure to chemical warfare agents can cause serious injuries and death. Severity of injury depends on the type and amount of the chemical warfare agent used, and the duration of the exposure.



There are a number of different types of biological and chemical agents that could be used as weapons of mass destruction. Some cause diseases that can be spread by infected people, such as smallpox, while others are only dangerous when a person comes into direct contact with the biological agent, such as anthrax. Here are some of most common agents:

Anthrax is an acute infectious disease caused by a spore-forming bacterium called *Bacillus anthracis*. It is generally acquired following contact with anthrax-infected animals or anthrax-contaminated animal products.

Botulism is usually associated with consumption of preserved foods. However, botulinum toxins are currently among the most common compounds explored by terrorists for use as biological weapons.

Chemical Agents are extremely toxic to people in small quantities. They include chemicals such as: chlorine, chloropicrin, phosgene, agent orange and mustard gas.

Nerve Agents are particularly toxic chemical warfare agents. They were developed just before and during World War II and are related chemically to the organ phosphorus insecticides. The principal agents in this group are: GA (Tabun), GB (Sarin), GD (Soman), GF and VX.

Plague. The World Health Organization reports 1,000 to 3,000 cases of plague every year. A bioterrorist release of plague could result in a rapid spread of the pneumonic form of the disease, which could have devastating consequences.

Ricin is a toxin that can be made from the waste left over from processing castor beans. It is one of the most toxic and easily produced plant toxins. Ricin has been used in the past as a bioterrorist weapon and remains a serious threat.

Smallpox is a highly contagious disease unique to humans. It is estimated that no more than 20 percent of the population has any immunity from previous vaccinations.

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