Committee: Disarmament and International Security Committee (GA1)

Issue: Restricting the use of anthrax as an agent of biological warfare

Student Officer: Marialena Petropoulou

Position: Chair

PERSONAL INTRODUCTION

Dear Delegates,

My name is Marialena Petropoulou-Botsiou, I am sixteen years old, and I am currently an 11th grade student at Athens College (HAEF). In this year's 5th ACG-MUN Conference I have the utmost honor to serve as the Chair of the Disarmament and International Security Committee (GA1).

This year's conference agenda revolves around Sustainable Development Goal 8 (SDG8) of the United Nations, namely "Decent Work and Economic Growth". This theme has become more crucial than ever during the global crisis of the COVID-19 pandemic. For the past two years, the international community has been faced with a severe disaster that has disrupted the balance amongst nations. The rapid outbreak of the Coronavirus has had a catastrophic impact on the economy and exacerbated issues in the employment sector. Conditions for workers worsened, opportunities were lost, and innovation was halted. In the Conference, you are called to examine and debate upon current issues that have arisen during the effort to achieve disarmament, with reference to the general theme of the Conference.

As the expert chair on the topic of "Restricting the use of anthrax as an agent of biological warfare" I will be helping you prepare for the Conference primarily by guiding your research and providing you with the necessary material in order to gain insight into the topic. This study guide will introduce you to the significance and the main aspects of the issue, it will explain the actions that have been conducted to tackle it and finally propose possible measures to approach it. I strongly suggest that you carefully read all the way through but remember that the study guide is only a first introduction to the matter. I highly recommend that you conduct your own research and thoroughly study your delegation's profile to understand its position on the matter. If you have any questions concerning the topic, you can contact me through my email address at marialenapb@icloud.com.

I am looking forward to meeting you at the ACG-MUN Conference,

Sincerely,

Marialena Petropoulou

TOPIC INTRODUCTION

Throughout contemporary history, societies have suffered severely from the prevalent threat of war. On national as well as international scales, opposing interests have often turned political groups against each other and led to the outbreak of conflict. During conflict, states have utilized deadly Weapons of Mass Destruction (WMD) to carry out violent attacks and suppress opposition. This phenomenon of warfare has resulted in considerable hostilities and losses that have had a catastrophic impact on individuals, states, and the international community.

During the past few decades, powerful states have been focusing on advancing their warfare capacities and preparing for the outbreak of a crisis. One of the most dangerous technological developments that has been created and utilized in certain conflicts are biological weapons. States and other political organizations have been employed with such technological advancements and executed attacks through the use of biological agents. Bacteria, viruses, and fungi are all examples of disease-causing microorganisms that have been used to harm or kill humans during war. Biological weapons are considered a major threat since they are easy to produce, spread quickly without the awareness of the target, and usually have a fatal outcome.

Specifically, the most common example of a biological agent used as warfare is anthrax. Anthrax, a dangerous infectious disease caused by bacteria known as Bacillus anthracis, can be spread either naturally from soil or through direct contact with infected animals and contaminated food products.[1] It has severe health implications, and, in some cases, it can lead to death. This technology has been employed in numerous conflicts since the first World War and has often led to mass casualties. As a disease that spreads rapidly and cannot be detected through human senses, it is considered an ideal weapon for war. During the 20th Century, multiple states established programs to produce anthrax and often experimented on innocent populations.

Although anthrax has revealed concerning implications and has been characterized as a serious threat, the international community has not effectively addressed the issue. The lack of appropriate international legislation and enforcement mechanisms has created loopholes that facilitate the production and use of anthrax in biological warfare. Due to its complexity and diversity, there are few effective treatments, hardly any prevention methods, and member states have been unable to implement effective measures to halt its use. While resolution-making, delegates must strive for realistic and proactive measures that combat every aspect of this multidimensional

[1] "What is Anthrax?" *Centers for Disease Control and Prevention*, 19 Nov. 2020, www.cdc.gov/anthrax/basics/index.html.

issue, while keeping in mind the diverse response it has received from member states.

