

Forum: The Disarmament and International Security Committee

Issue: Measures to Prevent Biological Warfare

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Position: Deputy chairs of DISEC

Note to delegates:

This is the disarmament conference, and so resolutions proposed should be working towards limiting biological weapons, instead of advocating for their production. However, countries that may favour biological weapons programs (especially those that violate the Biological Weapons Convention of 1975) can take measures to defend/ justify their stance.

Introduction:

Biological warfare poses a significant threat to global security and stability, with the potential to cause devastating human, economic, and environmental consequences. These types of weapons are not considered conventional, as conventional weapons are mainly used for their explosive, kinetic, or incendiary effects. As nations have advanced scientifically, the capabilities to develop and deploy biological weapons have also evolved, which increases the urgency for robust preventive measures.

The 1925 Geneva Protocol and the 1972 Biological Weapons Convention classify offensive biological warfare in international conflicts as a war crime and specifically bans the development, production, acquisition, transfer, stockpiling, and use of biological weapons. However, the threat of bioterrorism arises as defensive biological research, known as 'Biodefence', for preventive or protective purposes is allowed under the BWC. Moreover, countries such as Egypt, Haiti, Chad, and Israel have yet to sign the treaties.

The COVID-19 pandemic illustrated the global community's vulnerability to biological threats. While natural outbreaks differ from deliberate attacks caused by humans, this emphasised the need for preparedness. Many countries, lacking the experience of facing such threats, have failed to effectively respond to such

pandemics, resulting in prolonged periods of time marked by widespread illness, economic disruption, and social unrest.

In summary, the potential for biological warfare presents severe risks that necessitate immediate and comprehensive measures. Addressing this threat involves preventing the development and use of biological weapons by any entity and strengthening global preparedness.

Definition of Key Terms:

1. **Biological Weapons:** Weapons consisting of living microorganisms (such as bacteria, fungi and viruses), or the toxins produced by them, released to deliberately cause harm through disease..
2. **Bioterrorism:** The intentional use of biological weapons to cause disease or death to humans, livestock, or crops as an act of terrorism.
3. **Pathogen:** A microorganism, usually a bacterium or virus, that can cause harmful diseases.
4. **Genetic modification:** The process of altering the genetic makeup of an organism, done indirectly and directly.
5. **CRISPR:** A type of DNA sequence, but also a technology that research scientists use to selectively modify the DNA of living organisms.
6. **Commodification:** The fact that something is treated or considered as a product that can be bought and sold.

Background Information

18th to 19th Century

Biological warfare continued, such as the distribution of smallpox-infected blankets to native Americans during the French and Indian War in June 1763, which is believed to have contributed to an outbreak that killed many. In the American Revolutionary War there were also rumors of biological warfare tactics, such as attempts to spread smallpox among enemy troops.

World War I and II

The development of germ theory and bacteriology in the early 20th century advanced knowledge. During World War I, Germany attempted biological sabotage using anthrax and glanders. By World War II, major powers had established extensive biological weapon programs. During the invasion of China, Japan's Unit 731, caused severe casualties.

Notably, Adolf Hitler was affected by the threat of biological and chemical warfare. Although Germany did not extensively deploy biological weapons, the fear of their use influenced strategic decisions and military planning.

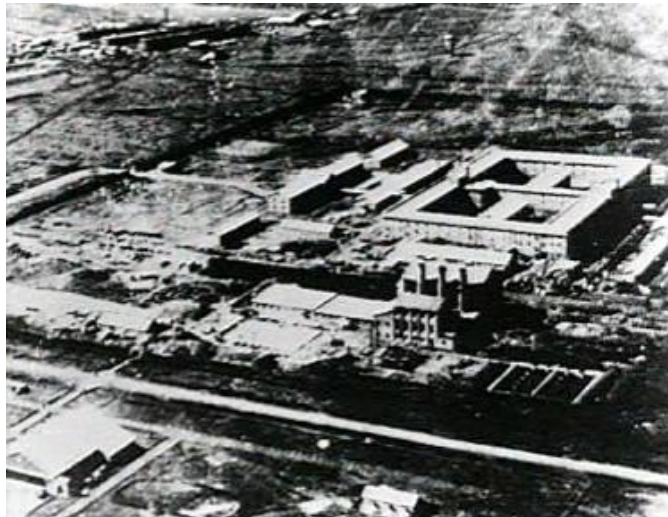


Fig 1: Photo of The Unit 731 complex (1933-1945)

Cold War

The Cold War era saw the continued development of biological weapons. Despite this, in 1969, President Richard Nixon halted the US offensive biological weapons program, which spurred international negotiations leading to the Biological Weapons Convention (BWC) in 1975. Despite this, the Soviet Union maintained and expanded its biological warfare capabilities, culminating in incidents like the 1979 anthrax leak in Sverdlovsk.

Impact of biological warfare

The impact of biological warfare has been profound. These weapons have contributed to widespread terror, being difficult to detect and can cause mass casualties. Despite these measures, the threat of bioterrorism and the potential misuse of modern biotechnology continue to pose significant global risks, highlighting the enduring impact of biological warfare on security and public health.

Current Situation

Most member states have already agreed to ban the development, production and employment of biological weapons during the 1975 BWC, with only a few states refusing to sign (Chad, Comoros, Djibouti, Eritrea, Israel, Kiribati, Micronesia, Namibia, South Sudan and Tuvalu). However, Biological weapons are being produced and acquired by terrorist groups. Using the COVID-19 outbreak as an example, countries were unprepared and slow to react.

