Forum: Disarmament Commission

Issue: Regulating the Creation, Distribution, and Use of Biological Weapons

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Introduction

Biological weapons have come to represent one of the most insidious threats to both international peace and security in the modern day and age. Unlike conventional weapons or nuclear arms, biological weapons can multiply exponentially without being detected, cross borders effortlessly, and cause indiscriminate suffering among civilian populations in afflicted areas. Advances in biotechnology, specifically synthetic biology and genetic engineering, have created a world in which lethal pathogens can be modified or even constructed wholly from scratch in laboratories at relatively low cost to the researching party. Although the 1972 Biological Weapons Convention (BWC) prohibits the development, production, acquisition, transfer, and stockpiling of all biological, chemical, and biotoxin weapons, the treaty lacks effective enforcement mechanisms. We live in an era where weapon technology is fast growing and regulations are unable to keep up. Labs are far too easy to access and this leads to an important question for all fo us to answer: how can the creation, distribution, and use of biological weapons be controlled while simultaneously preserving the benefits of legitimate biotechnology that can benefit humankind?

This issue involves global health and human survival. Biological weapons blur the line between warfare and public health crises. They threaten to overwhelm hospitals, destabilize economies, and incite total political chaos. An example of this is the recently encountered pandemic. COVID 19 had devastating global impact of one highly transmissible pathogen. In the case of intentional use of a potent biological weapon where international cooperation and support would be weakened, healthcare systems will collapse quickly and cause unprecedented ripple effects long into the future. The debate over biological weapons therefore requires consideration of not only disarmament policy, but also of international cooperation and epidemiology, development economics, and human rights.

Furthermore, the topic of bioweapons presents a unique dilemma of dual-use research. The same research conducted in the interest of developing vaccines and conducting genetic research to trace gene markers and progress towards cures for diseases like cancer can be applied to a military program that could decimate civilian populations and cause countless deaths. Moreover, in contrast to the CWC or OPCW which have strict verification contingencies in place, the BWC does not at present have a verification body assigned to it that monitors the following of the terms set in 1972. So, the system relies entirely on self-reporting on the part of the member states, and there is no regulatory body available to hold rogue nations accountable.

Figure 1: A map illustrating the signatory nations of the BWC, along with the status of the ratification of the treaty (Abhimedia)

Definition of Key Terms

Biological Weapon

These weapons use living organisms, such as viruses, bacteria, fungi, or toxins, to cause disease and death. Unlike chemical and nuclear weapons, they can multiply rapidly and spread once released.

Biological Weapons Convention (BWC)

A 1972 treaty that banned the development, production, and stockpiling of bioweapons which was ratified in 1975. The treaty is significant but limited as it lacks a verification, or enforcement, body.

Dual-use Research

Scientific research intended for beneficial purposes in civil welfare, such as vaccine development, but also exploitable for harmful purposes.

Synthetic Biology

The design and creation of new genetic material or organisms, which can create the risk of engineered pathogens being misused for hostile purposes.

Gain-of-Function Research

Research that alters existing organisms to increase transmissibility or lethality, which is controversial due to lab safety concerns.

Verification

Mechanisms in place to ensure compliance with treaties. The BWC is an example of a treaty that lacks verification, unlike nuclear agreements.

Non-State Actors

Groups such as but not limited to terrorist organizations or rogue labs that could pursue bioweapons outside state oversight.

Biosafety

Checks and balances to prevent accidental exposure or release of dangerous pathogens.

Biosecurity

Measures in place to protect against misuse of or intentional release of dangerous pathogens.

Confidence-Building Measures (CBMs)

Voluntary information-sharing under the BWC to improve transparency between states.

Weapons of Mass Destruction (WMDs)

Category of weapons that includes nuclear, chemical, and biological weapons due to their immense destructive potential.

Outbreak Surveillance Systems

International networks such as but not included to WHO's Global Outbreak Alert and Response Network (GOARN) that tracks and responds to disease outbreaks.

Verification Protocol (2001 Draft)

A failed attempt to create a verification system for the BWC, which was rejected mainly due to concerns relating to national sovereignty and espionage.

