

# Biological Warfare and Bioterrorism

## Definition of Key Terms:

### Biological Warfare

Biological warfare is any organism that depends on toxins, from simple bacteria to snakes. Humans that engage in this form of battle benefit from these organs that produce a lot of toxins. Biological warfare takes place when a state actor uses biological weapons in its war arsenal. Agents of Biological warfare vary to a large degree in many areas. A few of these are the type of organism or toxin employed in a weapons system, lethality, length of incubation, infectiousness, stability, and ability to be treated with existing vaccines and medicine. Five different categories of biological agents could be weaponized and used in warfare or terrorism. These include several different organisms such as:

**Bacteria** - These are also known as prokaryotes which are unicellular organisms that cause diseases such as anthrax, cholera, tuberculosis, and plague

**Rickettsiae** - A genus of gram-negative, non-spore-forming, nonmotile bacteria called Rickettsia can take the shape of cocci, bacilli, or threads

**Viruses** - The unique pathogens are viruses as they are not considered living organisms due to the fact that they do not possess a nucleus nor do they have other characteristics such as a cell membrane etc. Yet they contain a protein coat and a layer of Deoxyribonucleic Acid or Ribonucleic Acid. Viruses lead to diseases such as Acquired Immune Deficiency Syndrome, Covid 19, and Influenza

**Fungi** - Infections that can be used as weapons against crops to spread illnesses like rice blast, cereal rust, wheat smut, and potato blight are examples of fungal pathogens.

**Toxins** - After being extracted from snakes, insects, spiders, marine life, plants, bacteria, fungi, and other toxin-producing animals, poisons can be weaponized. Such a toxin comes from the castor bean seed and is called ricin.

### Bioterrorism

Bioterrorism is described as an activity carried out by a non-state actor with the intent to further a political, ideological, or religious cause, or to otherwise seize control of the state that has been invaded. The phrase "bioterrorism" implies that it involves the intention to terrorize to the utmost, cause human casualties, as well as cause harm to much more. Interpol describes bioterrorism as the deliberate release of viruses, bacteria, toxins, or other harmful agents to cause illness or death in people, animals, or plants. As stated above bioterrorism is linked to non-state

actors, it indirectly refers to terror groups such as the Islamic State of Iraq and the Levant, The Haqqani Network, and Al Qaeda. Additionally, terrorist acts against modern agriculture could have a major negative impact on the economy and consumer trust. Agro bioterrorism, a subtype of agro-terrorism, is causing bio-terrorism to be common on a small scale as well.

## **Biological Weapons**

The United Nations Office for Disarmament Affairs describes biological weapons as objects that disseminate disease-causing organisms or toxins to harm or kill humans, animals, or plants. They typically have two components: a weaponized agent and a delivery mechanism. Biological weapons can be used for political assassinations, the contamination of livestock or agricultural products to cause food shortages and economic loss, the creation of environmental catastrophes, the introduction of widespread illness, fear, and mistrust among the public, in addition to strategic or tactical military applications.

### **Weaponized Agents**

It is possible to create biological weapons utilizing almost any disease-causing agent (such as bacteria, viruses, fungus, prions, or rickettsiae) or toxin (poisons derived from animals, plants, or microorganisms, or comparable chemicals generated synthetically). To make the agents better suited for widespread manufacture, storage, and distribution of weapons, they can be improved from their original state. Aflatoxin, anthrax, botulinum toxin, foot-and-mouth disease, glanders, plague, Q fever, rice blast, ricin, Rocky Mountain spotted fever, smallpox, and tularaemia are only a few examples of historical biological weapons programs.

### **Delivery Mechanism**

Delivery mechanisms for biological weapons can take many different shapes. In the past, biological weapons have been delivered using rockets, bombs, hand grenades, and missiles. Numerous programs also created spray tanks that could be installed on boats, vehicles, trucks, and airplanes. Additionally, there have been documented attempts to create a range of sprays, brushes, and injection systems, as well as ways to contaminate food and clothing, in order to carry out assassinations or sabotage operations.