DEFINITION OF KEY TERMS

Anthrax

"Anthrax is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as Bacillus anthracis"[2]

Biological Warfare

"Biological warfare is the deliberate use of disease-causing biological agents such as bacteria, virus, rickettsia, and fungi, or their toxins, to kill or incapacitate humans, animals, or plants as an act of war"[3]

Bioterrorism

"A biological attack, or bioterrorism, is the intentional release of viruses, bacteria, or other germs that can sicken or kill people, livestock, or crops"[4]

Warfare

"A conflict between opposing political groups involving hostilities of considerable duration and magnitude often including Weapons of Mass Destruction (WMD)"[5]

Weapons of Mass Destruction (WMD)

"A weapon of mass destruction is a nuclear, radiological, chemical, biological, or other device that has the capacity and intent to inflict harm on a large number of people"[6]

[2] What is anthrax? (2020, November 19). Centers for Disease Control and Prevention. https://www.cdc.gov/anthrax/basics/index.html
[3] Biological warfare. (n.d.). ScienceDirect.com | Science, health and medical journals, full text articles and books. https://www.sciencedirect.com/topics/medicine-and-dentistry/biological-warfare
[4] Anthrax attack detection & response | CDC. (2020, November 18). Centers for Disease Control and Prevention. https://www.cdc.gov/anthrax/bioterrorism/detect-respond.html.
[5] War | History, causes, types, meaning, examples, & facts. (n.d.). Encyclopedia Britannica. https://www.britannica.com/topic/war
[6] Weapons of mass destruction. (2021, November 30). Homeland Security. https://www.dhs.gov/topics/weapons-mass-destruction.

BACKGROUND INFORMATION

Technical Background

To understand the use and the effects of anthrax as a biological weapon, it is important to gain insight into its origin and composition. Anthrax is a highly infectious disease created by the bacterium Bacillus Anthracis. They are microorganisms that can be found in soil and often contaminate wild and farm grazing animals, like cattle, sheep, and goats. Anthrax can occur naturally in agricultural areas where the bacteria are observed. Agricultural workers that deal with products produced by infected animals, such as wool or bone, often suffer from anthrax outbreaks. Most anthrax epidemics have been observed in areas of sub-Saharan Africa, southern and eastern Europe, central and southwestern Asia, as well as South America and the Caribbean, where agricultural work is fairly common.

Anthrax can take various forms and scientists divide these into four categories. Firstly, the most common type is cutaneous anthrax. This disease enters the human body when people come in contact with infectious bacteria through open cuts or scrapes on their skin. Fortunately, cutaneous anthrax is a mild manifestation of these bacteria and can easily be detected and then treated with antibiotics. The second form of anthrax is gastrointestinal, and it can poison people who consume undercooked meat coming from infected animals. It is very rare and only a few cases have been observed in the United States. Nevertheless, it has a significant impact on human health and 20% to 60% of gastrointestinal anthrax cases are fatal. The third type of anthrax is called pulmonary, and it passes onto the human body through the respiratory system. People who handle wool and animal hides often contract pulmonary anthrax by inhaling it. As it passes through the respiratory tract, it can become extremely dangerous and lead to respiratory collapse. This type of anthrax has the highest mortality rate and approximately 92% of the cases result in death. Finally, a new type of anthrax that has been detected in the past few decades is injection anthrax. Drug users in northern Europe that inject heroin and other substances are usually susceptible to this disease. Although it is rare, injection anthrax spreads rapidly throughout the body and the blood and it is difficult to identify the infection and treat it with regular antibiotics.

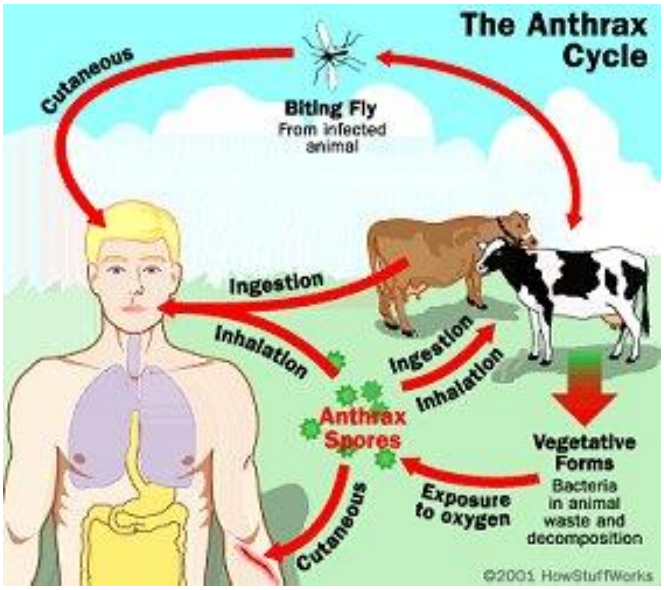

Figure 1: Transmission of the types of anthrax[7]