CBRN

An acronym for chemical, biological, radiological, and nuclear. These include material from nuclear fission or fusion, other radiological toxins, biological weapons causing infection or disease, and toxic chemicals that can cause poisoning.

Background

Historical Use of Biological Weapons

Mongols at Caffa (1346)

In 1346, during the siege of the Genoese port of Caffa in Crimea, the Mongolian forces reportedly used plague-infected corpses of their own dead as weapons by hurling them over the city walls to spread disease among defenders. As a landmark event in the history of biological weapons, Caffa illustrates three themes that prove to be central to this topic: clear military intent to use disease for strategic effect; a practical delivery method adapted from standard siege engines; and operational goals aimed at breaking resistance by spreading illness, disrupting public order, and forcing evacuation. The account attributed to Gabriele de'

Mussi describes deliberate contamination of a dense, trade-dependent city, showing how biological means can rapidly extend beyond combatants to civilians. Historically, Caffa marks a shift from small-scale biological tactics (such as poisoning wells) to city-wide spreading of a pathogen to achieve military goals. It also shows recurring features of biowarfare: once released, the disease is hard to contain; it can overwhelm basic health capacity; and it can spread further through refugee movements and seaborne trade. As part of the broader history of biological weapons, Caffa stands as a medieval precedent where a pathogen that was later identified as Yersinia pestis was used to secure military and political advantage with relatively low material investment but high human and economic cost.

WWII: Unit 731

From 1936 to 1945, Japan's Unit 731 operated a centralized, state-backed biological warfare program from Pingfang (near Harbin) with affiliated units across occupied China, aiming to develop, mass-produce, and prepare pathogenic agents for military effect. The program focused on plague, cholera, anthrax, typhoid, and similar organisms, scaling yield of the pathogens from laboratory to industrial capacity while conducting human experimentation to map the development of the disease, response to doses, transmission routes, and environmental resistance. Field activities combined dissemination, most notably the release of plague-infected fleas, with environmental contamination of wells, food, and surfaces, alongside aerosol and droplet trials intended to assess spread through the respiratory system. Documented operations during campaigns in Zhejiang and Hunan (1940–42) sought to degrade the Chinese military capacity, induce civilian panic, and burden both logistics and medical systems, illustrating a shift in the history of biological weapons from incidental or ad hoc use to a fully institutionalized, research-intensive capability integrated with strategic objectives. Postwar handling of the program's personnel and data, including limited accountability and intelligence transfers, further shaped global norm development, reinforcing prohibitions on development and stockpiling and informing contemporary emphasis on biosafety, biosecurity, and oversight of dual-use research within biological weapons governance.

Soviet Sverdlovsk anthrax Incident (1979)

In April 1979, an accidental release of Bacillus Anthracis, Anthrax, spores from a previously secret military microbiology facility in Sverdlovsk, modern day Russia, led to the deadliest documented airborne anthrax outbreak, encapsulating the risks inherent in state biological programs and the challenges of verification of compliance with treaties during the Cold War. The release, traced to an aerosol of spores escaping through a defective exhaust system after a lapse in procedural checks, produced a narrow downwind plume consistent with inhalation exposure; official Soviet press releases initially attributed cases to contaminated meat, showing the denial and the opacity surrounding secret work under the BWC. Subsequent Western intelligence analyses, investigative reconstructions, and post-Soviet interviews and site studies confirmed an airborne point source from a military facility often referred to as Compound 19, with cases clustered along the wind path and timelines aligning with a nighttime release in early April. The event is pivotal in the history of biological weapons because it demonstrates industrial-scale agent preparation

capability and highlights how biosafety failures, poor procedural controls, and secrecy can transform contained research into mass-casualty incidents; and highlights the importance of completely transparent outbreak investigation, compliance with biosafety/biosecurity practices, and international CBMs to support the BWC norms.

International Legal Frameworks

States always strive for regulation against biological warfare because unlike conventional weapons, biological weapons pose the inherent threat of uncontrollability. A pathogen can quickly cause a global pandemic with no care for national borders, which could cause harm to the attacking state as much as the target. This trait, along with the moral incorrectness towards using disease as a weapon, has motivated states to seek regulation against it.

