

<b>Forum:</b>	Special Conference on the Promotion of Equality Sub-Commission II
<b>Issue:</b>	Evaluating the global accessibility of medication and treatments to prevent epidemic outbreaks
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## Introduction

The world's population is 7 billion and growing. Infectious diseases are one of the leading causes of death worldwide. The biggest killers are namely HIV/AIDS, hepatitis, malaria, cholera and tuberculosis. In the industrialized world, infectious diseases are, for the most part, kept under control. This problem, however, is most prevalent in Less Economically Developed Countries (LEDCs) as they lack the funds and social systems to educate, prevent, and treat major infectious diseases. Possibly the most destructive infectious disease faced today is HIV/AIDS. As of today, there is no clinically proven cure for AIDS, but antiviral drugs are used to treat and control it. With the help of various organizations such as the World Health Organization (WHO) to improve education, awareness, and prevention campaigns, there has been a decrease in the number of deaths due to AIDS. Nevertheless, the rapidly growing world population is putting additional strain on the access to medicine and treatments for infectious diseases.

## Definition of Key Terms

### Infectious diseases

Infectious diseases refer to any communicable diseases, including parasitic and zoonotic diseases, and some respiratory infections and diarrhoeal diseases (Brundtland). They are caused by pathogenic microorganisms such as bacteria, viruses, parasites, or fungi. The diseases can be directly or indirectly transmitted from one person to another. Zoonotic diseases are infectious diseases of animals that can cause disease when transmitted to humans ("WHO...").

### Outbreak

A disease outbreak occurs when a disease occurs in greater numbers than expected in a community, region, or season. An outbreak can emerge in one community and spread across countries. It can last anywhere from days to years. Sometimes, a single case of a contagious disease occurring among a large number of

people can be classified as an outbreak if the disease is unknown or new, or has been absent from the population for a long time (Chang).

### **Epidemic**

An epidemic occurs when an infectious disease spreads rapidly to many people. An example is the 2003 severe acute respiratory syndrome (SARS) epidemic, which took the lives of nearly 800 people worldwide (Chang).

### **Pandemic**

A pandemic occurs when there is a global infectious disease outbreak. HIV/AIDS is one of the largest pandemic that has plagued large numbers of people worldwide. The 2009 Swine Flu (H1N1) is an example of a pandemic (Chang).

### **HIV/AIDS**

Human Immunodeficiency Virus (HIV) is a retrovirus that causes Acquired Immunodeficiency Syndrome (AIDS). AIDS is characterized by a severe weakening of the human immune system, which makes AIDS patients much more susceptible to opportunistic infections – infections that rarely affect the body, except when the body's immune system is down. HIV can be transmitted mainly through the exchange of bodily fluids, including sexual intercourse and blood transfusions.

## **Background**

As mentioned in the introduction, industrialized countries do not suffer visibly adverse effects of infectious diseases as much as poorer nations. AIDS is a pandemic that currently affects around 33 million adults and 2.5 million children worldwide, and it infects an estimated 7000 new people every day (Neimark). The United Nations (UN) estimated that in 2007, 2.5 million people were newly infected with HIV/AIDS and 2.1 million people died from AIDS-related causes. The UN estimates that 5,700 people will die each day from AIDS-related infections. Malaria affects up to 500 million people a year and kills over a million, and 1.5 million die from tuberculosis (Horner 118).

Infectious diseases are closely associated with poverty, as characteristics of developing countries such as overcrowding, poor access to clean water sources, poor sanitation facilities, and low GDP, encourage the spread of such diseases. The lack of money in developing nations also hinders access to drugs and treatment, which poses further risks for the transmission of infectious diseases. The WHO estimates that nearly 2 million deaths worldwide each year are due to unsafe water, and poor sanitation and hygiene (Horner 119).

The WHO report on infectious diseases published in 2000 also pointed out the issue of antimicrobial resistance (Horner 119). Antimicrobial resistance is a form of natural selection, or 'survival of the fittest', whereby each time

a drug is administered, only the microbes with genes that render them resistant to the drug survive, and they reproduce to pass on this resistance to their offspring. With each cycle of drug administration, the microbes that survive become increasingly more resistant, to a point when different strains of the microbes emerge, and new drugs have to be developed. Hence drugs that were effective, say, 10 years ago, are no longer so today. On the other hand, it has been argued that it is the underuse of the drugs in the first place that enabled certain microbes to survive and reproduce to produce mutant strains. Tourism also plays a large part in the spread of infectious diseases (Horner 119). In particular, with the development of air transport, diseases can spread from one continent to another in a matter of a few hours.

Co-infection – when people affected with one disease become more susceptible to other diseases, such as the opportunistic infections associated with HIV/AIDS – worsens the situation of infectious diseases, as it puts additional strain on the demand for medications and treatments (“Global...”).

Infectious diseases and epidemic outbreaks are clearly one of the most pressing global issues, supported by its link to three out of the eight Millennium Development Goals (MDGs). These three MDGs are: reducing child mortality rates, improving maternal health, and combating HIV/AIDS, malaria, and other diseases (*United...*).