The effects of anthrax on Human Health

Anthrax cannot transmit from one person to another, but its effects on the infected individuals can be fatal. Each of the four aforementioned types of anthrax, manifests differently and it requires specific treatment. Symptoms and signs of infection appear relatively quickly but as the disease spreads rapidly throughout the body it may be difficult to handle these cases. Firstly, cutaneous anthrax is the most common and it comprises of 90% of cases worldwide. Infected individuals usually develop an itchy bump on their skin that resembles an insect bite and as the infection advances it becomes a painless wound with a black center. Cutaneous anthrax is easily treated and cured with antibiotics and less than 1% of the cases lead to death. Gastrointestinal anthrax affects the digestive system, and it causes nausea, abdominal pain and painful vomiting. Although it can be treated effectively, it is difficult to identify and diagnose at an early stage and consequently it has a higher mortality rate. Injection anthrax is more dangerous as it immediately contacts the blood. The area of injection develops an intense redness and significant swelling, and it usually leads to the shock and failure of multiple organs, a life-threatening response to infection called sepsis. Finally, inhalation anthrax is the only type that cannot be treated with antibiotics at any stage of the disease. It is gradually revealed through two stages, and it begins as a simple flu. Infected individuals face cold-like symptoms for the first hours or days which quickly lead to the collapse of the circulatory system. After the acute shock, the membranes and the fluid that cover and protect the brain and the spinal cord become inflated and this causes

[7] "Anthrax." Physiopedia, www.physio-pedia.com/Anthrax.

uncontrollable bleeding. This medical condition is called hemorrhagic meningitis and in 90% of the cases it results in death. It has become clear that anthrax has catastrophic impacts on human health, and it is imperative to combat it. Nevertheless, the international community has struggled in dealing with outbreaks of this disease as it mostly occurs in Less Economically Developed Countries (LEDCs) where health care facilities and veterinary health programs are very scarce and incapable of treating these cases. This issue has expanded even more since the development of bioterrorism and these bacteria have been deliberately used to infect political opposition during periods of war.

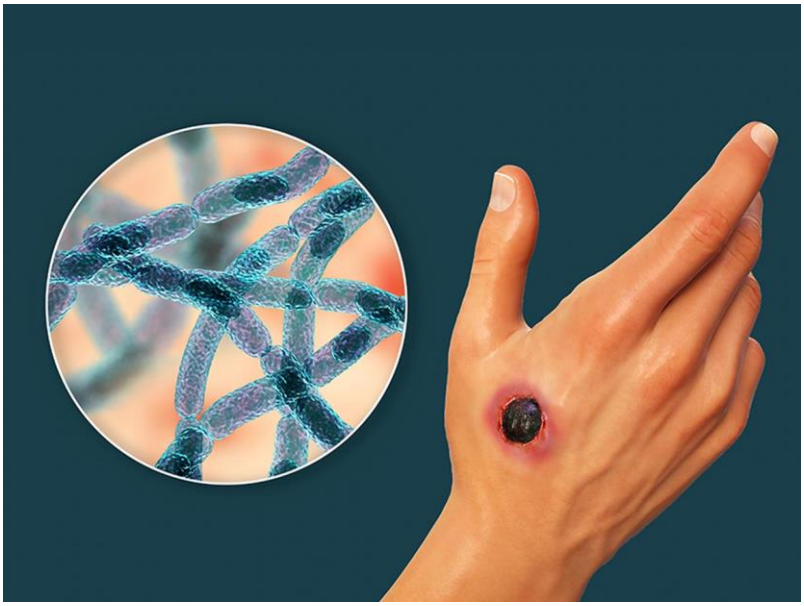

Figure 2: Skin symptoms of anthrax infection[8]

Prevention and Treatment of Anthrax Infection

Anthrax cases can be difficult to treat if diagnosed late and medical facilities around the world often lack the appropriate capacities to approach them. For that reason, scientists have focused more on developing effective vaccines to prevent the infection and halt the spread of the disease. In 1881, a prominent French scientist named Louis Pasteur, noticed the anthrax outbreaks in rural areas and began working on a vaccine. He managed to create a vaccine through weakened anthrax bacteria, and he conducted a famous experiment to identify the success of his invention. He assembled two groups of 25 farm animals each and injected the first with two doses of the vaccine and left the other group unvaccinated. In the following weeks, both groups contracted the infectious bacteria and only the vaccinated batch

[8] Bansal, Puru. "Symptoms, Causes and Risk Factors For Anthrax Bacterial Infection." Onlymyhealth, 1 July 2021, www.onlymyhealth.com/anthrax-bacterial-infection-symptoms-causes-risk-factors-1625143377.

survived. Focus shifted on the creation of anthrax vaccines during the 1940s when the intense global conflicts caused concern to political powers about the use of anthrax in biological warfare. A decade later, a pharmaceutical company that was working closely with the Army Chemical Corps, invented a vaccine suitable for humans that proved to be 92.5% effective in dealing with cutaneous anthrax. The final form of the vaccine, the Anthrax Vaccine Absorbed (AVA), was licensed in 1970 by the Food and Drug Administration (FDA) in the United States and it is the only prevention method that has been approved. The state encouraged mostly workers and laboratory scientists to get the vaccine since they had occupational risk of exposure to the illness in textile mills, agricultural farms and labs. Prevention is the most effective and efficient method to tackle the illness, yet there are ways to treat it if diagnosed early. The easiest and safest treatments are standards antibiotics such as ciprofloxacin (Cipro), doxycycline (Vibramycin) or levofloxacin.[9] Nevertheless, when anthrax cases develop into meningitis and respiratory, circulatory or intestinal collapse specific care is needed to ensure recovery.