1925 Geneva Protocol

Because of the horrors of chemical warfare in World War I, the 1925 Geneva Protocol was established and banned the use of both chemical and biological weapons in war. However, this was not highly effective because many signatory states, including major powers, stated that the protocol would only be binding in conflicts with other parties, and that they must reserve the right, in case of a biological attack against them, to retaliate in a likewise manner. Thus, it failed to truly prohibit the development, production, or possession of these weapons.

2001 Draft Verification Protocol

Recognizing the BWC's lack of enforcement, a group of states negotiated between the years of 1995 and 2001 to create a legally binding verification protocol to supplement the BWC and ensure compliance on the part of all states. This draft protocol proposed emphasis on investigations for suspected non compliance, managed by a novel internatinal institution, that was proposed to be formed. However, in 2001, the United States rejected this draft protocol, arguing that it would not only be ineffective at catching those non-compliant with laws, but also that it would risk the exposure of national security information. The collapse of these negotiations marked the last attempt at a verification protocol for the BWC.

The BWC's institutional weakness becomes further evident when compared to the Nuclear Non-Proliferation Treaty (NPT), backed by the the International Atomic Energy Agency (IAEA), and the Chemical Weapons Convention (CWC), which are enforced by the Organisation for the Prohibition of Chemical Weapons (OPCW), which holds power to hold countries in violation of the norms outlined in the treaties accountable. It exercises the authority to verify compliance and investigate suspected violations. In stark contrast, the BWC lacks any such dedicated implementing body, leaving it to be an authority-lacking treaty among the disarmament commission that relies solely CBMs and diplomatic pressure, without any verification or investigation into the compliance of any and all laws.

Modern Developments and Threats

Science has advanced at a pace that existing international law has failed to match. The BWC, negotiated in 1972, prohibits the development and possession of biological weapons and lacks an enforcement mechanism. Since then, biotechnology has transformed through automation, digitized genetic sequencing, and global data-sharing, all of which blur the boundaries between defensive research and offensive capability. As a result, the BWC no longer captures the complexities of modern bioengineering or the diversity of emerging biological threats.

Synthetic Biology and CRISPR

The emergence of synthetic biology and modern gene-editing tools such as CRISPR-Cas9 has revolutionized the accessibility of biological sciences. The research that once required state-level resources can now be accomplished in small, funded, laboratories or academic institutes. CRISPR's ability to modify genomes with precision unlocks revolutionary potential for medicine and agriculture in the form of vaccines and genetically modified organisms, yet it also enables the recreation or modification of dangerous pathogens. The dual-use dilemma is glaring here: the same technology that allows for vaccine designs could, if used with malicious intent, facilitate bioweapon development.

International regulation has not caught up. While the BWC covers "any microbial or biological agent," it does not specifically address synthetic materials, gene drives, or engineered viral pathogens. Critics have warned that the plummeting costs and increased accessibility of DNA synthesis and the proliferation of biological laboratories make oversight increasingly difficult. Without norms for screening genetic material orders or monitoring dual-use research, synthetic biology remains both a cornerstone of modern innovation and a significant biosecurity concern to all nations.

COVID-19 Lessons

The COVID-19 pandemic highlighted the fragility of global health systems and exposed gaps in international coordination. Beyond the human death toll, the crisis demonstrated how infectious disease outbreaks, whether natural or intentional, can destabilize economies, strain diplomacy, and fuel misinformation. The controversy surrounding where COVID originated highlights how biological events can rapidly become tools for political propaganda, decreasing trust between states and undermining confidence in international mechanisms such as the WHO.

For disarmament discussions, COVID-19 offered two clear lessons: the importance of transparent data-sharing and the need to strengthen readiness capacities under both public health and security frameworks. Efforts like the WHO's International Health Regulations (2005) and the Global Health Security Agenda show proportional relationship between outbreak response and biological weapons prevention. However, political disputes over accountability and access continue to prove how scientific and diplomatic processes can diverge in times of crisis.

