**Forum:** Economic and Social Council

**Issue:** Addressing the global re-emergency of infectious diseases

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Introduction

In the early 1970s, powerful antibiotics and vaccines reduced infectious diseases in developed nations rapidly on a global scale. These revolutionary breakthroughs convinced the international medical community that the fight against contagious diseases was over. The Surgeon General of the United States in 1970 stated that it was “time to close the book on infectious diseases, declare the war against pestilence won, and shift national resources on chronic problems such as cancer and heart disease.” Such complacent attitudes meant fewer investments in infectious disease surveillance and research programs. This was especially the case in the developing world, where government funding was already scarce.

Almost half a century later, infectious diseases are re-emerging around the world and pose an indefinite threat to the health and security of billions. Since 1970, about 40 new diseases were discovered with recent outbreaks including Ebola, the Zika virus, the avian flu, and various conditions that were considered under control such as malaria and cholera. According to the World Health Organization (WHO), infectious diseases cause 63% of childhood deaths and 48% of premature deaths. The dangers of contagious diseases are exacerbated by globalization. With more and more people now living in more densely populated areas, traveling more and coming into more contact with wild animals, emerging diseases are given the perfect conditions to spread rapidly and cause global epidemics.

The reemergence of infectious diseases is caused by a variety of factors. Genetic mutations in existing organisms may produce new infectious diseases. “Resolved” infections may also develop resistance to antibiotics. Existing diseases may spread to new geographical regions or populations. Some unknown diseases may emerge due to ecological changes that increase their exposure to animal reservoirs, insect vectors and other sources of novel viruses. Sometimes, the re-emergence of certain diseases can also be because of cultural factors and widespread misinformation. For example, despite the fact that measles and polio vaccines are increasingly available in the United States, more than 100,000 children under the age of 2 are unvaccinated, and this number is on an upward trend. And although the exact reasoning behind the sudden increase isn’t clear yet, many media sources such as the *Washington Post* attributes the sudden increase to the growing skepticism again vaccines.

Definition of Key Terms

**Infectious Disease**

Infectious diseases are medical disorders caused by microorganisms such as bacteria, viruses, fungi, parasites, or protozoans. Symptoms vary depending on the condition, with common symptoms including fever and fatigue. Some infectious diseases can be passed from person to person, some are transmitted through insect bites, and others are transmitted through contaminated water or food.

Epidemic

An epidemic is a rapid spread of an infectious disease in a community during a specific period of time. The specific prerequisites for a disease to be classified as an epidemic is undefined and varies from case to case.

**Pandemic**

A pandemic is the worldwide reach of an infectious disease. This word is different from *epidemic*, which is limited to a specific community, as opposed to a development across a global scale~~.~~ In fact, pandemics generally start off as epidemics, then escalate into pandemics as more and more countries get infected.

**Immunity**

Immunity is the ability of multicellular organisms to fight infections, diseases and other forms of unwanted biological invasions. Immunity is generally achieved through sensitized antibodies, white blood cells, antibiotics or medical drugs.

**Pathogen**

A pathogen is any microorganism that can cause a disease such as a virus, bacteria, fungus, or protozoan. A pathogen may also be called a germ or infectious agent. Pathogens are not to be confused with *parasites*, which refers to small animals such as worms and insect larvae that also produce disease.

**Endemic**

This is an adjective that describes anything (in this case a disease) regularly found among certain individuals in particular areas. For instance, malaria in certain areas of Africa is classified as endemic because it is regularly found in that region.

Recent History & Developments

Vaccination Age (1900-2000)

After epidemiologists were able to identify the causation behind infectious diseases, preventative strategies and treatments were implemented and served effectively. Vaccinations and treatments for diseases such as diphtheria, rabies, anthrax, mumps, smallpox, pneumonia, hepatitis B, measles, yellow fever and tetanus were developed. As a result, these diseases were reduced to a bare minimum in most nations. And with the Biologics Control Act that was passed by the US Congress in 1902 after the death of 13 children in Saint Louis from contaminated antitoxins, standards for medical vaccinations and drugs were developed, and pharmaceutical companies now require licenses to produce such medicine. The Biologics Control Act served as a guideline for other nations to follow, with many nations also drafting similar legislations.

