



**Massachusetts
Institute of
Technology**

**Model United Nations
Conference**

Background Guide

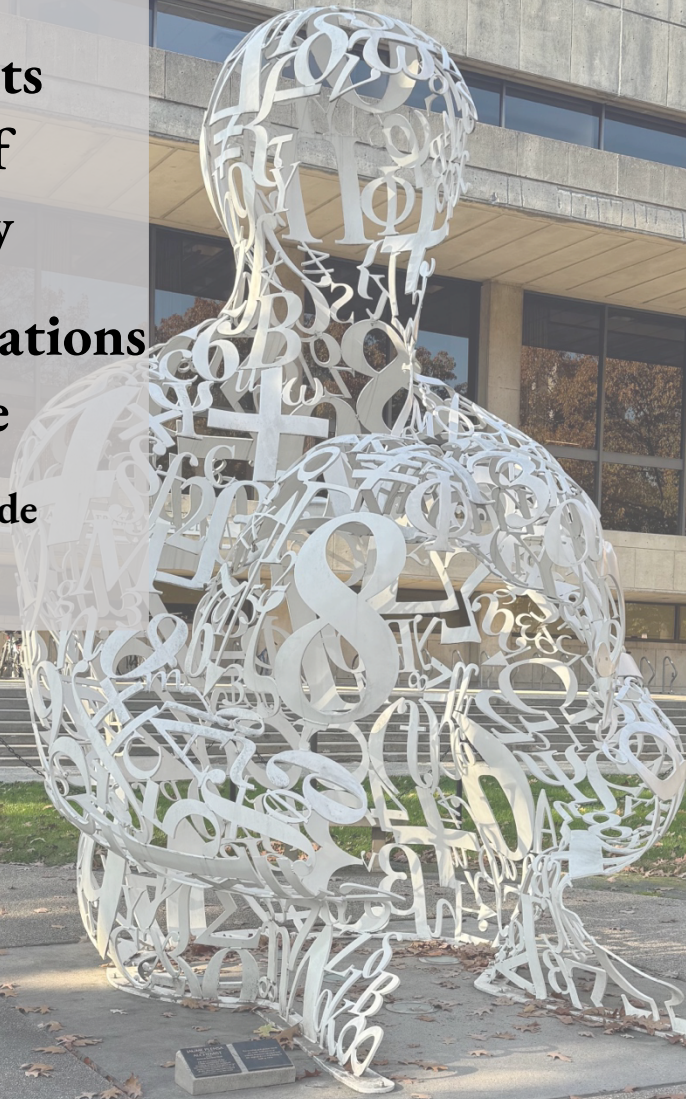


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Letter from the Secretary Generals

Dear Delegates,

It is with great pride and excitement that we formally invite you to the Massachusetts Institute of Technology's 16th annual Model United Nations Conference!

MITMUNC is a premier Model UN conference in which students from all over the world come together to solve the most pressing issues facing society today. This year's conference will be held during the weekend of Friday, February 9th through Sunday, February 11th, 2024, in-person.

At its core, MITMUNC is planned, organized, and directed by a passionate and ambitious team of MIT students that collectively form a diverse family of academic backgrounds and experiences. Our chairs and staff coordinate MITMUNC's committees from the ground up, posing questions and controversies that even the most experienced delegates will find challenging. Our dedicated Secretariat members complement the chairs and staff by overseeing all conference preparations, months in advance of the conference in order to ensure that our delegates walk away with one of the greatest experiences of their lives.

In previous years, MITMUNC delegates grappled with complicated human rights, economic, and environmental topics such as the Syrian Refugee crisis, argued the pros and cons of nuclear energy in the International Atomic Energy Agency, and even reacted to a flurry of assassinations witnessed in the Historical Committee! Attendees also enjoyed inspiring keynote addresses by Nazli Choucri, Professor of Political Science at MIT and leading researcher in international relations and cyber politics, as well as Richard B. Freeman, Faculty co-Director of the Labor and Worklife Program at the Harvard Law School. Delegates also enjoyed a well-deserved respite at the Delegate Dance social night.

We pride ourselves in hosting smaller committee sizes. This allows our attendees more freedom to contribute and distinguish themselves in their individual committee sessions. MITMUNC offers its attendees a truly unique opportunity to immerse themselves in a demanding

intellectual environment, exposed to the ideas of others and tasked to employ the art of negotiation to pass meaningful resolutions.

