**Forum:** Economic and Social Council 2 (ECOSOC)

**Issue:** Measures to strengthen global resilience against virus outbreaks and health pandemics

**Chair:** Megan Tang, Deputy Chair

## Introduction

When combating global pandemics and virus outbreaks, global cooperation is imperative. The identification, prevention, and control of a virus must be done by all, because failure to do so not only endangers the immediate population, but the whole world. On the other hand, one country's success in battling an outbreak can benefit all by decreasing the severity of the outbreak, and informing others of how to best handle it themselves. As seen through this current pandemic, Covid-19, an easily transmittable virus, international coordination is necessary to control the spread.

The information on how diseases become pandemics, past global pandemics and the global responses, and what factors impact pandemics, will all be helpful in determining what policies should be implemented to best combat future disease outbreaks. Efforts can be made to improve the response to an epidemic at every step: from prevention, to identification, to tracking, to quarantine, and to the elimination of the disease.

## Definition of Key Terms

**Covid-19**

A betacoronavirus, related to SARS-CoV and a number of other bat-borne SARS-like coronaviruses. Covid-19 originated from a wet animal market in the city of Wuhan, Hubei Province, China.

### Pandemic

The WHO defines a pandemic as “an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people”. Covid-19 was declared a pandemic by WHO on January 30, 2020.

### Epidemic

An epidemic refers to an increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area. Outbreak carries the same definition of epidemic, but is often used for a more limited geographic area.

### Epidemiology

The study of the factors relating to and causing states of health (diseased and otherwise) and the distribution of these states of health, as well as the application of this knowledge for the purposes of public health efforts.

### Mitigation, preparedness, response, recovery

The four principles of disaster management focused on preventing disaster, preparing for the worst, responding to the direct aftermath of the disaster, and restoring a community in the long run following a disaster.

### Quarantine

A state, period, or place of isolation in which people or animals that have arrived from elsewhere or been exposed to infectious or contagious disease are placed.

### Zoonotic diseases

Infectious diseases that are transmitted between species from animals to humans (or from humans to animals). Covid-19, SARS-CoV and MERS-CoV, are all examples of infectious zoonotic diseases.

### Biosecurity

Biosecurity refers to measures aimed at preventing the introduction and/or spread of harmful organisms (e.g. viruses, bacteria, etc.) to animals and plants in order to minimize the risk of transmission of infectious disease.

## Background Information

## Spread of disease

In order to fight virus outbreaks and global pandemics, it is necessary to understand and identify the ways that diseases can be spread. While epidemics vary in region, time period, number of cases, and disease, there are many similar factors that can assist in the prevention and control of future pandemics.

### *Airborne diseases*

The most common type of diseases are airborne diseases. Germs can spread through the air as small droplets or aerosol particles, able to live on surfaces and spread to people who touch or inhale the microscopic droplets. Covid-19 is an example of how these airborne diseases can spread quickly, especially in the 21st century when large populations live in crowded spaces and urban cities. While these diseases in general have a much lower death rate than other types of disease, they can pose the most danger to global health as they can spread incredibly quickly over international borders and throughout large populations. This type of disease is the majority of global pandemics as it is the easiest to spread, but there are various ways for other types of diseases to spread.

### *Zoonotic diseases*

Zoonotic diseases are also a common type of disease. These are defined as infections that humans catch from animals. These transmissions can come from direct contact with an animal, indirectly through animal habitats, eating or drinking contaminated animal products, or even through products such as medicine made from animal parts. Covid-19 is widely thought to have originated from a bat-borne disease, spread to humans through wet-market trade. These wet-markets are susceptible to being a host of many diseases because of how live animals are in close proximity, allowing diseases to spread among products and mutate quickly.


***Caption #1: Wet market selling fresh produce in Macau***

### *Other ways to spread disease*

Similar to zoonotic diseases, vector borne diseases are passed to humans through mosquitoes, ticks, and fleas. These are also travel-associated, or imported, diseases, such as dengue and malaria. Another transmission route is fecal spread, when microscopic amounts of feces from an infected person are ingested by another. These diseases, such as Hepatitis A and E, are most commonly spread in regions with poor sewage and waste control, as fecal matter in polluted water sources can end up in households without access to clean water. Infections can be spread through blood, like reusing needles. Other bodily fluids, like mucous membranes, can spread disease by kissing or breastfeeding. Also, vomit. Viruses like the human immunodeficiency virus(HIV) are spread largely by unprotected sexual contact. Lastly, bacteria in general can be spread through food, as hygiene and safety practices in the preparation of food differs between nations and cultures.