Following the conclusion of World War II, the Center for Disease Control (CDC) was created, with an initial mandate of controlling malaria and other tropical diseases. Then, under the leadership of Dr. Alexander Langmuir, the organization grew drastically to include the surveillance of infectious diseases, delivery of public health advice to policy makers and the general populace. Other public health actions included improvements in sanitation, chlorination of almost all water supplies, and improved methods for diagnosis. All of these developments culminated to an increase of 30 years in average lifespan for US citizens, and diminished infectious diseases worldwide.

Another organization that sprouted up in this time period was The World Health Organisation (WHO). The WHO was created in April 7 1948 by the United Nations as a specialized agency concerned with international public health. Since its creation, the organization has played a large role in eliminating smallpox and mitigating malaria. Its current priorities include eradicating communicable diseases like HIV/AIDS, Ebola and more.

Complacency Crisis (1970-1990)

All of the astounding victories humanity has scored against infectious diseases has led to a severe degree of complacency among public health officials in the late 20th century. Throughout 1970-1990s, many developed countries such as the United States, have shifted investment priorities in infectious diseases to chronic problems such as cancer and diabetes. This meant less priority for infectious disease surveillance systems, and, as a result, these systems weren’t maintained in a large part of the developing world. All of this made infectious disease outbreaks like ebola and cholera in recent years far deadlier than they needed to be. In addition, various diseases that health officials previously deemed “already solved” are resurfacing through genetic mutations and antibiotic resistance. Many experts are also warning of looming pandemics with colossal mortality rates similar to the Bubonic Plague and Spanish Flu.

Current Situation (Present)

Although in recent years the attitudes against infectious diseases have slowly reversed, current epidemiological systems are still ineffective. As countries around the world become increasingly globalized, the threat of a large scale and morbid pandemic striking humanity is on the rise. Nowadays, people and animals are moving around the world at unprecedented speeds and numbers, which means that unlike before, plagues can spread travel thousands of miles in a matter of hours. In addition, when a plague is introduced to a new region, people are more biologically susceptible to the disease as they have probably never have been exposed and haven’t developed any forms of immunity.

Also, ecological changes caused by global warming are exacerbating infectious disease outbreaks. The extremes in rainfall, weather events, and an overall warmer atmosphere create perfect conditions for the growth of disease vectors. For example, one of the primary reasons that diseases such as the Zika virus, dengue and chikungunya are being spread to more regions and people is climate change. This is because these diseases are all spread by the Aedes mosquitoes, which thrive in warmer and humid environments. Other diseases such as malaria, dengue, the plague and viruses causing encephalitic symptoms will also spread more rapidly as global warming continues.

The money spent on healthcare in developed countries like the US has been in a constant freefall in recent years. However, there is no allocated emergency funding mechanism to quickly resolve epidemics. Budgets of international organizations like the World Health Organisation has reached a standstill as well, with the budget not even adjusted for inflation. Duane Gubler, former director of the vector-born disease sector at the CDC, highlights our current predicament by saying, “Health authorities couldn't see any sense in continuing to spend a lot of money to control diseases that weren't occurring, so the programs were disbanded.”

Geopolitics

World Health Organization (WHO)

 The World Health Organization, founded in 1948, is a United Nations specialized agency responsible for coordinating international public health efforts. Some of its mandates include providing guidance for global health matters, creating the health research agenda, drafting standards, providing technical support to countries, and assessing health trends. Currently, WHO’s membership includes 194 countries and two associate members who meet on an annual basis at the World Health Assembly in Geneva to set the budget for the organization and arrange policies. The organization employs over 8000 health experts such as doctors, scientists, epidemiologists, scientists, managers, and more. Its current priorities include infectious diseases, such as HIV/AIDS, malaria, Ebola and tuberculosis, alleviating non-communicable diseases like reproductive health and aging, nutrition, and substance abuse.