Past Incidents

In the past century, technological advancements have facilitated the creation of Weapons of Mass Destruction and have allowed states and political groups to deploy them during periods of conflict. There have not been many cases where anthrax was used as an agent of biological warfare, yet their repercussions remain significant. Anthrax attacks were deliberately caused for the first time during the First World War. In the early decades of the 20th century, the Central Powers discovered the effects of anthrax and attempted to attack the Allies through international trade. Specifically, Germany infected animal livestock that was being sent to the Allied Powers with anthrax bacteria. The most well-known practice of this method was the Argentinian infection in 1917 and 1918, where contaminated food was traded to the opposing forces and led to the death of 200 mules. Fortunately, these attacks did not have a major impact on human populations since biological warfare was a novel idea and technological incapacities were unable to support the spread of the illness. Anthrax was used again in the 1940s during the Manchurian Occupation. After the end of WW1, Japan aggressively invaded the Chinese province of Manchuria in 1937 to obtain raw material and other resources for its industries. Within 6 years, Japan had acquired complete control over various Chinese regions, and it often committed war crimes such as anthrax attacks. In Manchuria, Japan developed anthrax production facilities and funded research on biological warfare. While producing

[9] Anthrax medication: Antibiotics, other, corticosteroids, antidotes, other, vaccines. (2020, February 19). Diseases & Conditions - Medscape Reference. https://emedicine.medscape.com/article/212127-medication.

infectious bacteria, Japanese forces used aircraft to spray them into civilian homes and affected at least eleven cities across China. Additionally, anthrax was utilized to contaminate prisoners with various diseases and approximately 10.000 prisoners were found dead as a result. This method ultimately led to the "Operation Cherry Blossoms at Night" which was an attack plan devised in 1945 by Shirō Ishii that aimed at attacking civilians in the United States, but it was cancelled.[10]

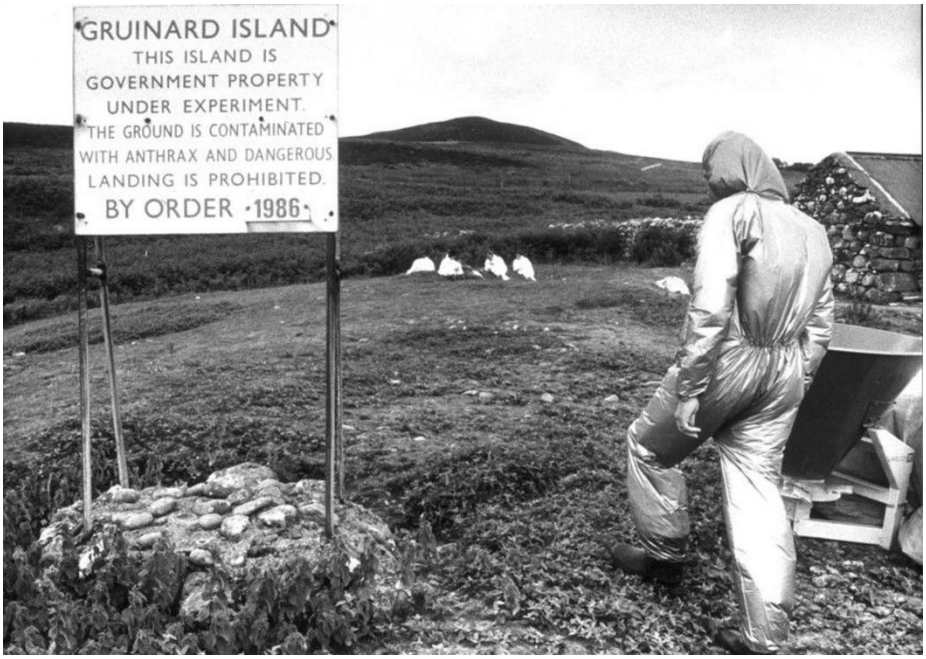

Figure 3: Decontamination of the Gruinard Island[11]

Anthrax attacks became more common after the outbreak of the Second World War. Once the war started, nations feared that Germany and its allies would launch a massive biowarfare attack, yet they never did. This time, anthrax was deployed by the military of the United Kingdom that used the island of Gruinard near the coast of Scotland to experiment with and test anthrax delivery systems. Although they never infected civilians or their enemies, the spores that landed on the island did not degrade and remained theoretically capable of infection for decades. Official attempts for decontamination began in 1979 and were finally concluded in 1987, while a total of 280 tons of formaldehyde and 2.000 tons of seawater were used to clear the island off the spores.[12] Possibly the largest use of anthrax was observed at the end of the 20th century in the USSR. In April and May of 1979, the city of

[10] Fishel, H. (2016, October 26). Operation cherry blossoms at night, the WW2 Japanese plan to wage biological warfare on the USA. WAR HISTORY ONLINE. https://www.warhistoryonline.com/world-war-ii/operation-cherry-blossoms-night.html?chrome=1.

