

## ***Bioterrorism – A New Threat to Mankind***

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Nowadays the whole world is facing the problem of terrorism. It is clear from recent attack in Mumbai that the terrorists keep finding new ways to spread terror among people. This leads to misuse of developments in various fields. This is also applied to the use of advances in field of life sciences for spreading such terror attacks. This has given rise to the bioterrorism, which refers to use of living organisms which can destroy a large population within no time.

A *bioterrorism attack* is the deliberate release of viruses, bacteria, or other germs (agents) used to cause illness or death in people, animals, or plants. These agents are typically found in nature and it is possible that they could be changed to increase their ability to cause disease, make them resistant to current medicines, or to increase their ability to be spread into the environment. Biological agents can be spread through the air, through water, or in food. Terrorists may use biological agents because they can be extremely difficult to detect and do not cause illness for several hours to several days. Some bioterrorism agents, like the smallpox virus, can be spread from person to person and some, like anthrax, cannot.

Though this term is being used in recent times it dates as far back as ancient Roman civilization, where dead and rotting animals were thrown into wells to poison water supplies. This early version of biological terrorism was used to destroy enemy forces covertly. Primitive medical technology provided limited means of protection for the aggressor and a battle's surrounding geographical regions. After the battle was won, the inability to contain enemies who escaped death led to widespread epidemics affecting not only the enemy forces, but also surrounding regions' inhabitants. The victims of biological terrorism in fact became weapons themselves. This was noted in the middle ages, but medical advancements had not progressed far enough to prevent the consequences of a weapons use. So many countries modified the weapons to make them more effective and also their ability to cause destruction to the right party.

One significant enhancement in biological weapon development was the first use of anthrax. Anthrax effectiveness was initially limited to victims of large dosages. This became a weapon of choice because it is easily transferred, has a high mortality rate, and could be easily obtained. Also, variants of the anthrax bacterium can be found all around the world making it the biological weapon of choice in the early 19th century. Another property of anthrax that helped fuel its use as a biological weapon is its poor ability to spread far beyond the targeted population.

As World War I began, advances in use of biological agents gave rise to use of anthrax and a newly discovered poisonous gas, the mustard gas. Its horrifying effects gave lead to a treaty to prevent use of such gases in warfare. But secretly advances in this field continued and led to consequently terror attacks in Korea, Iraq and the US.

Biological agents used in such bioterrorism attacks are divided into three groups on basis of the priority. The U.S. public health system and primary healthcare providers must be prepared to address various biological agents, including pathogens that are rarely seen in the United States.

### ***Category A agents:***

These have high potential for adverse public health impact and that also have a serious potential for large-scale dissemination. They have mortality rates. These agents include anthrax, smallpox, plague, botulism, tularemia, and viral hemorrhagic fevers.

### ***Category B agents:***

Category B agents are moderately easy to disseminate and have low mortality rates. The agents include Brucellosis, Glanders (*Burkholderia mallei*), Melioidosis (*Burkholderia pseudomallei*), Psittacosis (*Chlamydia psittaci*), Q fever (*Coxiella burnetii*), Ricin toxin from *Ricinus communis* (castor beans), Staphylococcal enterotoxin B, Typhus (*Rickettsia*