

# GA3: Social, Cultural and Humanitarian

The Question of Combating the Spread of Infectious Diseases in the Country of Origin

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## Introduction

At this point of time, the question of combating the spread of infectious diseases in the country of origin is nothing new. With diseases like influenza, malaria, tuberculosis, SARS and most recently Covid-19, everyone experienced how impactful infectious diseases are to social, humanitarian, and cultural standpoints. As we observe the potential these diseases have in spreading around the world in such a short time, it raises the important question of how we can control the outbreaks in the country where they first emerge, hence why we landed the question of combating the spread of infectious diseases in the country of origin.

The rapid growth of globalization has definitely been a factor to consider for this issue. With the boost in travel, trade, and urbanization, it has accelerated the spread of infectious diseases over the past several decades. It is crucial to point out that this boost in travel, trade, and urbanization isn't a bad thing overall, it had a huge positive impact on the world in so many different aspects so it shouldn't be looked upon. But it is true that when looking at this topic specifically, they had some adverse effects.

Many recent epidemics that society experienced originated in developing countries. For example, HIV emanated from central Africa, influenza strains often originate in China, Zika issued from Uganda, and as we are all so familiar with, Covid-19 was first identified in China. The lack of developed healthcare infrastructure like routine disease surveillance, medical supplies, laboratories, and public health programs typically make poorer countries vulnerable to outbreaks that spread out of control. Moreover, developing countries lack expertise to respond correspondingly to the magnitude of the outbreaks which leaves them more open to the spread of diseases.

## Definition of Key Terms

### **Disease surveillance**

Systematic collection and analysis of data about disease outbreaks where they are monitored in order to establish patterns of the progression.

### **Contact tracing**

Identifying, monitoring, and assessing people who may have been contacted or exposed to disease, in order to prevent additional transmission.

### **Diagnostic testing**

Using lab test experiments to identify cases of infectious disease, in order to treat and isolate disease cases

**Public health infrastructure**

Government resources strictly dedicated to monitoring, preventing, and responding to health disease threats

**Medical countermeasures**

Vaccines, medications, and other treatments used in order to combat infectious diseases

**Border screening**

Checking travelers for signs of illness or disease when entering a country

**Pathogen**

A virus, bacterium, or other microorganism that can cause disease

**Pathogen genomics**

Application of genome sequencing technology to characterize and analyze pathogens for the purpose of informing investigations of infectious disease

**Sentinel surveillance**

Monitoring specific healthcare sites to identify unusual disease activity earlier than regular surveillance

**International sanitary regulations**

Binding regulations issued by WHO requiring countries to report and respond to specified public health risks

**Syndromic surveillance**

Using data like pharmacy sales or school absenteeism to identify unusual illness levels earlier than confirmed diagnoses

**Strategic national stockpile**

Reserves of medical supplies and countermeasures maintained by governments for emergency outbreaks

**Zoonotic diseases**

Diseases that infect between people and animals



## Background Information

As mentioned in the introduction, globalization is a big factor that accelerates the spread of infectious diseases. International air routes enable infected travelers to spread diseases through major cities worldwide in just the span of 36 hours. In comparison, the 1918 Spanish flu took months to spread between continents. The high volumes of trade and porous borders between some regions (like the EU) are responsible for the rapid spread of infectious disease across neighboring countries. Moreover, livestock trafficking and globalized food supply chains can disperse zoonotic diseases to new locations even before potential detection, as swine flu outbreaks have shown.

In developing countries, factors like growing megacities, imbalance of healthcare gaps between cities allow diseases to emerge and spread locally now. First, cities with inadequate sanitation are vulnerable to infectious diseases. Then, the urbanized megacities will be populated, hence the diseases will spread locally and internationally. Additionally, Weak surveillance systems, understaffed hospitals, limited labs delay detection in lower-income regions where many new threats arise.

### Current situation:

Covid-19 is a good example for delegates to visualize the process of the spread of infectious diseases in the country of origin. As Covid-19 is fairly recent, this can be used to apply the issues that can be resolved to combat the spread of infectious disease in the country of origin in the current day. From the origins of Covid-19 in Wuhan, China, the disease reached all continents in the span of 3 months. The delayed detection and response during the Wuhan outbreak led to Covid-19 spreading nationally within China, and the Lunar New Year travel happening simultaneously didn't help the case either. Looking back at the case, though China did share the viral disease once human transmission was confirmed, the country's initial minimization of the outbreak required an earlier global response. At the time, the demand for personal protective equipment, ventilators, oxygen, and vaccines was overwhelming for the supply, and China wasn't able to facilitate the spread of the disease due to their huge population spread around such big land. Covid-19 demonstrated the inequalities around equipment access between developing and developed regions. It is evident that economically strong countries outbid economically weak nations in vaccines and other medical equipment, which leads to developing countries to mitigate the spread of the disease. The economic impact of Covid-19 estimated to be \$26 trillion globally, which goes to show the costly disruptions from an uncontrolled spread.