### **Technological Advances**

Recent technological developments may make it more likely that non-state actors, such as individuals or terrorist organizations, may obtain or generate biological weapons, adding to

worries that states may develop or use them. The use of biological weapons by people and groups engaged in criminal activity or targeted killing, state-sponsored biological warfare, and the unintentional discharge of diseases from laboratories all occurred during the 20th century. False claims of the employment of biological weapons were also made, emphasizing how difficult it is to distinguish between naturally occurring sickness, accidents, and intentional usage.

## **History of Biological Warfare**

History traces back to 1500-1200 BCE when the earliest intentional use of biological weapons was documented. It has been recorded in the Hittites Text that victims of tularemia were driven into enemy lands, causing an epidemic. In 1346, the bodies of plagued Mongolian Warriors were thrown over the walls of the Crimean City of Kaffa. To this date, historians are not able to decide whether this was the reason behind the spread of the Black Death or not. In June 1763, a band of Native Americans besieged British-held Fort Pitt during the French and Indian War. During the siege, Henry Bouquet, the commander of Fort Pitt, gave his forces orders to remove smallpox-infected blankets from the hospital and deliver them to a Lenape delegation. In Ohio Country, an outbreak that reportedly started the previous spring may have killed up to 100 Native Americans between 1763 and 1764. Since outbreaks occurred on their own around every dozen years and the delegates were re-met later, it is unclear whether the smallpox was brought on by the Fort Pitt episode or if the virus was already present among the people of Delaware.

In the year 1914, the global community for the first time in history witnessed biological sabotage in the form of anthrax and glanders. This was done under the command of the Imperial German Government during World War I. It was then that the Geneva Protocol of 1925 prohibited the use of biological and chemical weapons. The British Ministry of Supply began a biological warfare program at Porton Down at the start of World War II, under the direction of the microbiologist Paul Fildes. Winston Churchill promoted the study, and soon tularemia, anthrax, brucellosis, and botulism toxins were successfully weaponized. Anthrax was found to be present on Gruinard Island in Scotland in particular during a series of thorough testing conducted over the course of the following 56 years. The UK never deployed the biological weapons it created for offensive purposes, but thanks to its program, a number of dangerous diseases were successfully weaponized and put into industrial production. Other countries had started their own biological weapons projects, most notably France and Japan.

The plague, brucellosis, tularemia, and later horse encephalomyelitis and vaccinia viruses were weaponized in Britain in the 1950s, but the experiment was abruptly discontinued in 1956. Anthrax, tularemia, brucellosis, Q fever, and other diseases were weaponized by the United States Army Biological Warfare Laboratories.

The offensive biological weapons program of the US was unilaterally terminated in 1969 by US President Richard Nixon, who only permitted scientific study for defensive measures. The discussions for a ban on biological warfare, which took place in Geneva between 1969 and 1972 at the United Nations Conference of the Committee on Disarmament, gained pace as a result of this decision. The Biological Weapons Convention, which was the result of these discussions and opened for signature on 10 April 1972 before being ratified on 26 March 1975, came into effect.

### **International Law:**

With the Geneva Protocol of 1925, which forbids the use of biological and chemical weapons but not their possession or development, international constraints on biological warfare were first put in place. Several nations expressed concerns about the Geneva Protocol's applicability and its use as a reprisal after it was ratified. These reservations meant that it was actually simply a "no-first-use" agreement. The Geneva Protocol is supplemented by the Biological Weapons Convention (BWC), which forbids the creation, manufacture, acquisition, transfer, stockpiling, and use of biological weapons. The BWC, which went into effect on March 26, 1975, was the first multilateral disarmament agreement to forbid the development of a specific class of WMDs. The treaty had 183 states as parties as of March 2021. The preamble of the BWC, which states that using biological weapons would be "repugnant to the conscience of mankind," is regarded as having established a strong worldwide norm against them. Due to weak institutional backing and the lack of a systematic verification regime to track compliance, the BWC's efficacy has been constrained. The Australia Group, a multilateral export control system made up of 43 nations, was founded in 1985 with the intention of halting the spread of chemical and biological weapons. All UN Member States are required to develop and implement appropriate legal and regulatory measures against the proliferation of chemical, biological, radiological, and nuclear weapons and their means of delivery, especially to prevent the spread of weapons of mass destruction to non-state actors, according to Resolution 1540 of the UN Security Council, which was passed in 2004. Another question arises when it comes to the ratification of the Biological Weapons Convention. Many countries justify themselves by stating that the convention has no clear accountability mechanism or is not enough detailed to be ratified.