Having experienced MITMUNC as chairs, then as Secretariat members and Secretaries-General, we are both humbled and thrilled to guide MITMUNC into its best conference yet. I now invite you to explore our brand new website to learn more about our conference. Do not hesitate in contacting us should you encounter any doubts along the way. Best of luck in the path ahead!



Sincerely,

Your Secretary Generals: Jad Abou Ali and Maya Abiram

For further inquiries, do not hesitate to contact us at sg-mitmunc@mit.edu.

MITMUNC XVI 2024

Letter from the Chairs

Dear Delegates,

Welcome to the 16th MIT Model United Nations Conference and the Economic and Social Council Committee! We're your chairs, Haylea and (), and we have prepared two unique topics for you to address during the conference.

I'm Haylea, a freshman student studying Environmental Engineering. I have never chaired, but was involved in my state's Model UN during high school, and participated in both Impromptu and Extemporaneous Speaking competitions. I'm also a part of MIT's debate team! I'm very passionate about anything related to sustainability, especially in connection to policy and international affairs. I'm so excited to be one of your chairs and see what you all accomplish during the conference!

I'm Cervantes, a sophomore currently studying Biology and Business Finance. I'm a part of the leadership team for MITMUNC and look forward to working with all of you to have a fun and engaging committee. Feel free to ask me anything before or during the conference, I have a long history with MUN and want to help you feel comfortable and ready.

We are both looking forward to working with you all! The topics for this committee are securing economic resources to help fight water insecurities, and the role of artificial intelligence within the healthcare sector. With artificial intelligence and its uses as an increasingly controversial debate around the globe, and climate change worsening droughts and desertification in many countries, it is essential to develop knowledge on these issues and determine how we can proceed with them. We hope each one will allow you to learn—both from and with each other—and to engage critical thinking skills to propose your solutions.

We look forward to seeing you in February and wish you luck as you begin preparations!

Sincerely,

Your Chairs: Haylea Brock & Cervantes Pagan

For further inquiries, do not hesitate to contact us at ecosoc-mitmunc-2024@mit.edu.

MITMUNC XVI 2024



Committee Introduction

The United Nations Economic and Social Council (ECOSOC) was established in 1945 by the UN charter, and is one of the six main organs of the United Nations. It is dedicated to advancing sustainable development in all three of its UN-declared components: economic, social, and environmental.

ECOSOC serves as a forum for discussions, debates, and policy work on a range of issues, with a focus on achieving the Sustainable Development Goals (SDGs). The council collaborates with specialized agencies, non-governmental organizations, and various stakeholders to formulate policies that drive inclusive and equitable development.



Topic A: Securing Economic Resources to Fight Water Insecurity

I. Introduction

Water insecurity is a prevalent issue in modern society, exacerbated in many areas by the effects of climate change and socioeconomic inequalities. Approximately 2 billion people do not have access to safe drinking water, and around 3.6 billion people lack adequate sanitation services. While many factors can contribute to water insecurity, it often stems from scarcity—physical and economical—and a lack of infrastructure. Many efforts to fight water insecurity are stifled by inadequate financial resources, especially in areas where a lack of infrastructure is a primary barrier to clean water.

The United Nations Economic and Social Council recognizes the urgent need to address water insecurity through the mobilization of economic resources. This background guide aims to provide delegates with a comprehensive understanding of the issue and suggest further research avenues securing economic resources to combat water insecurity.

II. History

A. Physical Scarcity

There are a number of reasons for physical water scarcity, many of which involve environmental factors—such as severe drought or land desertification—or issues with demand outgrowing water supply. This scarcity is growing worse as global populations increase, droughts become more severe, and the strain on resources continues to outgrow existing infrastructure.

Climate change has greatly accelerated water scarcities, both through increased temperatures and prolonged drought seasons (driving an increase in water consumption) and an increase in desertification (severe degradation of land, often to a point where it can no longer hold water or adequately sustain life). Combined with rising populations, climate

change has also caused an increase in agricultural water use, as more water is needed to produce food for a growing public demand.

Desertification occurs due to unsustainable land practices and shifting climates, particularly in drylands areas. Desertification is common in areas where there is intense agriculture, which sometimes require overirrigation of soil to counteract the loss of natural soil nutrients and moisture. This overirrigation not only depletes water supplies but can cause over-salinization of the soil, damaging its capacity to hold moisture and tainting any water it does hold. This can cause substantial losses to water supplies and quality.

Physical scarcity is a large factor in water insecurity rates within dryer climates. While it is not as large of an issue in more temperate climates, it can still affect certain areas where there have been many unsustainable practices, or in the event of a severe drought.