Non-State Actors

The threat of non-state actors has also expanded as biotechnology becomes more accessible to private actors. When the BWC was drafted, its primary concern was state-led programs; today, risks include terrorist organizations, extremist networks, and even individual biohackers with access to some scientific data. In the 1990s, the Japanese cult Aum Shrinkyo attempted to culture anthrax and, though unsuccessful, this marked a turning point in bioweapon awareness. In recent years, concerns have shifted toward "garage biology" communities and do-it-yourself bioengineering kits, which have broadened public participation in synthetic biology, posing a potential biosecurity risk as this level of research becomes accessible to the public.

While most non-state activity remains legitimate research or education, the possibility of accidental or deliberate misuse has led to renewed calls for stronger domestic implementation of the BWC. Security analysts argue that national legislation, pathogen access controls, and engagement in biosafety norms are the most effective ways to prevent potential misuse, as international law cannot govern domestic actors.

Lab Safety and Inequality

Modern biological research is unevenly distributed, and disparities in biosafety standards present growing global risks. A handful of countries operate high-containment laboratories (BSL-4), capable of safely handling the world's most dangerous pathogens, while many developing states lack even basic biosecurity infrastructure. Accidents, data leaks, and weak containment practices can have international consequences, regardless of intent. The debate over gain-of-function has further exposed the tension between scientific advancement and global safety.

Efforts to close this gap include capacity-building programs under the EU's CBRN Action Plan, WHO biosafety training initiatives, and partnerships through the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. However, many LEDCs and moderately developed states argue that unequal access to technology and funding perpetuates dependency on international support rather than resilience. Reducing inequality in biosafety capability is increasingly viewed as essential to preventing future biological crises.

In conclusion, modern biological threats no longer fit the state-centric model envisioned in the 1970s. Regulation must evolve to address the convergence of three forces: rapid scientific innovation, the growing role of non-state actors, and uneven global capacities for biosafety. The future of biological disarmament depends on whether international law can adapt to technologies that outpace it, and whether cooperation can replace suspicion in governing a rapidly changing scientific landscape.

Major Parties Involved

The United States

The United States continues to play an influential role in shaping international policy on biological weapons because of both its scientific leadership and its political influence. While it ceased its offensive biological weapons program in 1969, its actions since then have significantly guided the development and interpretation of the BWC. One of the most consequential decisions was made in 2001, when Washington rejected the draft verification protocol that would enforce the contents of the convention, arguing that on-site inspections could expose classified national security intel and undermine the competitive nature of its biotechnology industry. This rejection reflected the consistent American stance: a strong support for nonproliferation norms, but reluctance to accept mechanisms that it views as intrusive or harmful to its sovereignty, especially impact on economic and defense matters.

Domestically, the United States has created one of the most extensive biodefense infrastructures globally. The Biological Weapons Anti-Terrorism Act of 1989 criminalized the development or possession of such weapons, while programs like Project BioShield and the National Biodefense Strategy have invested billions of dollars into vaccines, diagnostics, and countermeasures in the case of a bioweapon epidemic. These measures illustrate a dual approach in reinforcing international norms against biological weapons while prioritizing national defense and safeguarding sensitive research. As a result, the United States remains both a leading advocate of transparency and capacity-building and a cautious voice on verification.

Russian Federation

The Russian Federation remains central to discussions on biological weapons largely because of the Soviet Union's record of secret non-compliance with international norms. Although the USSR signed the BWC in 1972, it continued an elaborate covert program under the Biopreparat system where laboratories seemingly conducting agricultural research doubled as formidable bioweapon research facilities. The 1979 Sverdlovsk anthrax outbreak provided early evidence of this activity, and after the Cold War, testimony from defectors and subsequent investigative research confirmed that large-scale violations had taken place. This legacy continues to give way to distrust regarding Moscow's transparency.

Today, Russia emphasizes its commitment to the BWC and is one of the most vocal proponents of establishing a legally binding verification protocol. However, many states remain skeptics of this position, arguing that Russia simultaneously obstructed consensus at Review Conferences and has deflected attention from the same by alleging that Western biodefense laboratories mask offensive programs. Russia maintains advanced biological research and a strong biodefense infrastructure, yet the combination of historical opacity and limited external access to research facilities ensures that Russia remains both an essential and controversial participant in global biological weapons governance.