How bioweapons are developed:

Currently, developing a biological weapon follows a general process: Once a suitable agent or pathogen is chosen (based on lethality and proliferation speed), it must be acquired through a biobank, either legally or through a black market, and multiplied, depending on the quantity of agent needed. Since biological agents degrade over time, the product must be stabilised, slowing their metabolism for stockpiling and moving through concentration filters. Finally, a method of delivery must be made for the agent. The easiest would be aerosols, tiny particles that can be suspended in the air and inhaled, infecting a person.

Commodification increasing accessibility

The commodification of scientific materials has stirred the possibility for terrorist groups to produce bio-weapons undetected. Online, open web platforms act as completely legal marketplaces for people to acquire samples of microorganisms, bio samples and specimens, normally used as a resource for researchers. Samples cost only a hundred to a

couple thousand dollars. There are also several black markets that traffic viruses and pathogens as well that could be used to develop biological weapons.

Genetic modification

CRISPR allows for the genetic modification of the dsDNA sequence of cells, and is being researched to prevent viral infection, either by developing vaccines, or causing the pathogen to lose its function. However, though still early in its research, CRISPR also has the potential to inflict harm. Viruses, with some modifications to their antigens, could render current vaccines less effective or even obsolete.

Major Parties Involved and Their Views

The United States of America

Though it has allegedly employed lethal biological and chemical weapons in Korea and even Cuba, today the United States has made clear that developing such weapons goes against its morals. Post 1969, its program was shifted to be more defensive in nature. It exploits the overlap between weapons and civilian applications of biological materials to conceal bioweapon research. More recently, Russia claims to have come across "US military-run biolabs" in Ukraine which they claim were used for the production of biological weapons. This accusation was rejected by the UN.

Al Qaeda

The group has been researching biological weapons since 1998. They have been able to isolate lethal anthrax, as well as botulinum toxin. Ricin, a plant material, has been used in several attacks against the United States. Terror cells in Germany, Britain, Spain, Italy and Türkiye were able to develop the toxins on their own, following instructions from the dark web. Al Qaeda's focus seems to be more driven towards chemical weapons due to their easier production while achieving similar effects.

North Korea

Currently the only nation the UN has assessed to have an active biological weapons program. North Korea has signed the Biological Weapons Convention of 1975, but failed to

provide updates for the BWC's Confidence-Building Measure since 1990. In 2015, an investigation was conducted which assessed that the Pyongyang Bio-technical Institute was a cover for a weaponized anthrax program. Indeed, North Korea is suspected to be in possession of weaponized anthrax, smallpox and cholera.

Russia

In its Post-Soviet era, Russia took measures to contain and destroy soviet weapons of mass destruction. The true extent of the "Biopreparat", the world's largest and most developed biological weapons program ever, was revealed, including its responsibility in several accidents. In 1992, Russian president Yeltsin declared the dissolution of its biological weapons research and closing of such facilities, but the full extent of compliance with this degree is mostly undocumented. The UN believes Russia still has biological offensive capabilities and is cause for concern.

Israel

Israel is not a signatory of the Biological Weapons Convention. The country has been, neither confirming nor denying possession of biological weapons. On the other hand, its biological weapon defence program is very developed, independently forming vaccines and antidotes against biological and chemical weapons as a response to regional threats. It maintains bioterrorism drills and runs simulations to test its response capabilities.

UN Involvement, Relevant Resolutions, Treaties and Events

Ever since its formation, the United Nations has addressed the pressing matter of all forms of weapons of mass destruction, including chemical and the more unconventional, biological weapons, due to their potential for high casualties. Its stalwart contribution to combating such risks has been the Biological Weapons Convention of 1975, with countries gathering to review it every 5 years.

- Geneva Protocol, 4 May to 17 June 1925: Formed by the UN's predecessor, the League of Nations. Prohibits the use of chemical and biological weapons in war.
- Biological Weapons Convention (BWC), 26 March 1975: a supplement to the Geneva Protocol, prohibiting the development, production, stockpiling, acquisition and retainment of such weapons.

Possible Solutions

To combat the threat of biological warfare, strengthening of international cooperation and information sharing is vital. Strengthening cooperation among nations, supported by international bodies like UNSC, OPCW, and WHO, could make a big difference. The Biological Weapons Convention (BWC) is an example, encouraging member states to exchange information. This could be expanded to mandatory information sharing on potential biological weapon trafficking and research activities. Moreover, after the discovery of the Al-Hakam Biochemical Plant in 1996, a major facility for producing biological weapons in Iraq, the United Nations Special Commission (UNSCOM) was established.

Enhancing Artificial intelligence and machine learning technologies in Biosecurity could greatly revolutionise biosecurity efforts. AI can analyse large datasets, enhancing early warning systems and response strategies. Currently, the Defense Advanced Research Projects Agency (DARPA) is funding research into AI and advanced detection technologies, including bio-detection sensors and data analysis tools. This could greatly benefit the efforts towards the disarmament of Biological weapons technologies.

Efforts to expand vaccination and protective measures could potentially play a critical role in mitigating the effects of a biological weapons attack. This includes not only developing new vaccines for emerging threats but also ensuring widespread availability and accessibility of existing vaccines and protective gear.



Fig 3 - US military personnel being injected by Anthrax Vaccine

The U.S government has initiated a vaccination program against anthrax for military personnel and is currently funding research for new vaccines against other biothreat agents. The increased funding proposed by then President of the United States, Bill Clinton, for

research on new vaccines and treatments reflects a commitment to enhancing protective measures against biological threats.

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