B. Lack of Infrastructure

Regardless of physical water supply, a lack of infrastructure within a community can contribute to or even cause water scarcity. Lack of appropriate plumbing, safe filtration systems, or water transportation infrastructure can all play a role in water insecurity. In communities with physical water scarcity, lack of access to filtration systems can make it even harder to find safely potable water; similarly, a lack of transportation infrastructure could make it a hassle to obtain water from neighboring areas. Even in communities with a good supply of water, lack of appropriate infrastructure can make it difficult to safely obtain drinking water, or even to utilize that water source for daily activities.

Outdated infrastructure can also impede water security, especially in instances where breakages or malfunctions interrupt water services. Additionally, aging infrastructure can cause health concerns, especially when it is far overdue to be replaced. It can often be a struggle to fund water infrastructure updates, especially in the face of an overstressed public service sector and pressing demands from other infrastructure needs. Disparities in water infrastructure can—and often do—mirror existing issues with inequality. Residential areas with a lower socioeconomic average tend to suffer disproportionately from infrastructure-related water scarcity.

III. International Actions

A. UN Water and Water Conference

UN Water plays a pivotal role in coordinating the efforts of various United Nations entities working on water and sanitation issues. This collaborative platform ensures a holistic approach to addressing global water challenges. UN Water has multiple initiatives to fight water insecurity, many of which have been refocused on at this year's UN Water Conference in March. One initiative from UN Water, the Integrated Monitoring Initiative, gives nations a better toolset with which to monitor their water-related issues and compile the collected data. Additionally, UN Water connects countries to better technical information and resources, while also coordinating water-conservation efforts around the globe through a multitude of smaller organizations.

During the recent UN Water Conference—the first major UN water-related conference since 1977—a report was released detailing the severity of water insecurity around the globe, listing projected losses and suggesting prioritizations for water scarcity issues. The report listed concerns about increasing impacts of climate change on both areas affected by seasonal water scarcities and areas where water is naturally scarce. It also emphasized water partnerships that view water as a community resource and investment, in order to better protect water sources and develop systems to maintain them.

The UN Water Report remains a good reference point for the state of water security around the globe, as well as what key concerns are considered the highest priority in fighting water-related issues.

B. Individual Countries' Initiatives

Several countries have implemented initiatives aimed at addressing water insecurity, recognizing the critical importance of water for sustainable development. One notable example is India's National Rural Drinking Water Program (NRDWP), which focuses on providing safe and accessible drinking water to rural communities. NRDWP emphasizes

infrastructure development, water quality monitoring, and community participation. The program allocates significant financial resources to ensure the implementation of sustainable water supply projects in remote and underserved areas of the country.

China has also been proactive in fighting water insecurity through its South-to-North Water Diversion Project. This program involves redirecting water from the water-rich south to the water-scarce north, addressing regional disparities in water availability. The project requires substantial financial investments in infrastructure development, including canals, tunnels, and pumping stations.

In the Middle East, the United Arab Emirates has implemented the National Water Security Strategy 2036 to ensure sustainable water resources for future generations. This strategy involves substantial investments in desalination technologies, wastewater treatment, and smart water management systems. The UAE's approach underscores the importance of economic planning to enhance water security programs within arid regions.

IV. Projections and Implications

A. Food Insecurities

One of the primary consequences of water insecurity on food security is its direct impact on agriculture. Water scarcity limits the availability of water for irrigation, a critical component of modern agriculture. This, in turn, can lead to lower agricultural productivity, decreased food production, and potential food shortages. Regions heavily reliant on irrigation, such as parts of South Asia and the Middle East, face heightened risks as water scarcity exacerbates existing challenges in sustaining crop yields.

Another implication of water insecurity on food security relates to shifting agricultural patterns. As water becomes scarcer, farmers may need to adapt by altering the types of crops they cultivate or by implementing more water-efficient agricultural practices. Additionally, water scarcity can lead to increased competition for water resources between agriculture and other sectors, such as industry and urban areas. This competition can escalate food prices due to reduced supply and increased production costs. Vulnerable populations, particularly in developing countries, may face heightened

food insecurity, as they are disproportionately affected by price fluctuations and limited access to alternative food sources.

In regions where farmers rely extensively on irrigation to sustain crop growth, excessive water usage can lead to waterlogging, soil salinity, and desertification. Desertification further amplifies the risks to food security by reducing the available land for cultivation and displacing rural communities that depend on agriculture for their livelihoods.