### **Terror Links with Biological Warfare:**

In a study that offers new insight into the terrorist group's attempts to create a weapon of mass destruction, United Nations investigators come to the conclusion that the Islamic State exploited Iraqi detainees as human test subjects in tests with chemical and possibly biological weapons.

According to the report of a panel appointed by the U.N. Security Council to look into war crimes committed by the extremist group, the previously unreported experiments took place sometime after 2014, when the Islamic State seized control of Mosul and commandeered the city's main university as a research center for new kinds of weapons. The report stated that at least some of the detainees passed away.

The investigators looked into reports of inmates being exposed to nicotine and thallium, two highly deadly substances that have historically been used as rat poison. The Islamic State's efforts to weaponize chlorine and produce sulfur mustard, the chemical agent known as mustard gas that was used to murder and maim thousands of soldiers in World War I, are also being investigated by U.N. investigators.

Another example is the 1995 sarin gas attack inside the Tokyo subway by the Japanese apocalyptic cult Aum Shinrikyo. The widely publicized assault, which killed 13 people and hospitalized thousands, had been preceded by a series of failed botulism and anthrax assaults near the Imperial Palace, a Tokyo airport, and two U.S. military bases.

### **Covid 19 and Biological Warfare:**

More than 3.5 million people have died as a result of the coronavirus disease 2019 (COVID-19) epidemic to date. Misleading information that dispersed a planned effort to reduce fatalities has been blamed for several of these deaths. It's critical to identify the root of this destruction since it poses a concern for future pandemics. Although a natural zoonotic transmission to humans has been identified as the likely cause, the origins of the pandemic have been a topic of discussion since the beginning. However, there is still conjecture about viral bioweapons and lab breaches. The science and history of biological epidemics, as well as the indications of the use of biological weapons, provide evidence for the roots of the present pandemic. This information will lessen the damage. Our world has just been destroyed by one bacteria. Over 3.5 million individuals have already died as a result of COVID-19, which is caused by the severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2). In just one year, there were more than 85 million instances reported globally, and many people are curious as to how this happened and where the virus originated. The earliest reports in late 2019 stated that a zoonotic virus pandemic believed to have originated from an animal reservoir at a live-animal market was spreading from Wuhan, China. Scientists find it remarkable that there is still speculation that there is another party responsible. The public frequently questions what is true because there is so much false information out there. The virus's ancestry was the subject of wild conjecture from the beginning. The US Department of State summoned the Chinese ambassador in March 2020 in protest of comments made by a Chinese official who claimed that the US military had allegedly introduced the virus to Wuhan as a bioweapon. The virus was then linked to a failed Chinese

bioweapons program, according to a US lawmaker. According to Palestinian media, the US and Israel were using the SARS-CoV-2 virus as a biological weapon against China and Iran. Other US authorities believed that the virus originated from a Wuhan lab that was carrying out legitimate viral research since safety issues had already been discovered at this lab. Concern intensified as time went on after it was discovered that China was concealing the findings of a study into the causes of the epidemic. Attacks on contemporary research have occurred in China before. In late 2018, a Chinese biophysicist and two of his coworkers were charged with crimes in connection with the disclosure of baby gene editing. Alternative explanations for the origin of COVID-19 have been maintained by these concerns, which are largely based on rumors and conspiracy theories that spread swiftly through social media and are still impossible to disprove. The two most prevalent prevailing theories regarding the origins of SARS-CoV-2 are the virus as a bioweapon and the potential laboratory leak from legal research.