Because of the different ways that viruses and bacterias work and spread, there is no one solution to prevent the start of an epidemic or to even predict the viruses that will appear. Of course, there are other modes of spreading diseases not mentioned, and future diseases may have new ways of spreading. However, there are general precautions and regulations that could prevent current diseases from continuing to spread, and decrease the likelihood of another global pandemic

## Increased likelihood of global pandemics

Despite the medical and scientific advances in the modern day, the risk of having global pandemics is actually increasing. Evaluating the reasons why this is happening will assist in determining how best to adapt to the changing world while also preventing massive outbreaks from happening.

### *Globalization*

Globalization describes the process of an increase in human interaction economically, politically, and socially. The interconnectedness of people and regions creates a new culture of dependency that benefits everyone, but has the drawback of allowing viruses to spread more quickly than ever. A virus on one side of the world can travel to the other side in less than 12 hours. As seen in the Covid-19 pandemic, air travel played a large part in bringing the virus to all parts of the world, starting from major cities to all neighboring regions. In 2018, more than 4.2 billion people traveled by air, a level of global mobility never seen before. International trade is also increasing, which has the potential of carrying diseases and viruses overseas. Creating preventative measures to cope with the travel that comes with globalization will be increasingly important for a sustainable future. International regulations should not be restricting trade and commerce, but instead ensuring the safety of such trade and commerce.

### *Urbanization*

With the growing global population, more people are transitioning from rural to urban settings. The UN predicts that by 2050, two-thirds of the world will be living in urban areas, largely in Asia and Africa. Many of these densely packed cities are already struggling with infrastructure, housing, sanitation, transportation, and healthcare facilities. This means that an increasing number of people are living in overcrowded and unhygienic settings in which disease can thrive, without access to adequate health care and authorities to deal with outbreak situations. Seen as how major cities are the most susceptible for massive outbreaks, it is important to address how to isolate and constrain epidemics in an urban environment.

### *Climate change*

Climate change will drastically affect our livelihood in the future, including increasing the spread of infectious disease. Disease-carrying insects, like mosquitoes, may become more widespread as they thrive in warming temperatures. WHO estimates that between 2030 and 2050, a quarter of a million people will die of malaria and dengue fever. There is also a higher risk of flooding and hurricanes, which means that outbreaks of waterborne diseases, like cholera and diarrhoeal diseases, are more likely. Natural disasters will cause significant human displacement, forcing people to seek refuge in overpopulated and under resourced environments, increasing the

risk of disease epidemics. It is in the global best interest to decrease the chance of climate change further endangering vulnerable populations to disease outbreaks.

## History of global pandemics

Keeping in mind the methods of disease transmission and trends that will increase the risk of pandemics, past pandemics can be used to demonstrate the changing ways that communities and governments have responded to infectious disease.

### *The Plague*

The bubonic plague, most widely known as “The Black Death of 1347-1352” demonstrates how inadequate medical and sanitation practices can allow for huge, uncontrolled, pandemics. Factors such as climate change, extreme poverty and famine, and urban migration all contributed to the massive spread of the plague. Doctors at the time had little information about the nature of disease, and so combatted sickness by prescribing bloodletting, getting fresh air, or religious traditions. Some governments enforced the first quarantines, closing ports, setting up treatment houses for the ill, boarding up homes of the dying, and limiting movement on local roads. However, communities and governments could not effectively contain the disease, and an estimated 75-200 million people, 40% of the European population, died in the 5 years of the black death.

### *The Spanish Flu*

Near the end of World War I, 1918, the Spanish Flu impacted nearly every country in the world, killing between 50 and 100 million people. Many nations censored the outbreaks of the flu to keep the morale of their troops and prevent other nations from gaining information about their readiness for war. The only nation that readily reported its influenza cases was Spain, one of the neutral countries, granting the name “Spanish flu”. Vaccines were still unavailable in this era, so countries combatted the pandemic by isolating communities and utilizing hygiene methods. Many cities further introduced restrictions on public gatherings by closing schools, theaters, churches, and theatres. Some cities made wearing face masks mandatory as they believed influenza to be airborne, to little effect as masks were of low quality.

The spanish flu pandemic highlighted the importance of openly sharing information, how existing health problems can exacerbate the affect of disease, and the importance of proper sanitation. Nations who could have instituted quarantines and social distancing measures could not do so as information on the pandemic was kept secret for so long. It is best to act proactively rather than reactively against pandemics.

### *HIV/AIDS*

The human immunodeficiency virus(HIV) is a disease transmitted sexually or through the sharing of needles, causing acquired immunodeficiency syndrome(AIDS). In the 1980s, thousands of cases appeared in the United States, disproportionately affecting the gay community. As the disease initally primarly affected drug users and gay men, President Reagan's administration refused to report and address the crisis, only mentioning the disease by name after 5 years of the first case of HIV/AIDS and 89,343 deaths. There still isn't a cure for AIDS, only suppressants, and it is now a huge crisis for developing nations in Sub-Saharan Africa.