There are essentially three aspects associated with preventing epidemic outbreaks. These are education, prevention, and treatment. LEDCs lack the funds to proceed with any of these aspects. In most LEDCs, with an already low GDP, large external debt, poor access to clean drinking water, and poor access to sanitation and hygiene facilities, the country almost acts as a breeding ground for pathogenic microbes. In an attempt to increase international economic competitiveness, the governments of LEDCs are reluctant to allocate a large proportion of its GDP on health services, instead directing such funds on economic and industrial growth. However, with growing cases of infectious diseases and hence mortality due to such diseases, human labor – one of the key factors of production in an economy, especially in labor intensive primary product economies characteristic of many developing countries – LEDCs are caught in a vicious cycle of death by infectious diseases and labor shortage, which in turn hinders economic growth. The poor health status of developing countries also has a downward pressure on their economic development, which is defined as an improvement in welfare.

As a result, LEDCs rely heavily upon foreign aid and Non-Governmental Organizations (NGOs) to provide funding for initiatives to improve health and control the spread of infectious diseases. Such action has already been taken in many developing countries, and has had effective results. For example, Africa, which is the worst affected continent by HIV/AIDS, there has been a decline in the number of new infections of up to 25% in six countries within the 15 to 24 age group. This can be attributed to a decline in the rate of sex among this age group, as well as the increased use of condoms due to increased education of HIV transmission. Antiretroviral therapies account for the increased number of people living with HIV/AIDS, because although such therapies cannot cure AIDS, it controls the disease so that infected patients are not faced with death. This essentially decreases the HIV/AIDS mortality rate. Nevertheless, in some parts of the world, including eastern Europe and central Asia, the number of new HIV/AIDS infections continues to rise (Horner 121).

## Major Parties Involved

### World Health Organization (WHO)

The WHO has launched numerous initiatives to prevent and control the spread of infectious diseases, especially in developing countries. It has also played an extensive role in mobilizing partners and developing policies to help combat these infectious diseases. For example, the WHO's Integrated Management of Childhood Illnesses (IMCI) strategy permits immediate treatment of children in health care systems. It is a disease control initiative that manages five most common causes of childhood deaths - pneumonia, diarrhoeal diseases, malaria, measles and malnutrition. It is a low-cost strategy that reduces the number of child deaths due to these infectious diseases. IMCI also helps prevent illness through promoting improved nutrition and vaccination. The WHO also has a STOP TB Initiative, which is a political and social movement against TB worldwide through the promotion of the use of cost-effective Directly Observed Treatment, Short-course (DOTS) (Brundtland).

### U.S. Agency for International Development (USAID)

USAID is a U.S. organization established by President John F. Kennedy in 1961, that aims to provide foreign assistance. USAID has since played a significant role in the prevention of the spread of infectious diseases. In fact, USAID has been a leader in the control and prevention of such diseases, continuing efforts to increase child survival, maternal health, and HIV/AIDS. The organization also launched an infectious disease initiative in 1998 with the support of the U.S. congress to improve its ability to respond to the increasing threat of new or emerging infectious diseases. This initiative aims to prevent diseases such as malaria and tuberculosis, strengthen treatment and control programs that exist in healthcare systems, and focus on addressing antimicrobial resistance. “This initiative builds on USAID's long-standing efforts to address acute respiratory infections, diarrheal diseases, vaccine-preventable diseases (including polio), and malaria in children. Through USAID, the U.S. Government is the world's largest donor of global health aid, supporting activities in developing countries for the control, prevention, and mitigation of the HIV/AIDS epidemic” (“USAID...”).

## Previous Attempts to Resolve the Issue

As previously mentioned, there have been extensive efforts by NGOs and United Nations Organizations (UNOs) to improve global accessibility to medication and treatments to prevent epidemic outbreaks. This has mostly been through direct funding of health systems as well as the provision of medications and vaccinations through organizations such as the WHO and USAID, since developing countries lack the financial means of accessing such medicine. In the previous section under the WHO, two examples of WHO initiatives were stated. However, there are numerous other WHO initiatives that tackle a variety of other infectious diseases, including malaria, pneumonia, filariasis, leprosy, guinea-worm disease, tetanus, Chagas disease, measles and polio. The WHO also

targets political, social, and economic reforms that will enable the development of health systems that will tackle infectious diseases. The STOP TB Initiative was as much a political movement as an effort to combat TB.

Similarly, USAID has listed many objectives and have implemented strategies and infectious disease programs. USAID's four key priority areas are 1) development and implementation of strategies and interventions to understand, contain and respond to the development and spread of antimicrobial resistance, 2) sustainable reduction in incidence of tuberculosis among key populations in selected countries, 3) sustainable reduction of deaths due to malaria and incidence of other infectious diseases of major public health importance among key populations in selected countries, and 4) Improvement in the capacity of selected countries to obtain and use good quality data for surveillance and effective response to infectious diseases. USAID's infectious disease programs include Antimicrobial Resistance (AMR), Avian and Pandemic Influenza Preparedness and Response, Disease Surveillance, Malaria, Neglected Tropical Diseases, Tuberculosis, and Other Infectious Diseases. USAID assists countries in need by providing technical assistance to developing countries, researching in strategically critical areas, and building or empowering the local community to address these issues in a continued and sustainable manner (*Reducing...*).