B. Human Health

Water insecurity has profound implications for human health, as access to clean and safe water is fundamental to prevent waterborne diseases, ensure sanitation, and promote overall well-being. As water scarcity becomes more prevalent due to various factors such as climate change, population growth, and inadequate water management, the potential health impacts on communities are significant and multifaceted.

One of the most immediate and direct consequences of water insecurity is the increased risk of waterborne diseases. In regions where access to clean water is limited, communities are more susceptible to illnesses caused by waterborne pathogens. Contaminated water sources can lead to diseases like cholera, giardia, and typhoid fever, posing a serious threat to public health. Vulnerable populations, such as children and the elderly, are particularly at risk of suffering severe health consequences due to inadequate water quality.

Water scarcity also poses challenges to sanitation practices, further impacting human health. In situations where water is scarce, individuals may face difficulties in maintaining proper personal hygiene, and communities may struggle to implement effective sanitation measures. Lack of access to water for sanitation purposes can contribute to the spread of infectious diseases and undermine efforts to improve overall community health.

V. Conclusion

To conclude, while water insecurity is a multifaceted issue with many implications for human quality of life and safety, there are rarely unified approaches to fight the issue. Many

areas that suffer from disproportionate water security also suffer from other equitability issues, and work on water access can be hindered by the allocation of funds to other projects or a lack of funding to begin with. To form a unified initiative to fight water insecurity, there must be adequate resources provided to both fund and sustain any necessary programs.

VI. Questions to be Addressed

1. How can the UN ensure that efforts to fight water insecurity have adequate financial support?
2. What programs or policies might be useful in combating water scarcity?
3. What are the most common barriers to water access?
4. Who controls water infrastructure within nations, and what other concerns or responsibilities may they have?
5. How does water insecurity appear within your country? What policies has your country enacted to fight this issue?

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Topic B: Partnering AI and Medicine for Healthcare

I. Introduction

Artificial Intelligence is one of the many new technologies that the international community has been faced with over the past few decades. AI has expanded into various fields of the economy and continues and continues to influence the various aspects of our everyday lives. Healthcare is one of the most important sectors impacted by AI, with AI being the impetus of what could be one of the most monumental shifts in medicine, with both good and bad consequences expected to come as a result.

Because of the profound impact of AI on one of the most vital sectors of everyday life, it is of the utmost importance that the United Nations, specifically the Economic and Social Council, performs an in-depth and nuanced analysis of the current and projected future of AI, as well as agreeing on, and implementing, potential regulatory measures. Current action has been extremely limited in scope, and, as delegates, you will have the opportunity to change this, and guarantee the best results for all global citizens.

II. History

A. The (Brief) History of AI

Artificial Intelligence currently stands as one of the most promising and revolutionary technologies of the future. Much of today's talk about Artificial Intelligence comes from its relatively recent boom in accessibility and applicability through popular programs like Chat-GPT and AI image generation/editing. However, the story of AI is extremely nuanced and can be traced back decades.

The term Artificial Intelligence was first coined in 1956 by computer scientist John McCarthy during the Dartmouth Workshop. The conference discussed the idea of using a computer to replicate and emulate human intelligence, logic, and reasoning, officially marking the beginning of artificial intelligence as its own discipline.

Shortly after the conference in the late 1950s and 1960s, AI would see strong development and would branch out into various approaches and objectives. For instance, development was made in refining the "reasoning and search" algorithms used by most AI,

allowing for many of the billions of search pathways in these algorithms to be bypassed if deemed not likely to lead to a solution. Moreover, strong development was made in neural networks and language processing, paving the way for future important developments.

MIT stood, and continues to stand, as one of the leading initiators globally for AI development. During this period, MIT scientists were responsible for the development of so-called “micro worlds,” an important concept which allowed for the compartmentalization and simplification of the research process, with AI being scaled up from smaller and more well-defined systems to solve complex problems. Due to MIT’s leading role in early AI development, they were granted \$2.2 million from (what would become) DARPA.

AI development would rise and fall throughout the 1970s and 1980s, with two research droughts, known as the “AI-winter(s)” occurring in the 1970s and late 1980s/early 1990s. From 1993 on, however, AI development would remain consistent, due to ample funding and motivation. Novel machine learning techniques like deep learning have enabled AI’s current widespread adoption and popularity, leading to further funding being poured into the field.