This epidemic teaches us that fear mongering, stigmatization, and scapegoating by global leaders or the press can be incredibly dangerous and harmful. Epidemics should be taken seriously and tackled swiftly before the crisis has a chance to grow.

### *SARS-CoV*

Severe Acute Respiratory Syndrome Coronavirus emerged from 2002-2004. Traced from southern China, SARS caused 8096 cases and 774 deaths, costing the world $40 billion from lost revenue. WHO's Global Outbreak Alert and Response Network (GOARN) connected global clinicians and epidemiologists to identify, diagnose, characterize, and manage the disease. SARS is a zoonotic disease, transmitted to humans via animals in overcrowded markets with few biosecurity measures. SARS serves as a reminder that the next pandemic may be sourced from wildlife, so wildlife diseases needs surveillance to ensure that humans and wildlife can live in an ecologically interconnected world.

### *Ebola*

Ebola was first documented in 1976 in South Sudan, but the biggest outbreak was in West Africa between 2014 and 2015. The Ebola virus is transmitted through bodily fluids, the most infectious being blood, feces, and vomit. At the end of the outbreak in March 2016, 28,646 cases were reported with an extremely high fatality rate of 39.6%, which at its peak reached 90%. The outbreak began in Guinea after human exposure to an Angolan free-tailed bat, making it a zoonotic disease.

The healthcare response to this epidemic faced many challenges. The ebola virus was mostly limited to small villages with very few health care resources and facilities. In areas where hospitals ran out of bed capacity, the outbreak lasted for much longer durations. There was also a shortage of healthcare workers, 881 doctors and nurses contracted the virus, of which 513 died. Many local mobs, frustrated at the ineffectiveness of governmental and medical establishments, attacked facilities and workers, believing that the medication was what was causing the high death toll. In Liberia, medical workers worked with the community members to

adapt traditional practices, such as burial practices, creating trust and compliance. This in turn contributed to the more rapid national recovery from the Ebola outbreak.


***Caption #2: Rinsing Ebola protective gear in Beni, Democratic Republic of the Congo***

## Major Countries and Organizations Involved (100-150 words for 10 places)

### World Health Organization(WHO)

The WHO is regarded as the supreme directing authority in the sphere of public health. In reflection of the United Nations, the WHO stresses that international problems can't be solved by the actions of a single country or alliance, but by the global community. The WHO maintains a neutral status, and nearly all nations have member status, making it a good medium for international cooperation for global health security.

### International Monetary Fund(IMF)

The IMF is an international financial institution consisting of 190 countries to foster global monetary cooperation. It also plays a central role in managing international financial crises. In response to Covid-19, the IMF has provided financial assistance to protect the most vulnerable countries and set the stage for economic recovery. The IMF strives to support countries by providing policy advice, financial support, capacity development, and debt relief for the poorest.

### International Health Regulations (IHR) (2005)

The IHR are a set of international agreements to manage global health security and risks of pandemic. They provide an overarching legal framework that defines countries' rights and obligations in handling public health events, including the requirement to report public health events. The IHR are an instrument of international law that is legally-binding on 196 countries, including the 194 WHO Member States. The Regulations also outline the criteria to determine whether or not a particular event constitutes a "public health emergency of international concern". Finally, the IHR introduce important safeguards to protect the rights of travellers in relation to the treatment of personal data, informed consent and non-discrimination in the application of health measures.

### People's Republic of China

Covid-19 originated from the Wuhan province in China, first reported on December 31, 2019. The country's leaders have been accused of being non-transparent in reporting cases in the early stages of the pandemic, under-reporting new cases, as well as concealing the origin of the virus, which still has not been investigated. Foreign Ministry spokeswoman Hua Chunying denied the allegations, citing how the first clusters of cases were reported to the WHO immediately. Hua also claims that investigating the origin of the virus is "shifting the blame", and more effort should be put into eliminating the virus instead. By implementing one of the strictest quarantine measures, China has generally contained the virus at the expense of its economic growth, reporting just under 100,000 cases.

### United States of America

The USA leads in Covid-19 cases by far, with over 22 million cases and 370,000 deaths. This can be attributed to the Trump administration's failure to acknowledge the severity of the virus, responding slowly and ineffectively, allowing the virus to spread extremely quickly. The economic hardship following the many cases caused millions of families to rely on financial recovery packages, and unemployment reached a high of 14.8% in April. Due to President Trump's dismissal of the pandemic, many Americans have ignored safety guidelines of social distancing and mask wearing, further contributing to the spread of Covid-19. The USA continues to struggle with combating the virus, posing a major danger to their economic, social, and political power.

