

RISE OF BIOWEAPONS: A PANDEMIC SCAR?

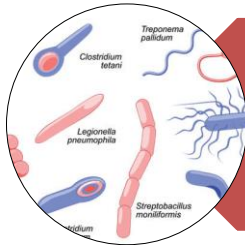
Pratham Arora, *Risk Intelligence Consultant*

WHAT IS BIO-WEAPONS?

Biological weapons, also called germ weapons, are any number of disease-producing agents—such as bacteria, viruses, rickettsia, fungi, toxins, or other biological agents—that may be utilized as weapons against humans, animals, or plants. Biological weapons, like chemical weapons, radiological weapons, and nuclear weapons, are commonly referred to as weapons of mass destruction.

Offensive biological warfare is prohibited under customary international humanitarian law and several international treaties. **In particular, the 1972 Biological Weapons Convention (BWC) bans the development, production, acquisition, transfer, stockpiling and use of biological weapons.** Therefore, the use of biological agents in armed conflict is a war crime. However defensive biological research for prophylactic, protective or other peaceful purposes is not prohibited by the BWC.

CATEGORIES OF BIOWEAPON AGENTS:



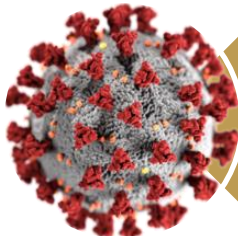
BACTERIA:

Single-cell organisms that cause diseases such as anthrax, brucellosis, tularemia, and plague.



RICKETTSIA:

Microorganisms that resemble bacteria but differ in that they are intracellular parasites that reproduce inside cells. Eg. Typhus and Q fever.



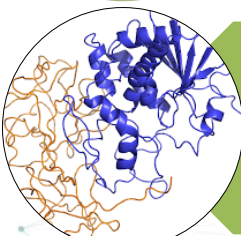
VIRUSES:

Intracellular parasites, about $1/100$ the size of bacteria, that can be weaponized to cause diseases such as Venezuelan equine encephalitis.



FUNGI:

Pathogens that can be weaponized for use against crops to cause such diseases as rice blast, cereal rust, wheat smut, and potato blight.



TOXINS:

Poisons that can be weaponized after extraction from snakes, insects, spiders, marine organisms, plants, bacteria, fungi, and animals. Eg. ricin

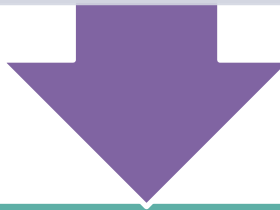
BIOWEAPON TYPOLOGY:

Bioweapons have been classified into 3 categories by the Centre for Disease Control (CDC)— Category A, B, and C, from the most dangerous to the least dangerous. The classification is on the following basis:

CATEGORY A

Have the highest potential for dissemination and mortality rates. Pose the greatest risk to national security as well as causing massive public fear and civil disruption. Require the most public health preparedness.

Anthrax, Botulism, Plague, Smallpox, Tularemia, Ebola, Marburg



CATEGORY B

Pose a potential risk through dissemination, although with fewer incidents of illness and lower rates of mortality. Considerable public health preparedness needed.

Q fever, Brucella, Burkholderia Mallei, Alphaviruses, Salmonella, E-coli, Vibrio cholerae



CATEGORY C

Not considered a significant threat. Could still lead to incidents of morbidity. Non-specific preparedness through overall bio-terrorism assessment.

Hantavirus, tickborne hemorrhagic fever, yellow virus, mycobacterium tuberculosis

BIO-WEAPONS THROUGH HISTORY

Bioweapons have historically been used in the form of contaminated bodies or objects being used to transfer diseases to the enemy. Eventually, as microbial research progressed, humans gained the ability to design and modify more “efficient” weapons where the microbe itself can be isolated and delivered directly.

1155

- Emperor Barbarossa poisons water wells with human bodies, Tortona, Italy

1346

- Mongols catapult bodies of plague victims over the city walls of Caffa, Crimean Peninsula

1495

- Spanish mix wine with blood of leprosy patients to sell to their French foes, Naples, Italy

1650

- Polish fire saliva from rabid dogs towards their enemies

1675

- First deal between German and French forces not to use 'poison bullets'

1763

- British distribute blankets from smallpox patients to native Americans

1797

- Napoleon floods the plains around Mantua, Italy, to enhance the spread of malaria

1863

- Confederates sell clothing from yellow fever and smallpox patients to Union troops, USA

1914-18

- During WW1, Germany attempted to infect allied horses and cattle with Glanders. They also tried to spread the plague in St. Petersburg.

1925

- Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare

1932-45

- Japan experiments included testing biological weapons on humans, and attacked 11 Chinese cities with biological weapons. This led to devastating attacks on Chinese cities with the likes of plague and cholera

1972

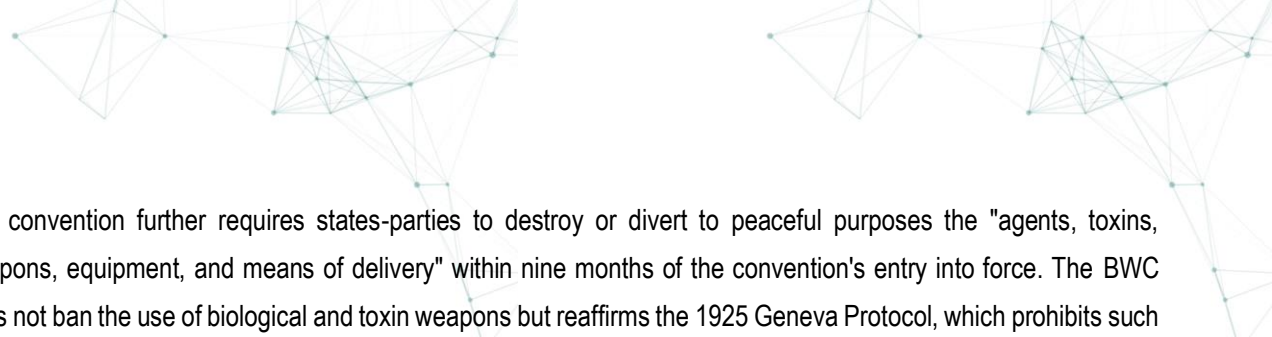
- The Biological Weapons Convention was signed, coming into force in 1975. This halted post WW2 chemical weapons programs especially in the US and USSR.