[11] By The Newsroom. "The Scottish 'Anthrax Island' Poisoned by the Government." The Scotsman, 3 Apr. 2019, www.scotsman.com/regions/inverness-highlands-and-islands/scottish-anthrax-island-poisoned-government-633739.

[12] BBC news | Scotland | Britain's 'Anthrax island'. (2001, July 25). BBC News. https://news.bbc.co.uk/2/hi/uk_news/scotland/1457035.stm.

Sverdlovsk identified a peculiar outbreak of anthrax, but it was quickly shut down by authorities. Official reports of the event were published in 1980 by Western news and the international community was encouraged to intervene. According to Soviet articles, the outbreak was characterized by medical, veterinary, and legal journals as a natural epidemic that affected 96 individuals. Out of the 96 cases, 17 were diagnosed with cutaneous anthrax, while 79 suffered from gastrointestinal anthrax and ultimately 64 of those resulted in death. The Western powers became suspicious about the origins of the outbreak and began investigating the situation. Analysts speculated that the infections occurred within a 4 kilometers ratio near a Soviet military microbiology facility, due to an accidental airborne release of poisonous spores. After careful examination and research, they discovered that the outbreak did result from this facility, and it was deemed as the largest epidemic of inhalation anthrax. Nevertheless, Soviet authorities denied all allegations and claimed that individuals were infected by meat that contained anthrax spores. Decades later, the president of the Russian Federation Boris Yeltsin, revealed in 1991 that the source of the infection was the biologic facility that had not adjusted the air filters that morning and allowed spores to exit and spread.

Finally, the most recent case of anthrax attacks was detected during 2001 in the United States. Following September 11, two Senators and mass media agencies on the East Coast received letters containing a white powder with anthrax spores. The Senators did not realise the threat and the powder spread the spores through the air. The bacteria were breathed in, even by the postal facilities. This attack was conducted through inhalation anthrax and the first case was admitted to the hospital on October 4, 2001. Overall, 43 individuals were exposed to the spores while at least 10.000 people faced the risk of exposure. Out of the 43 people, 22 were infected with inhalation anthrax and five of them passed away. This was an unexpected attack that troubled the US authorities for years. The FBI investigated the situation for 7 years and sought the origins of the contaminated letters. Ultimately, they discovered that the spores came from a strain named Ames and a single batch called RMR-1029 that were produced in a specific research lab. The investigation was completed on February 19, 2010, and this use of anthrax as a biological weapon became known as “Amerithrax”.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

United Kingdom (UK)

The United Kingdom was one of the first states that experimented with biological warfare and the utilization of anthrax. During the Second World War, they used a tiny island near the Scottish coast called Gruinard Island as a testing site for their weapons. They placed 80 sheep on the island for experimental purposes and by deploying bombs filled with anthrax bacteria, they spread the disease all over the area. Consequently, every animal died from infection and scientists discovered for how long anthrax bacteria can remain harmful in the environment after their discharge. The island was deemed dangerous for decades and the United Kingdom, decided to undergo decontamination efforts in 1986. They killed all the remaining spores and after soaking the region in formaldehyde and seawater the island was disinfected. In 1990, it was officially confirmed safe for humans and since 2007 no sheep left from the test flock that on the island has been infected.

United States of America (USA)

The United States experimented with anthrax bioweapons during the 1940s as they prepared for enemy attacks. In 1942, the US launched its program for bioweapons research and production and began conducting anthrax experiments in testing sites near Mississippi and Utah. Over 5.000 bombs containing anthrax spores were produced in order to prepare an offensive attack against German hostilities. Although a German attack was never initiated, the US expanded it biological warfare programs during the Korean War of the 1950s. Besides the construction of biological agents, the program specialized in vaccine development and created special treatments to prevent troops from getting infected during war. The use of biological warfare was finally denounced in 1970 by US president Richard Nixon who prohibited the use of biological and chemical warfare.