B. AI in Healthcare - the Good and the Bad

AI has branched out and influenced almost all sectors of the economy, healthcare is no different. The primary objective of AI in healthcare is to dissect the relationship between the billions of pieces of clinical data and the patient outcomes related to it. To put it more simply, healthcare AI aims to take data and determine its relationship to the result. Because of this, AI healthcare programs have various different applications. These include drug development, diagnoses, development of treatment protocols, personalized medicine, and much more.

One of the most widespread applications of AI in healthcare are the AI chatbots for both patients and medical students. These chatbots are being widely used by people at home to more accurately self-diagnose their medical conditions without having to go through the hassle of going to the doctor’s office and paying the potential fees that come along with such a decision. Moreover, some medical schools across the United States have begun to use programs like ChatGPT to better train their students to “think like doctors,”

giving students additional resources that they can use in their studies, and even in their future profession as a consolation device.

However, with all of the benefits of AI in healthcare, there are various important risks associated with AI's increasing role. Firstly, having so much patient data centralized in one system/program can make healthcare companies (and by extension their patients) more vulnerable to data breaches. Moreover, future AI applications will affect the job market for doctors by potentially replacing various important roles. This could be due (in part) to how much trust people are putting into the conclusions drawn by online AI programs which could potentially be completely wrong. Lastly, healthcare AI has the potential to increase the disparity in living standards between developed and developing countries, further worsening the economic and social divide that already so prevalent and dangerous.

Some of these issues have been discussed in academic literature, however, there is no clear consensus, or solutions found in these works. As such, it is important for the international community to further discuss them and take action.

III. International Actions

A. Actions and Concerns at the UN

As already stated, international actions focused on AI have been extremely limited. Outside of ECOSOC in the UN, the High-Level Committee on Programmes (HLCP) created the inter-agency working group on AI (IAWG-AI), which is co-led by UNESCO and the International Telecommunication Union (ITU). This committee aims to bring together Artificial Intelligence experts to assist in the work of other agencies (specifically the HLCP and the UN System Chief Executives Board for Coordination) with action related to AI.

The UN General Assembly passed resolutions 72/242 and 73/17 which both recognized that technological change (including artificial intelligence) can have far-reaching positive and negative implications, necessitating the cooperation for better, and more sustainable development. The HLCP echoed this rhetoric's in its 35th-37th sessions,

addressing the need for further investment into “capacity building” in order to use AI in a manner that benefits all nations, including those that are at risk for falling behind due to their own internal issues. Most importantly, in April of 2019, the HLCP approved the United Nations system-wide strategic approach and the road map for supporting capacity development on artificial intelligence which consisted of commitments to support AI development in developing countries, broader stakeholder engagement and knowledge exchange within and outside of the UN, and ethical development and application of AI technologies for the public good.

The UN World Health Organization has also issued statements regarding AI, importantly discussing their role in public health. Their statement emphasizes the importance of keeping AI systems safe and effective, and encouraging their rapid availability. However, the WHO has not passed an official resolution regarding this, leaving room for further evaluation and discussion.

ECOSOC thus far has not passed resolutions expressly focused on artificial intelligence, though technological development has been the focus of some of their resolutions. For instance, ECOSOC adopted resolution 71/243 of the general assembly which focused on the role of frontier technologies in fulfilling the sustainable development goals (SDGs) of the UN. There have been numerous remarks by member states during ECOSOC conferences regarding AI, with certain industry experts being brought in to express the dangers that AI could pose, specifically regarding inequality amongst nations and individual groups of people.

As already stated, the actions by ECOSOC listed about do not specifically mention AI in healthcare, however, they outline a set of guidelines that must be followed when formulating resolutions focusing specifically on healthcare. This should be considered by delegates while formulating their own resolutions and can help guide the discussion of the committee.

B. Country Specific Actions

As with most issues, individual nations have had varied responses to the question of AI in healthcare. In the United States, the question of AI in healthcare is under the jurisdiction of the Food and Drug Administration (FDA). The administration currently only regulates some, but not all, of AI applications. The FDA views much of the AI driven technology as a medical device and regulates it as such. Because of this, the main concern of the regulators in the United States is the accuracy of the AI, or rather the lack thereof. The FDA aims to ensure that all patients are properly protected and therefore want to make sure that all AI is safe, which can only be accomplished through accurate AI provided diagnoses. Moreover, the FDA has a specific program for further research into AI healthcare. This program is known as the AI Program of the FDA's Center for Devices and Radiological Health (CDRH) and has thus far conducted extensive research ensuring that AI is safe and effective in its application. Overall, the regulation of AI driven healthcare in the United States is relatively robust due to its framework being already provided by the regulations for existing medical technologies alongside the specific programs focused on AI. However, more specific regulatory steps have been requested by activists. Most notably, they call for always informing patients whenever their care is being influenced by AI.