The UN General Assembly has also adopted a Declaration of Commitment on HIV/AIDS (**A/RES/S-26/2**).

Overall, there has been a decline in infectious disease prevalence rate due to the development of new medicine and technology, along with improved access to medication and treatments in development countries. However, this issue is still a pressing one, and continued efforts are necessary to prevent further epidemic outbreaks.

## Possible Solutions

- **Increase funding**

Increasing funding from foreign donors, NGOs, or UNOs, can equip developing countries with the financial means of improving their health services, hospital and sanitation facilities, and access to clean drinking water sources. In addition, development countries may have the capacity to employ education or awareness campaigns regarding major infectious diseases. This in turn will potentially control and reduce the transmission of infectious diseases, hence reducing the risk of epidemic outbreaks. Of course, this solution means that incentives will have to be given to certain More Economically Developed countries (MEDCs) for them to aid LEDCs.

- **Increase availability of cheap condoms to control HIV transmission**

As HIV/AIDS is one of the most prevalent infectious diseases, initiatives that directly tackle the transmission of the retrovirus should be employed. The main mode of HIV transmission is through the exchange of bodily fluids during sexual intercourse, so by increasing the availability of cheap condoms, transmission may be reduced, and hence the risk of developing AIDS may also decrease.

- **Improve access to clean drinking water, sanitation facilities, hospitals**

Linked closely with increased funding, improved access to clean drinking water will reduce the risk of transmission of water-borne diseases. Greater access to sanitation facilities and hospitals will also enable early detection of infectious diseases, as well as the effective control and treatment of such diseases to prevent epidemic outbreaks.

- **Improve access to medication and treatments in LEDCs**

With foreign aid, as well as support from UNOs and NGOs, improving access to medication and treatments in LEDCs through direct provision is at the crux of this topic. The potential problem with this solution, however, is that LEDCs may become over-dependent on foreign aid groups, as well as relevant organizations. Whilst this may be a short-term solution to solving the issue, in the long run, developing countries who currently have limited access to medication and treatments for infectious diseases, have to implement strategies to develop their own health systems so that they can be self-sufficient and sustainable.

- **Improve access to cheaper medications**

In response to the potential problem of over-dependence of LEDCs on aid groups, increasing access to cheaper medications that can be produced locally in LEDCs may alleviate this problem. Using funding from foreign donors and relevant UNOs and NGOs to establish production facilities, LEDCs may be able to achieve a sustainable means of improving access to medicine to help control the spread of infectious diseases. This does, however, come with the added complication of health, safety, and environmental standards, as well as quality control. In addition, it is questionable whether LEDCs would want to invest highly in the development of the health industry amidst other economic concerns.

- **Increase access to childhood vaccinations**

As prevention of infectious diseases is possibly the most important aspect of controlling epidemic outbreaks, increasing access to vaccinations – especially in children, since they have weaker immune systems and are more vulnerable to contracting infectious diseases – is crucial.

- **Implement education and awareness campaigns**

Following on with the prevention aspect of this topic, using funds to further implement education and awareness campaigns regarding infectious diseases may help reduce transmission of such diseases. This strategy has been seen to be effective in terms of the decline in HIV transmission through sexual intercourse.

- **Increase research into new drugs to fight antimicrobial resistance**

Although not directly pertinent to the topic at hand, if developed countries could specialize in research on antimicrobial resistance – which is one of the main issues regarding the control of infectious diseases –

such diseases would be much more effectively treated and controlled. New drugs and treatments can be developed to combat emerging resistant strains of microbes. With such new developments being passed on to LEDCs as well, this in turn will reduce the risk of epidemic outbreaks.

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## Appendix or Appendices

- I. <http://www.who.int/infectious-disease-report/pages/textonly.html> (WHO's Report on Infectious Diseases 1999)

*Although this report is around 11 years old, it has a lot of information about initiatives and actions that the WHO has done in an attempt to combat the issue of infectious diseases.*

- II. [http://www.usaid.gov/our\\_work/global\\_health/id/](http://www.usaid.gov/our_work/global_health/id/) (USAID Infectious Diseases Overview)

*This site gives an overview of the objectives of the USAID in regards to Infectious Diseases, and has links to specific USAID Infectious Diseases Programs.*

- III. <http://www.unescap.org/esid/psis/population/workingpapers/HIVAIDS/index.asp> (HIV/AIDS Prevention, Treatment and Care: Regional Situation and Issues for Consideration)

*This report is compiled by United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), and contains detailed information regarding the HIV/AIDS epidemic situation in the ESCAP regions, along with measures for prevention and treatment that have been taken.*