With the whole world combating through Covid-19 and the WHO officially declaring “with great hope” an end to Covid-19 as a public health emergency in May of 2022, it would be appropriate to state that capacities have definitely improved in many countries, no matter if they are developed or developing. Eventually, developing countries have expanded their infectious disease surveillance laboratory networks and disease response capacities.

However, it is still a question if these systems are still sustained to this current day and if they can be maintained or even developed for combating the spread of future infectious diseases in each respective country. In the current time, contact tracing apps and data platforms have definitely been developed during its deployment during Covid-19, which creates new opportunities for rapid tracing of transmissions between countries. Through what has been shown through Covid-19, it has been revealed that national stockpile and pandemic response plans were inadequate for a long-duration crisis. In the current time, better mechanisms using predictive modeling and scenario planning is critical.

## Major Parties involved and their views

### **WHO(World Health Organization)**

A United Nations agency working on the coordination to the global response of health. Convenes experts, sets guidelines, and provides technical assistance to health problems.

### **CDC(Centers for Disease Control and Prevention)**

US public health agency conducting surveillance and development in domestic protection as well as global partnership.

### **China**

Origin of Covid-19 and faced criticism for delayed Covid response. Also is putting in efforts to be seen as a responsible global health leader through programs such as 'Healthy China 2030'

### **Bill & Melinda Gates Foundation**

Major funder of global health, especially with neglected diseases. Main advocacy is towards innovation for health equity.

### **Africa CDC (Africa Centres for Disease Control and Prevention)**

Focus on strengthening African region outbreak response and self-reliance for Africa

### **CEPI(Coalition for Epidemic Preparedness Innovations)**

Multi-stakeholder vaccine development funder for future diseases and aims for speed, effective, safe vaccine access.

### **MSF(Médecins Sans Frontières)/Red Cross**

Major NGOs providing humanitarian medical aid for disease outbreaks for vulnerable communities.

### **EcoHealth Alliance**

Global nonprofit conducting research on the relationship between human, animal, and environmental health.

### Gavi, The Vaccine Alliance

Public-private global health partnership funding vaccine procurement and delivery for developing nations. Gavi, The Vaccine Alliance mostly focuses on equitable access and logistics concerning vaccine access.

## Timeline of Relevant Events

Date	Description
1851 July 23	<p><b>International Sanitary Conference in Paris</b></p> <p>This conference brought 14 nations together to discuss quarantine regulations for cholera, plague, and yellow fever. However, as this was the first conference, progress was relatively slow to resolving the issues.</p>
1897 February 16	<p><b>Venice Sanitary Conference</b></p> <p>This was the tenth International Sanitary Conference and was proposed by Austria-Hungary. This conference focused on discussions about the plague, which concerned nations in Europe. This is when countries felt the need for shared international data on disease origins and matched patterns to combat the spread of infectious diseases.</p>
1948 April 7	<p><b>Establishment of WHO (World Health Organization)</b></p> <p>As the WHO was established, it was given authority to coordinate international response to disease outbreaks in the International Health Regulations.</p>
1969	<p><b>IHR(International Health Regulations)</b></p> <p>The IHR was first adopted and passed by the World Health Assembly. The aim of this was to “to prevent, protect against, control, and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks and that avoid unnecessary interference with international traffic and trade.” However, compliance to countries reporting certain disease outbreaks was voluntary, which resulted in delayed reporting.</p>

<p>1981 June 5</p>	<p><b>First outbreak of HIV/AIDS</b>          As of 2022, around 100 million people have been confirmed to have HIV or AIDS, and 39 million people are living with HIV with tens of millions dead due to the virus. This outbreak further revealed further gaps in global surveillance and coordination where wealthy nations pursued individual solutions rather than a collaborative resolution, which left developing countries vulnerable.</p>
<p>2000</p>	<p><b>GOARN(Global Outbreak Alert and Response Network)</b>          GOARN was WHO’s partnership that connected over 200 technical institutions, laboratories, public health institutions, and NGOs to work together to resolve outbreak detection and response across borders.</p>
<p>2002 November</p>	<p><b>SARS outbreak</b>          The 2002-2004 SARS outbreak was a respiratory syndrome coronavirus. It originated from Guangdong, China and caused over 750 deaths from the 8000 infected people from over 30 countries.</p>
<p>2005</p>	<p><b>New WHO authority</b>          WHO was given new authority by the IHR to access outbreak information from state parties, coordinate international response measures, and officially declare public health emergencies.</p>
<p>2009 June</p>	<p><b>Influenza A (H1N1)</b>          H1N1 was also the Swiss flu estimated at 284,000 deaths around the world. The significance of this pandemic was that it enhanced global microbiology laboratories to share genetic sequences. This sped up vaccine production and development.</p>
<p>2013 December</p>	<p><b>West Africa Ebola virus</b>          The West Africa Ebola virus infected over 25,000 people, and thought it was rare to catch, it was very severe.</p>



2015 October	<p><b>R&amp;D Blueprint</b> WHO develops the R&amp;D Blueprint as a global strategy to prioritize research for the response for a potential spread of infectious disease.</p>
2020 March 12	<p><b>Lockdown of Covid</b> Lockdown for Covid started in Wuhan, China as the virus spread globally.</p>
2022 May 6	<p><b>Monkeypox outbreak</b> The virus was confirmed in May 2022, and the majority of cases were found in the United Kingdom with a patient that had a recent travel history from Nigeria.</p>

## Related UN Treaties and Events

- **International Sanitary Conferences(1851-1903)**

The International Sanitary Conferences were a series of 14 conferences held in order to standardize international quarantine regulations in preparation for the spread of infectious diseases. These conferences had a big influence in the formation of the WHO in 1948. It was initially attempting to resolve the cholera, plague, and yellow fever.