Unlike the United States, many other of the most technologically developed nations lack any proper regulation of AI in healthcare. For example, in Japan, there exists no regulatory hurdles to AI in heartcare, leaving the application of AI completely up to the healthcare provider. The providers are simply responsible for product liability in the case of an accident, which is clearly an extremely broad and unspecific regulation. Similar to Japan, The United Kingdom also lacks specific regulatory measures for dealing with AI healthcare applications. Instead, the regulation in the UK relies entirely on a patchwork of general legislation passed as early as 2002, with nothing more specific than general data and device protections. Lastly, Germany, another example of a well-developed nation, lacks regulation and follows a similar framework to the United Kingdom.

A vast majority of developing nations lack regulation for AI healthcare similar to the aforementioned countries. Because of this, it is clear that most nations do not have any form of specific regulation targeting AI's health application, highlighting the importance of its discussion on the international stage.

IV. Projections and Implications

A. Inequality

One of the biggest concerns highlighted by multiple bodies of the UN is the potential that AI advancement has for increasing the inequality and disparity between developed and developing nations. This is extremely worrisome in the case of healthcare; the difference in the quality of healthcare between the developing and developed world is already large enough, and AI has the potential to make this problem significantly worse. Firstly, many of the developing nations around the world have little to no research on AI. These nations expectedly focus many of their resources on other important areas, leaving AI, especially healthcare AI, completely overshadowed. This, alongside that fact that developed nations are pouring more funding and time than ever into AI, will ultimately lead to the disparity in healthcare quickly increasing. The UN continues to affirm that adequate access to healthcare is critical, meaning that this increasing inequality in such an important right is over particular concern.

Secondly, the increased prevalence of healthcare AI and its research in developed nations could lead to developing nations becoming further dependent on these developed nations for their basic needs. For instance, developed nations could choose to sell their AI healthcare to developing nations for high prices, or could alternatively lock them in deals for other concessions as a payment. This is clearly a slippery slope, and regulation should be implemented that discourages or prevents such outcomes from happening.

Many experts have also made clear that AI could lead to gender-based inequalities. Studies have demonstrated that AI often struggles to move with understanding and diagnosing women's health issues due to inadequate data and programming. As such,

further introducing AI in the place of other services could disproportionately negatively affect women.

These are just a few of the many inequalities that could be worsened through the introduction of further AI healthcare services. Delegates should consider all of these issues when discussing how to proceed in a resolution.

B. Privacy and Data

As stated earlier, the use of artificial intelligence in healthcare raises many significant concerns for patient privacy and data security. Artificial Intelligence, by nature, requires a set of data to learn and evolve. Without a broad set of test data provided to the AI script, it would be unable to formulate any significant or applicable calculations and conclusions. In the case of each specific healthcare AI, this comes in the form of data from hundreds of thousands, if not millions, of people globally. This becomes extremely concerning when considering that all of this data is harvested and sold to private entities for the purpose of AI development. In other words, AI healthcare development has encouraged companies to hoard and collect billions of pieces of private patient data and centralize it to a database.

This can be seen as a violation of patient privacy, but also as a security risk. With so much data in one obvious target, any data breaches and/or leaks could result in disastrous consequences for the millions of people apart of the database.

Delegates should strongly consider discussing how to protect the private information of patients across the world while still facilitating the advancement of artificial intelligence.

V. Conclusion

It is clear that AI has the potential to completely revolutionize the healthcare field. Whether it's formulating a diagnosis or assisting in the development of a new drug, AI has far reaching implications. However, with all good there comes a bad, with AI having the potential to exacerbate preexisting inequalities, threaten jobs, and lead to further

gender care gaps. This all necessitates international cooperation and regulation from the ECOSOC committee so that all global citizens can look forward to a better, more equal, and more safe tomorrow.

VI. Questions to be Addressed

- VII. Does having so much patient data centralized in one system/program can make healthcare companies (and by extension their patients) more vulnerable to data breaches?
- VIII. How should we regulate healthcare AI to prevent it from increasing inequality?
- IX. How will future AI applications will affect the job market for doctors by potentially replacing various important roles?
- X. How much of a role should the international community play in AI regulation as opposed to local (national) authorities?

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