Japan

Japan was also one of the big components in biological warfare during the interwar period and the beginning of WW2. As mentioned earlier, Japan researched and tested anthrax bacteria by releasing spores in the Japanese-occupied region of Manchuria. By spreading spore throughout the area, Japan exploited humans to try out biological weapons and managed to attack 11 Chinese cities from 1932 to 1945. Civilians and prisoners were severely infected and various cases inevitably resulted in death. After Japan stopped anthrax production at the end of WW2, they became involved in disarmament discussions and ratified the Biological Weapons Convention (BWC).

Iraq

During the Gulf War in 1991, Iraq developed one of the largest and most dangerous biological warfare programs. Iraq wanted to expand capacities and utilize anthrax spores in armed conflict by releasing them through aerial attacks. The United States sold batches of infectious bacteria to Iraq in 1980 and within the next decade Iraq launched its production program. From 1985 to 1991, they research and developed various biological agents such as anthrax and aflatoxin and utilized them in defensive attacks. Specifically, in "Operation Desert Storm" the Iraqi military deployed 200 bombs and 25 ballistic missiles containing anthrax and other agents.[13] Iraq lost the Gulf War and signed an agreement in 1991, yet the UN Special Commission on Iraq (UNSCOM) revealed in 1995 that the state continued to produce and stockpile an arsenal of biological weapons. The remaining surplus together with the production facilities in Iraq were finally destroyed by the UNSCOM during the 1990s. The Iraqi government has signed and ratified the BWC, yet there are suspicions for another biological warfare program as Saddam Hussein remains in power and declares a firm desire to produce WMD.

Russian Federation

Russia began experimenting with its first-generation biological agents, for example tularemia, epidemic typhus and more, during the 1920s. The initial program had a limited scope, but after the arms race of the Cold War became a threat, the Soviet Union expanded its production capacities during the 1950s and the 1960s. Although anthrax was never deployed during wartime and the Soviet Union ratified the BWC, they secretly resumed research and production of biological warfare. In 1972, they finalized the second-generation program of biowarfare named Bioprepara that employed 60.000 workers. A few years later, Western power discovered an accidental spread of anthrax bacteria in Sverdlovsk that killed 68 people. Although decades have passed, the Russian Federation has not actively participated or contributed to international discussions about disarmament of bioweapons. Moscow has not published a sufficient report declaring whether the agents have been destroyed or allocated to peaceful activities since 1992. As of 2017, Russia's status and implementation of the BWC remains unclear according to US State Department, while there are allegedly three remaining off-limit facilities in Kirov, Yekaterinburg and Sergiev Posad.

[13] Iraq's Biological Weapons: The Past as Future?, https://pubmed.ncbi.nlm.nih.gov/9244334/

United Nations Office for Disarmament Affairs (UNODA)

The UNODA was initially formed in January 1998 as part of the Secretary General's, Kofi Annan, report to the General Assembly (A/51/950) and it was named the Department for Disarmament Affairs. The UN body adopted its final form in 2007 and expanded its mandate. The organization aims at enabling discussions amongst member states and facilitating nuclear, chemical, and biological disarmament. The UNODA oversees and ensures international adherence to treaties and agreements as well as the non-proliferation of conventional weapons, such as landmines or arms. It allows states to negotiate disarmament programs and it encourages contribution and transparency in multilateral treaties like the Biological Weapons Convention (BWC).

Biological Weapons Convention Implementation Support Unit (ISU)

The ISU was created by one of the six UNODA branches stationed in Geneva and called the CD Secretariat and Conference Support Branch, which is responsible for the organization and maintenance of the multilateral forum for negotiation of the UNODA, the Conference on Disarmament (CD). It was officially formed in 2006 through the Sixth Review Conference and its purpose is to collaborate with the Convention and the Review Conferences and provide administrative help to their meetings. The ISU is an organ that specializes on work with the Biological Weapons Convention, and it aims at supporting and monitoring member states that have ratified it with its implementation. Additionally, it provides a forum for discussion and wishes to universalize the Convention and urge other signatories to ratify it. Its mandate is also focused on allowing states to negotiate and agree on Confidence-Building Measures for the treaties. The ISU's work and mandate were recently renewed by the Ninth Review Conference in 2021.

BLOCS EXPECTED

During the lobbying procedure of the conference, delegates are expected to form alliances and write resolutions. There is intense debate and division amongst member states concerning issues of disarmament, including anthrax weapons. Specifically, there are two main policies that define possible alliances on this topic.

Bloc A

The first bloc would be between states that have developed and/or utilized anthrax and have not implemented multilateral agreements. Namely, this alliance would consist of USA, Japan, Russia Federation, Iraq, Israel, Pakistan, India and their allies.

Bloc B

On the other hand, the second alliance would be formed by countries that are actively participating in disarmament efforts and have enforced stringent regulations to prevent the use of anthrax. Countries that are expected to belong in this alliance are the UK, France, Germany, Finland, most EU countries, and their allies.