BIOLOGICAL WEAPONS CONVENTION (1975)

The **Biological Weapons Convention (BWC)** is a legally binding treaty that outlaws biological arms. After being discussed and negotiated in the United Nations' disarmament forum starting in 1969, the BWC opened for signature on April 10, 1972, and entered into force on March 26, 1975. It currently has 183 states-parties.

The terms of the treaty:





The convention further requires states-parties to destroy or divert to peaceful purposes the "agents, toxins, weapons, equipment, and means of delivery" within nine months of the convention's entry into force. The BWC does not ban the use of biological and toxin weapons but reaffirms the 1925 Geneva Protocol, which prohibits such use. It also does not ban biodefense programs.

SHORTCOMINGS OF THE CONVENTION

Bioweapon programs can be easily hidden and disguised as vaccine plants and benign pharmaceutical-production centres. Thus, the prospect of military advantage might tempt some regimes to acquire the weapons, though perhaps clandestinely.

Unfortunately, the BWC does not yet contain provisions for verification of members' compliance, and there has been evidence of significant cheating by some parties since the treaty went into effect.

The lack of a necessarily intrusive inspection and reporting system has left the states who are parties to the treaty with no strong assurance that they can monitor and verify other members' compliance with the terms of the BWC.


It is entirely possible that even a small and relatively poor state might successfully embark on a biological warfare program with a small capital investment and a few dozen biologists, all of which could be secretly housed within a few buildings.

For instance, a clandestine weapons program can be hidden inside a perfectly legal vaccine-production facility or pharmaceutical plant. Weapons laboratories disguised in this way would give off few unique "signatures," or telltale signs that illicit activity is taking place.

In fact, a biological weapons program might also be within the technical and financial reach of a terrorist organization. For example, the Anthrax Letters, which were sent by terrorist organisations.

In summary, the degree of biological weapons proliferation is highly uncertain, difficult to detect, and difficult to quantify, primarily, because such research can be veiled as benign research for preventive measures, or some other goal.

This lack of a verification procedure has led some critics of the BWC to argue that the best deterrent to being attacked with biological weapons is not a treaty at all but rather the recognized ability to retaliate in equal or greater measure.



BIOTERRORISM

Bioterrorism is the phenomena wherein non state actors acquire and use biological weapons causing great destruction. Bioterrorism is more difficult to limit than state-based use of bioweapons since terrorist groups cannot be limited through treaties and are even more difficult to track.

Prominent Instances Of Bioterrorism:

The Rajneeshis in Oregon

- In 1980s, there were followers of the exiled Indian self-proclaimed guru Bhagwan Shree Rajneesh settled on a ranch in Wasco county, Oregon, U.S.
- Leading up to the countywide elections, in a bid to take control of the county, cult members experimented with contaminating groceries, restaurants, and the water supply in The Dalles with *Salmonella* bacteria.
- Their efforts made at least 751 people ill.

The AUM Shinkriyo sect

- In the period from April 1990 to July 1995, the AUM Shinrikyo sect used both biological and chemical weapons on targets in Japan.
- They attempted four attacks using anthrax and six using botulinum toxin on various targets, including a U.S. naval base at Yokosuka.

The Anthrax Letters

- In 2001 anthrax-laden letters were sent to many politicians and other prominent individuals in the United States.
- The letters killed 5 people and sent 22 to the hospital.

Anti-Semites

- In 1984, federal agents raided an armed camp run by a white-supremacist, anti-Semitic group called The Covenant, The Sword, The Arm of the Lord.
- The group was alleged to have blown up a natural-gas pipeline and to have committed several crimes in 1983.
- After the group's surrender, authorities found 30 gallons of potassium cyanide with them.



ASSESSMENT

Bioweaponry has come to the forefront of media rhetoric as the lab leak theory for COVID-19 origin gains steam, one that suggests that the first SARS-Cov-19 microbes escaped the Wuhan lab.

Lab leakage has been linked to bioweaponry, especially, because of fear mongering and the bitter relations of China with the West, particularly, the USA. However, it must be unequivocally stated that there is no proof that coronavirus was being developed as a bioweapon, regardless of whether the lab leak theory is true or not. The Wuhan lab researches coronaviruses as part of pre-emptively developing cures to possible coronavirus related epidemics that may occur in the future. Hence, as reported, this was part of its routine functioning and not a plan to develop a coronavirus-based bioweapon.

Furthermore, bioweapons still pose a vital threat in the future, with state and non-state actors aiming to further their stock of available arms and weapons. Hence, it becomes imperative to implement proportionate levels of vigilance by international bodies to counter the same.

ABOUT THE AUTHOR

Pratham Arora: Is a Risk Intelligence Consultant at WoRisGo. He is currently an undergraduate at Ashoka University, studying Political Science, International Relations, and Philosophy. His primary areas of interest include Diplomacy, International Relations theory, and Conflict Analysis.