           In the lens of the issue of infectious diseases, the World Health Organization plays a significant role. The organization has significantly contributed to the fight against polio, Ebola, tuberculosis, and malaria, and continues to serve as the leading force against infectious diseases. The organization compiles statistics regarding the morbidity and spread of various diseases, and publishes the data for the benefit of the medical community. They also assist member nations in establishing surveillance programs and coordinates emergency disease response teams. For example, during the Ebola outbreak in Congo, WHO staff members trained local volunteers and played a major role in raising awareness.

**The Global Fund to Fight AIDS, Tuberculosis and Malaria**

 The Global Fund to Fight AIDS, Tuberculosis, and Malaria, abbreviated as The Global Fund, is an international financing organization seeking to end malaria, HIV/AIDS and tuberculosis. The organization, based in Switzerland, is more of an investment/financing agency rather than an implementation organization. They do not carry out any of the campaigns; instead, they donate large sums of money to local organizations. As of 2019, they’ve donated more than 41 billion USD to support such programs, and according to the organization, they’ve financed the distribution of 197 million insecticide-treated nets for malaria, anti-tuberculosis treatment for more than 5 million individuals, antiretroviral therapy for 17.5 million AIDS patients, and saved over 27 million lives globally.

**The World Bank**

Unlike the previous two organizations, the World Bank isn’t an organization created for the specific purpose of eradicating infectious diseases. However, the World Bank, through its financial and technical assistance provided to developing nations, has indirectly played a considerable role in the cause. The world bank has two goals to be achieved by 2030: 1) to decrease the number of people living under 1.90$ a day to less than 3 percent to end extreme poverty; and 2) to promote income growth for the bottom 40% of every country to decrease wealth disparity and promote shared development. The organization accomplishes these goals through low-interest loans, credits, and grants, along with policy advice, research, and technical assistance.

International Society for Infectious Diseases (ISID)

The International Society for Infectious Diseases is a nonprofit NGO that devotes itself to finding solutions for infectious diseases across the globe and encouraging collaboration between medical efforts internationally. The society provides professional development to clinicians and medical experts in the field of infectious diseases, especially those originating from poor backgrounds. It also includes information and surveillance on emerging and existing infectious diseases, in an effort to control them around the world. ISID is composed of 90,000 individuals representing every single country in the world and is the leading organization specialized in infectious diseases.

Previous Attempts to Solve the Issue

Attempts to resolve infectious diseases can usually be classified into the following five categories: vaccination, treatment, quarantine, raising awareness, and surveillance. Over the past one hundred years, humanity has done an especially remarkable job in developing vaccinations and treatments for infectious diseases, which has eradicated some of the most pressing and deadly diseases including smallpox, the bubonic plague and more. These vaccines, coupled with international cooperation conducted by the World Health Organization, have reduced infectious disease mortality from 800/100,000 in the 1900s, to under 50/100,000. This is a drastic improvement from before the 1900s, where infectious diseases wiped out entire civilizations. Surveillance and quarantine measures have also improved in recent years, spearheaded by the various advancements in surveillance and protection technology.

There have also been more attempts at spreading awareness about the signs and symptoms of infectious diseases. Since 2000, many organizations, such as the American Leprosy Missions (ALM), with mandates of increasing public awareness and boosting early diagnosis rates have had great success. And although these campaigns yield impressive results, they are mainly focused in developed countries and urban areas, as they rely mainly on social media to operate.

Such successes in the field have led to decades of complacency, and a consensus in the late 1900s that the fight against infectious diseases was over. As a result, in the past fifty years, many contagious disease programs were shut down, and emergency response budgets were reduced. But because of the biological nature of infectious diseases, many previously “resolved” infectious diseases resurface with immunity. In addition, climate change and globalization further aid infectious diseases in their come back, which places humanity in a dire situation--a situation where problems keep arising in the face of an incredibly unprepared international community.

In the last twenty years, we’ve seen numerous outbreaks of infectious diseases, ranging from the H1N1 Flu pandemic in 2009 to the 2014 Ebola Virus outbreaks in West Africa. International response times against these outbreaks have been prolonged, especially given our modern information technologies, and current measures to prevent reoccurrences of the same disease are lacking. For instance, many vaccine-preventable diseases, such as measles, have been resurfacing and running rampant in developing countries, including the Philippines and Ukraine. And Ebola, which has received international attention since 1976, has been re-emerging in Africa constantly.