TIMELINE OF EVENTS

Date	Description of event
1881	The first anthrax vaccine was developed by Louis Pasteur.
1918	Anthrax was used in WW1 for the infection of Argentinian livestock that traded with the allied forces.
17 June 1925	The Geneva Protocol that bans the use of chemical and biological weapons in war was established.
1942	The US launched its bioweapons program
1932-1945	The Japanese attacked at least 11 Chinese cities with anthrax through "Operation Cherry Blossoms at Night".
1970	The official Anthrax Vaccine Adsorbed (AVA) was licensed.
1970	President Nixon issued the end of the production of biological weapons in the United States
10 April 1972	The Biological Weapons Convention that prohibits the development of weapons, equipment, or delivery systems to

	disseminate of biological agents was formed.
April-May 1979	Unusual outbreak of anthrax was reported in the city of Sverdlovsk, USSR.
1987	The GA passed Resolution A/42/37 C. to investigate suspicious use of biochemical weapons.
January 1988	The United Nations Office for Disarmament Affairs (UNODA) was established.
2001	Senators in the US received letters filled with a white powder containing anthrax spores that came to be known as Amerithrax.
8 November 2002	The UNSC approved the implementation of Resolution 1441 that tackles the matter of Iraqi disarmament.
28 April 2004	The UN Security Council adopted Resolution 1540 that forbids non-state organizations to obtain WMDs.
2006	The Biological Weapons Convention Implementation Support Unit (ISU) was created.
December 2016	The UNSC adopted Resolution 2325 to guarantee the implementation of Resolution 1540.

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

Resolution A/42/37 C

On 30 November 1987, the General Assembly adopted Resolution A/42/37 C which acts as one of the key UNODA documents that serves the Secretary General's investigation mechanism (UNSGM) on chemical and biological warfare. The resolution calls upon the SG to conduct thorough investigations when an alleged report is filed by a Member State concerning the production and use of biological weapons by other state and non-state parties. Additionally, it emphasizes the need for proactive measures, and it requests that UN agencies collaborate with qualified professionals to create appropriate legal and technical guidelines.

Resolution 1540

The UN Security Council unanimously passed on 28 April 2004 Resolution 1540 under Chapter VII of the UN Charter, to combat the production and use of Weapons of Mass Destruction. The Resolution's mandate focuses on prohibiting non-state parties and organizations from obtaining and proliferating nuclear, biological, and chemical weapons for any purpose. This document plays an imperative role as it covered significant loopholes in international law by recognizing the possibility of terrorist groups acquiring such weaponry. The resolution outlines three main obligations that must be fulfilled: non-state actors are banned from acquiring WMD, member states must pass laws to criminalize the possession of WMD by non-state parties, and states are required to impose national regulations over WMD. Furthermore, resolution 1540 encourages More Economically Developed Countries (MEDCs) to provide financial and infrastructural assistance to other states that are unable to meet their obligations. To ensure that states adhere to the resolution, the UNSC publishes annual reports and has adopted Resolution 2325 since December 2016 to strengthen its implementation.

UN Security Council Resolution 1441

A resolution that was considered a catalyst for combatting the production of biological warfare is Resolution 1441. It was approved by the UNSC on 8 November 2002, and it dealt with the issue of Iraqi disarmament. The question of Iraq has been troubling the international community for decades and it remains the most current and pending example of biological warfare. The fifteen members sent a final warning to the Iraqi government about adhering to international laws on disarmament or facing repercussions. The purpose of the resolution was to reinforce the work of the UN Monitoring and Verification Commission (UNMOVIC), which was responsible for overseeing Iraq's disarmament and replaced the UNSCOM, by allowing them to conduct frequent investigations on their disarmament status. The resolution also

outlined three main requirements and concerns of the UNSC. Firstly, the document demands that Iraq delivers a transparent, accurate, and current report of its weapons program and its activities, within 30 days from the adoption of the resolution. Also, it declares that failure to abide by these requirements and cooperate with the authorities will be considered an additional material breach and further burden Iraq's position. Finally, the document repeats and reemphasizes that Iraq will face legal consequences due to its multiple violations of multilateral treaties.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

The international community has been ineffectively trying to combat the issue of disarmament and halt the production and use of nuclear, chemical, and biological weapons for decades. Although states have made progress towards ensuring a nuclear-free and chemical-free environment, they have disregarded the impact of biowarfare. As anthrax is a relatively complex technology that has not been utilized often for mass attacks, international organizations and member states are unaware of how to approach it. There are a few multilateral treaties by the United Nations that aim at finding a solution, yet international response remains unfruitful.