- **Pan American Sanitary Bureau(1902)**

The Pan American Sanitary Bureau(PASB) is the administrative department of the Pan American Health Organization(PAHO), and it provides technical support to PAHO member states. Most notably, in 1949, the PAHO and WHO signed an agreement that made PAHO the American Regional Office(AMRO).

- **International Health Regulations**

This expanded WHO’s authority over collecting outbreak information and their obligations of handling public health events and emergencies that have the potential to cross borders

- **Access to COVID-19 Tools Accelerator(COVAX facility)**

This was a global collaboration to accelerate the development, production, and access to Covid-19 equipment like vaccines, treatments, and tests.

- **UN Research Roadmap for Covid-19 Recovery**

The UN research roadmap for Covid-19 recovery was to guide researcher investments for a sustainable post-covid world that can combat the spread of infectious diseases in the country of origin. Its focus was to build resilience and promote that sustainable development. Regarding the development, it is through global collaboration of policymakers and UN entities in priorities spanning from social, environmental, social, and health perspectives.

## Previous Attempts to solve the issue

The whole creation and the actions that the International Sanitary Conferences attempted was to solve the issue of combating the spread of infectious diseases in the country of origin. The whole point of the conferences was to standardize quarantine procedures for cholera, plague, and yellow fever. This required the medical inspection of ships and pilgrimage routes. This led to the coordination between European nations and the Ottoman empire at the time on infectious disease control. This is when the notion of globalization started to be associated with combating the spread of infectious diseases in the country of origin. Especially the required medical inspection of ships was a notable attempt for delegates to observe. With increased trade volume at that time, that opened up vulnerability to the spread of diseases. Thus, medical inspections of ships arriving at ports to be inspected by health authorities to check for infectious diseases was a new idea to tackle the growing trend of globalization back then.

Moreover, providing the COVAX facility in the Covid-19 period was a notable attempt. With the attempt being co-led by CEPI, GAVI, and WHO, the distribution mechanism allowed equitable access to Covid-19 vaccines, mostly in developing countries. This attempt resulted in vaccines being responsible for 75% of the deaths averted. Which shows a new approach to how collaboration is effectively used to resolve a critical issue.

## Possible Solutions

Regarding possible solutions of this issue, there are many different approaches that can be used by delegates to successfully create solutions. There simply is no wrong answer to approach this. However, this section of the chair report will look at how to utilize new trends and growing industries in order to combat the spread of infectious diseases in the country of origin.

The first is to create a global pathogen surveillance network that combines environmental monitoring, sequencing data, and artificial intelligence to identify novel outbreak trends and transmission patterns. This would enhance the early warning technology that countries have and with such a big database there is with working with many countries, the accuracy of AI will be able to enhance how this issue is approached.

Second, a global network of certified rapid response teams having meetings or conferences to discuss the spread of infectious diseases would be helpful. With the importance of diversity being a key factor, it is crucial to resolve this issue based on different cultural backgrounds. In these meetings, people from different cultures with different expertise in things like epidemiology, data integration, social science, and lab science can create innovative solutions and produce rapid responses.

Third, it would be good to standardize or specify common capabilities, incentives like trade terms, or transparency standards according to each country. Though this may seem vague, this solution will be able to narrow down the possibilities of what can happen regarding the spread of infectious diseases, and that is up to the delegates to specify down to as the policies for each representative country is different.

## Suggested Reading

<https://www.worldbank.org/en/topic/infectiousdiseases>

This source would be helpful for getting a broad idea of the landscape this topic has to bring to delegates

<https://ieeexplore.ieee.org/abstract/document/9102306>

This source explores how technology can be used as a tool to solve this issue. There is no need to read all the contents as some parts (such as the models) aren't necessarily to this debate, but delegates are welcome to if they wish.

<https://royalsocietypublishing.org/doi/full/10.1098/rsif.2008.0524>

This source talks about how clustering or population has an influence on this topic and from this, delegates will be able to create effective resolutions regarding the spread of infectious diseases in urban cities.

<https://www.mdpi.com/2078-1547/12/1/3>

This source goes in depth about Covid-19 and its influence on this topic. There isn't need to fully understand the equations introduced in the source, but it would be helpful to just get a broad idea of what these representations are implying.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8607141/>

This source talks about how data science is applied in this topic, and hence would help the dialectic side of the debate.

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