People's Republic of China

China's role in the biological weapons debate is molded by both its treaty commitments in the past and its growing influence as a global power. Beijing complied with the BWC in 1984 and has consistently affirmed its compliance with the same, framing itself as a trophy state in disarmament and international cooperation. However,

transparency once again remains an area of contention. Western states have raised countless concerns about limited freedom in Chinese reporting under the BWC's CBMs, while Beijing has countered by emphasizing its sovereignty and criticizing the U.S. biodefense programs as destabilizing.

In multilateral negotiations, China positions itself as a strong advocate for aiding the Global South, often aligning with the Non-Aligned Movement in calling for greater transfers of technology and international assistance. It supports the establishment of verification protocol but insists that it must balance security with scientific development and sovereignty of all nations.

Domestically, China has invested heavily in dual-use biotechnology, with initiatives such as its national biosafety law and expanding high-containment laboratories. These developments highlight China's dual position as a state that promotes the conceptualities of equity and cooperation, while simultaneously attracting a lot of international scrutiny over the secrecy of its biodefense and research programs.

European Union (EU)

The EU has emerged as one of the strongest collective groups of advocates for reinforcing the BWC and for promoting global biosafety and biosecurity laws. Unlike individual states, the EU acts through a shared position: one that stresses multilateralism, transparency, and the integration of arms controls in support of public health and safety for the benefit of all member states. Since 2006, the EU has provided consistent financial and technical support to the BWC through its Joint Actions, which have funded training programs, capacity-building projects, and assistance to those states lacking the resources to implement treaty obligations.

At Review Conferences, the EU delegation always pushes for the creation of a verification protocol and the enhancement of CBMs. It also highlights the overlap between disarmament and overall global health and security, arguing that stronger biosafety laws, improved disease surveillance, and better lab safety practices are essential for both compliance with the treaties and pandemic preparedness considering Covid-19's impact. EU member states coordinate through mechanisms such as the EU CBRN Action Plan, which considers biological risk. This stance positions the EU as a very consistent voice for structured, rules-based governance, even though it lacks the high leverage that other powers have.

Non-Aligned Movement (NAM)

The NAM represents over 120 states, and it is a crucial bloc in biological weapons negotiations because it amplifies the perspectives of the developing countries. NAM members are generally agreed in affirming their opposition to biological weapons and in supporting the BWC. However, their focus often differs from that of major powers where they stress equity and the right to peaceful use of all biotechnologies.

In BWC Review Conferences, the NAM has consistently called for binding commitments on international cooperation and technology transfer. Its delegations argue strongly that disparities in scientific and technological capacity and public health infrastructure place developing countries at a disadvantage unless wealthier states share

expertise and resources with the Global South. At the same time, NAM members have resisted proposals they perceive as disproportionately burdensome or likely to compromise their autonomy in exchange for economic benefits. Their emphasis on capacity-building and fairness has positioned the NAM as a counterweight to the agendas of Western states, ensuring that disarmament debates reflect development priorities and look at each issue through a highly multi-faceted perspective. Although the bloc does not always act in perfect sync, it remains a key force in shaping the broader agenda of biological disarmament.

World Health Organization (WHO)

While WHO is not a disarmament body, it plays an indispensable role in the global preventiuon of biowarfare risks by providing guidelines on lab biosafety and biosecurity. Its mandated to safeguard global health from mass spread diseases. It also develops international health regulations, and coordinates global disease surveillance through networks such as GOARN. These functions make it a critical actor in the prevention and mitigation of biological threats, even if it does not engage directly with arms control negotiations.

The organization has been most influential in linking public health preparedness with international security. During outbreaks such as SARS virus in 2003, H1N1 in 2009, and most recently COVID-19, the WHO demonstrated the need for coordinated reporting, transparent information-sharing, and rapid deployment of expertise in favor of developing a vaccine, all principles that are equally relevant to biological weapons governance. The WHO also provides assistance to states with limited health infrastructure, thereby reinforcing BWC's emphasis on cooperation between More Economically Developed Countries (MEDCs) and Less Economically Developed Countired (LEDCs). Its work ensures that debates over biological weapons are not confined to military or diplomatic circles but also include the perspective of humanitarian and preventive safety.