The Geneva Protocol

One of the most important actions taken by the international community to combat the misuse of anthrax as a biological weapon is the Geneva Protocol. Otherwise called "Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare" was drafted and adopted during a League of Nations conference in Geneva from 4 May 17 to June 1925.[14] The Protocol acts as the primary basis for contemporary laws and international treaties concerning chemical and biological weapons. The document was signed after political powers noticed the horrible consequences of WW1 as an effort to prevent the repetition of such atrocities. Although it strictly forbids the deployment of chemical or biological warfare, it does not require that production and stockpiling of these agents stop. Also, it allows states to respond aggressively if they have been attacked by another member state that has ignored its obligations and used such weaponry. The Geneva Protocol was the first step towards recognizing and dealing with the issue and it was officially implemented on 8 February 1928.

[14] https://www.un.org/disarmament/wmd/bio/1925-geneva-protocol/

The Biological Weapons Convention (BWC):

The Biological Weapons Convention (BWC) serves as a complementary asset to the Geneva Protocol and reinforces its mandate. The official "Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction" was drawn up by the Committee on Disarmament during a Conference in Geneva. It was first signed on 10 April 1972, and it was officially adopted on 26 March 1975.[15] Currently, 183 Member States have ratified it and 4 more have signed it. The BWC is the first multilateral agreement that successfully prohibits the construction, obtaining, stockpiling, and delivery of the entire WMD category of biological agents and biowarfare. The BWC imposes stronger legal repercussions on states that defy their obligations and states that any member which produces or acquires toxic agents is required to destroy the surplus within nine months from entry into the treaty. Additionally, states have the ability to file reports to the UNSCR if they are suspicious of the activity of other member states and they are also urged to participate in Confidence-Building Measures (CBMs). The convention is reviewed every five years to verify that signatories are abiding and develops CBMs, yet there is no implementation agency for it.

POSSIBLE SOLUTIONS

The United Nations and Member States must recognize the urgency and significance of the issue and effectively cooperate to expand international legislation and implementation and prevent the use of anthrax as a biological weapon.

Transparency in international agreements

As highlighted above, concrete steps have not been taken towards combatting biowarfare due to the lack of adherence to international agreements. Although most states have signed and ratified the Geneva Protocol and the BWC, there have been reported cases of member states violating their obligations by producing or stockpiling biological agents. In order to create effective and proactive measures, the international community must promote transparency and endorse participation in disarmament agreements. States could be urged to produce complete and accurate yearly reviews of their disarmament progress or their weapons production programs.

[15] "1925 Geneva Protocol – UNODA." Welcome to the United Nations, www.un.org/disarmament/wmd/bio/1925-geneva-protocol/

Participation and cooperation in disarmament treaties

It is equally important to increase participation in multilateral treaties. There are still Member States that are not part of the aforementioned agreements, and they inevitably hinder the fight for disarmament. Delegates must consider ways to enhance international cooperation and endorse more states to sign and ratify the existing legislation. This could be achieved through financial or political incentives that would persuade more states to join.

Adherence to resolutions through monitoring

In order to ensure transparency and abidance by international law, delegations must also consider the implementation of stricter guidelines and surveillance. The UN could create monitoring agents that oversee the states' application of the resolutions and the fulfillment of their obligations. This could be conducted through yearly investigations and thorough reports. To further advance this measure, the implementation of resolutions could be strengthened through the use of sanctions. In cases where Member States fail to abide by their responsibilities although they have the resources to do so, could face sanctions and exclusion from other agreements.

Creation and evaluation of legislation

Furthermore, it has become clear that one of the main issues that obstructs the disarmament of biological warfare is the lack of appropriate and diverse treaties. Globally, there are only two effective agreements put in place that are unfortunately unable to cover every aspect of this multidimensional matter. A feasible solution would be to reevaluate the existing laws and encourage the creation of new and inclusive legislation. The UN could assign international regulators to assess the BWC and the Geneva Protocol and verify that there are no possible loopholes that could allow the production and acquisition of biowarfare. This measure also includes the creation of an implementation agency for the BWC that would guarantee states are abiding and not undermining the convention's purpose.

Research and development on anthrax prevention and treatment

Finally, states have not completely blocked the production of anthrax as it is a complicated biological concept and there is insufficient research on it. International agencies such as World Bank, national governments or non-Governmental

institutions could allocate some of their reserved funds towards disarmament capacities or Research and Development on Anthrax, especially in LEDCs. Universities, research facilities or pharmaceutical companies could be financially supported to conduct thorough research on anthrax and its manifestation. This would allow stakeholders to develop effective prevention and treatment techniques that could be brought to the attention of the public and raise awareness on the issue. By integrating these technical measures in social or even military protocols, citizens, soldiers or other individuals that could be possibly subjected to an anthrax attack will know how to react and remain safe.

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