### India

India is second in the world, with over 10.4 million cases and 150,000 deaths. The state government's prompt response to COVID-19 can be attributed to experience and investment made in emergency preparedness and outbreak response in the past, notably after severe flooding in Kerala in 2018 and a Nipah virus outbreak in 2019. Innovative approaches, such as technological context tracing, risk communication, and capacity building of health resources, played a critical role in managing the situation. Considering the mass population of India being vulnerable in densely populated areas, the Indian government has approached the pandemic effectively and successfully.

### Brazil

Brazil has the third largest cases of Covid-19, with 8.1 million cases and 200,000 deaths, signifying that the actual number of cases is much higher than reported. The response to Covid-19 in Brazil has been hindered by partisan politics, and the actions of president Jair Bolsenaro. His administration has dismissed the pandemic altogether, even firing the Health Minister Luiz Henrique Mandetta after he criticized Bolsonaro for inaction. Without government leadership, Brazil struggled with combating the disease, especially since many live in packed cities with little access to clean water. The rate of infection continues to rise, and Brazil faces a political and public health crisis.

## Timeline of Events

| Date | Description of event |
|---|---|
| 1347-1352 | The Bubonic plague, also known as the Black Death, kills ⅓ of the European population |
| 1918-1920 | The Spanish Flu kills 50-100 million people following World War I |
| April 7th, 1948 | World Health Organization established in replacement of the Health Organization of the League of Nations |
| June 1981 | HIV/AIDS epidemic begins in the United States |
| 2002-2004 | SARS-CoV pandemic, originating in China |
| 2014-2015 | Ebola outbreak in West Africa |
| December 31st, 2019 | Cluster of unidentified pneumonia cases identified in Wuhan |
| March 11th, 2020 | WHO declares the Covid-19 a pandemic |

## Relevant UN Resolutions and Treaties

- Comprehensive and coordinated response to the coronavirus disease (COVID-19) pandemic, 10 September 2020 (**A/74/L.92**)
- Global solidarity to fight the coronavirus disease 2019 (COVID-19), 2 April 2020 (**A/RES/74/270**)
- International cooperation to ensure global access to medicines, vaccines and medical equipment to face COVID-19, 20 April 2020 (**A/RES/74/274**)

- Revision of the International Health Regulations, 2005 (**WHA/58.3**)
- Global health and foreign policy, 27 January 2009 (**A/RES/63/33)**

## Possible Solutions

In tackling epidemics and pandemics, frameworks should be established that addresses the categories of mitigation, preparedness, response, and recovery. All aspects of a pandemic should be appropriately managed from beginning to end.

**Identifying appropriate clinical and epidemiological-related public health actions.** This solution focuses on mitigation, preventing or reducing the cause, impact, and consequences of a pandemic. Clinical actions address actions taken in medical facilities, and epidemiological-related actions address the broader issue of pandemic response. Public health and science-based standards need to be established on both an international and nation level. Benefits of an evidence-based public health approach include more successful prevention programs, greater workforce productivity, and more efficient use of public and private resources. Additionally, the communication and coordination of public health officials, regional bodies, and international organizations is important to mitigate the pandemic.

**Establishing a trustworthy institution of public health law.** This solution addresses preparedness, training and designing educational activities for events that can't be mitigated. Public health law can improve access to vaccinations, and facilitate the screening, counseling, and education of those at risk of infection. As seen in the Ebola pandemic, a distrust of medical institutions can result in rapid spread of disease leading to unnecessary and preventable deaths. Public health law should develop positive relationships between the law and the communities that it affects. Specifically, systems for disease surveillance are important, like mobile location tracking.

**Responding to pandemics quickly and effectively.** The most important factor of responding to a pandemic is speed. Previous responses to diseases such as HIV/AIDS are examples of how minor outbreaks can grow to global proportions if not aggressively addressed early on. Medical professionals, epidemiologists, and other specialists conduct on-site investigations and emergency operations centers should provide round-the-clock coordination and response. Countries should establish containment strategies to isolate the organism and conduct investigations to identify an outbreak. An international agreement to share these information will also be paramount for a speedy response.

**Identifying assets, facilities, and other services to guide and prioritize recovery operations.** This last phase focuses on restoration efforts after the elimination of the disease. These services can be offered by groups working in public health, emergency management, human services, and environmental health sectors. Many countries will require unique systems to monitor recovery

needs, giving additional support to areas in special need. Collaboration with regional bodies will also help with restoring public health. The recovery phase will ideally transition back into mitigation practices, in order to mitigate damage from future incidents.

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