Timeline of Events

Date	Description of event
June 17, 1925	Signing of the Geneva Protocol that prohibited the use of chemical and biological weapons in war
~1936 to ~1945	Following their invasion of Manchuria, Japan conducted deadly biological warfare experiments on civilians through Unit 731
April 10, 1972	BWC opened for signature in London, Moscow, and Washington, D.C.
March 26, 1975	BWC comes into force following required ratifications
April 2, 1979	Sverdlovsk anthrax leak: accidental release of anthrax from a soviet research facility in Sverdlovsk, causing civilian deaths and demonstrating the risks of bioweapon programs.

July 25, 2001	United States of America rejects draft BWC verification protocol at Geneva negotiations
September 18, 2001	Anthrax letter attacks in America kill 5 by mailing anthrax-infected letters to civilians and Senators, highlighting weaknesses in biosecurity and spreading panic.
November 28-December 16, 2022	Ninth Review Conference of the BWC held in Geneva; state parties met but did **not** reach agreement on new verification mechanisms.

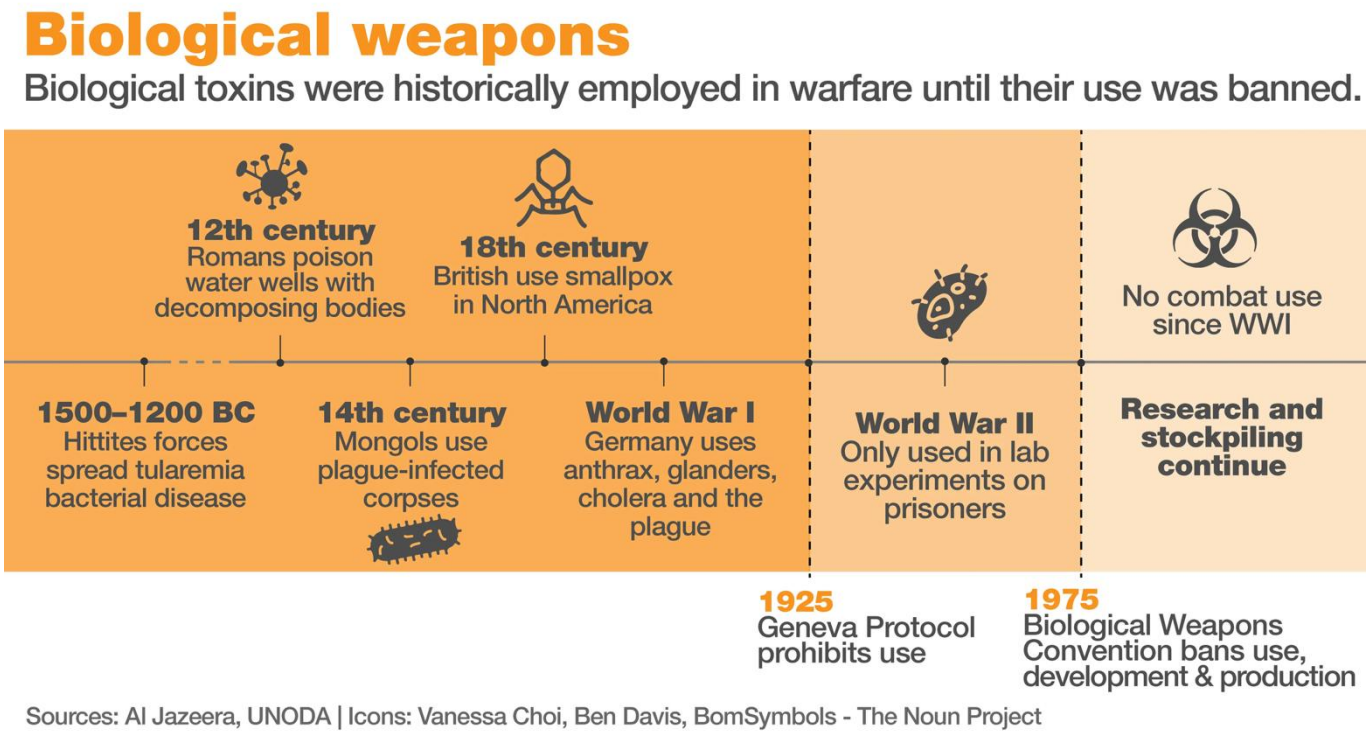

Figure 2: Timeline of use of biological weapons in warfare that depicts the storied history of biological warfare (Al Jazeera, UNODA)