Relevant UN Treaties and Events

* Constitution of the World Health Organization, 22 July 1946
* Responsibility of the Security Council in the Maintenance of International Peace and Security: HIV/AIDS and International Peace-keeping Operations, 17 July 2000, S/RES/1308
* Coordinated and integrated United Nations system approach to promoting rural development in developing countries, with due consideration to least developed countries, for poverty eradication and sustainable development, 23 July 2004, ECOSOC Resolution 2004/48
* HIV/AIDS, 7 June 2011, S/RES/1983
* Transforming our world: the 2030 Agenda for Sustainable Development, 25 September 2015, A/RES/70/1
* Ebola Outbreak in Africa, 18 September 2014, S/RES/2177
* Ebola in the Democratic Republic of Congo, 30 October 2018, S/RES/2439

Possible Solutions

 As mentioned before, solutions to infectious diseases can usually be classified into five categories: vaccination, treatment, quarantine, raising awareness, and surveillance. Entire resolutions can be made focused on any of these five categories and can be enhanced through other solutions like increasing international cooperation or improving government emergency response budgets. For the sake of generality, one potential solution for each of these five categories will be provided.

           Firstly, vaccination. Humanity has already done a remarkable job in developing treatments for diseases. However, the availability of many vaccines is problematic, with many individuals in developing countries not able to get their hands on such vaccines. For instance, according to the World Health Organization, millions of children in developing countries are still left unvaccinated, because the costs of vaccinations are too high for these impoverished families. The WHO estimates that 1 billion USD is required annually to provide estimates that 1 billion USD is required annually to provide vaccination to these children who are still at risk. Acquiring this funding will be difficult, as donor nations have already provided billions of dollars in foreign aid and are reluctant to provide more; however, it isn’t impossible. It is possible that cooperation with the World Bank and acquiring low-interest loans or grant systems may make up for the one billion dollars. In addition, appealing to well-off individuals living in developed countries for small donations may also be a viable strategy.

           Secondly, treatment, similar to vaccinations, for infectious diseases has also made significant progress in recent years. However, treatment costs, especially for complicated diseases like Ebola, are tremendously costly. According to the *Washington Post*, treatment for Ebola at a US clinic amounts to 30,000 USD per day, which is unaffordable for most people affected with the disease. Even if an Ebola patient manage to survive, they will be faced with insurmountable debt as the average length of hospital stay is 18 days. Decreasing infectious disease treatment costs and making treatment more accessible is a vital facet of the issue. This can be accomplished through government welfare programs, cooperation with insurance companies, and more.

           Thirdly, quarantine. This is the go-to method for most infectious diseases, and has proven to be successful in eradicating infectious diseases. However, it is considered inhumane by many because it leaves the patients hung out to dry. People who are quarantined are often placed in a quarantine center by public health officials, shut off from their family members and anyone else they know. If there is not medical solution, these people are left in quarantine until their eventual death. Therefore, solutions addressing this category can focus on making quarantine more humane to the patients. This can come through visitation areas separated by glass, leisure/entertainment areas in the quarantine centers for patients and more.

           Fourthly, raising awareness. Currently, there are already many awareness campaigns regarding infectious diseases. However, they are not concentrating on the people who need it the most people in developing nations. Therefore, a possible solution may be to deploy awareness campaigns in developing countries targeting individuals who are at an increased risk of being infected with such diseases. This can come in the form of fliers, educational proceedings, public service announcements, and more.

           Lastly, surveillance to detect on-going viruses. This is perhaps the most crucial category in regard to the current predicament. The most dangerous component of infectious diseases is their ability to spread rapidly and kill patients in a short amount of time. Therefore, it is essential that infectious diseases be discovered early on, and contained before they can do irreversible damage. Currently, there is a need for surveillance for known existing diseases, new and emerging diseases, and the resistance to antimicrobial drugs. This can be achieved through the deployment of medical professionals and epidemiologists in regions where diseases are likely to arise and increased communications between the World Health Organization and local clinics.

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