Previous Attempts to Resolve the Issue

- Chemical and Bacteriological (Biological) Weapons and the Effects of Their Possible Use, 1 July 1969 **(A/7575/Rev.1)**
- Bacteriological (Biological) and Toxin Weapons and on Their Destruction, 9 Dec. 2024 **(A/RES/79/79)**
- Science and Technology under the Biological Weapons Convention, 2017 **(A/RES/72/28)**
- Use of nuclear or biological weapons by non-State actors, 2016 **(S/RES/2325)**

Possible Solutions

Stringent verification and compliance policies

Proposing an Independent Verification and Transparency Body (IVTB) under the UN framework could work. This mechanism would strengthen compliance through non-intrusive monitoring of bioweapon facilities and labs, voluntary data-sharing, and open scientific reporting, without compromising national security data. States could also invite international experts to review biosafety and biosecurity practices, fostering mutual trust and exchange. Regular review meetings under this system would ensure adaptability to new technologies and challenges. Participation could be rewarded with technical assistance and funding, creating incentives for cooperation while preserving sovereignty.

Improving Outbreak Surveillance

Rapid detection of emerging diseases is critical to preventing global health crises. WHO's GOARN program could be expanded through stable, multi-year funding and broader data collection partnerships, including with regional health agencies and non-state research institutions. AI model integration into this could also enhance early-warning systems by analyzing data sources such as reports in the media, trade flows, and environmental signals. To strengthen accountability, delegates could support revising the International Health Regulations (IHR) to include clear, confidential reporting protocols for epidemics of unexplained illness. Developing states should receive targeted technical assistance and logistical support to build national surveillance capacities and maintain consistent reporting. Such improvements would promote faster global responses while reinforcing trust in international health governance.

Capacity Building for Developing States

The weakest link in global biosecurity often is states that lack the infrastructure to secure the necessary biological materials or detect outbreaks in time to prevent large civilian casualties. Delegates should advocate for a Global Biosecurity Capacity Fund (GBCF), financed mainly by MEDCs and led by WHO exclusively. This fund would prioritize the construction and the certification of biosafe labs and ethics training of lab talent for all member states handling materials of a certain danger level.

Another aspect would be the development of national biosecurity laws within member states. What also needs attention by delegates is the promotion of equal access to manufacturing and usage of vaccines. One solution can be a subscription-based model, tying the investments directly to security outcomes, encouraging transparency and cooperation while ensuring that all member states have the capacity to protect both their populations and the global community from pandemic level outbreaks.

Oversight of Dual-use Research

Research in pioneering biotechnology carries inherent risks when technologies with legitimate purposes can also be misused. The international community should move toward establishing a Global Code of Conduct for Biosafety and Biosecurity (GCCBB), setting standards for the oversight of dual-use research of concern (DURC).

Institutions receiving international or public funding could be required to maintain review boards, including scientific, ethical, and bio-security experts, to evaluate proposed experiments and implement mitigation measures before approval for research. At the international level, states could support the creation of a risk-classification and pre-approval framework for experiments involving enhanced pathogens require a precautionary mechanism to ensure that potentially hazardous research is reviewed by an expert panel. This approach reduces the risk of misuse while promoting responsible innovation.

Regional and International Cooperation

A viable solution can include setting up regional coordination hubs that collaborate with the African Union (AU) or ASEAN. This can be an examplar for future biosecurity frameworks. These hubs would facilitate any and all information exchange, intelligence-sharing on biocrimes, and management of regional stockpiles, while also serving as accessible support centers for member states. At the international level, formal partnerships between WHO and the United Nations Office for Disarmament Affairs (UNODA) should be fortified to link public health and security with disarmament objectives. This cooperation would match outbreak response with treaty compliance efforts, ensuring that biological risks are addressed through both public health readiness and international security mechanisms. This dual approach would help bridge divides between health agencies and arms control bodies, fostering a more cohesive and responsive global system.

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