

Forum:	UN World Health Assembly (WHA)
Issue:	Measures to ensure efficient and equal distribution of COVID-19 vaccines
Chair:	Sophie Lee, Deputy President

Introduction

SARS-Cov-2, also known as COVID-19, was first reported in Wuhan, December 2019. It is a contagious disease that originated from a newly found coronavirus. As the genomic features of the virus does not show a variety of elements that are recognizable, it highlights that the virus originated from animals, and the virus is not man-made. Patients of COVID-19 often show symptoms related to the respiratory system or common cold, such as fever, cough, tiredness, difficulty in breathing, chest pain, etc. Older people from the age of 65 or people who already are suffering with medical problems tend to show a severe level of illness. On March 11, 2020, COVID-19 was officially declared as a global pandemic by the World Health Organization. Although it has been over a year since the first outbreak, the virus is continuously spreading around the world with approximately 85 million confirmed cases and about two million deaths in 190 nations.

Luckily, scientists and researchers around the globe have been putting their effort into developing COVID-19 vaccines, and some countries have already succeeded in the vaccine rollout. Moderna and Pfizer-BioNTech's vaccines were authorized in 2020 and are recommended to use, along with vaccines that are going through the procedure of authorization. As history shows, vaccines have played an important role in putting an end to the rapid spread of pandemics, such as the Flu, Chickenpox, and Measles. Currently, the majority of individuals in the world remain highly susceptible to COVID-19. By using vaccines, it teaches individuals' bodies to combat the infection, which can make COVID-19 less lethal, block the swift transmission of the virus between people, or at least decelerate the speed of the virus spreading. Of course, better and efficient treatments with more medical facilities for COVID-19 patients are needed, but the use of vaccines will change the situation dramatically. It is critical to recognize that vaccines should be distributed to all nations efficiently and proficiently, and to the prioritized group of people among each nation. Prioritization group for vaccination slightly differs among nations; however, the WHO claims that health workers who are at a high risk of being infected and spread COVID-19 to others, individuals who are already at the risk of death due to poor health condition

and underlying illnesses, individuals at a risk of infection and transmission of the virus due to social or employment situations where they are not capable of successfully physically distance. Also, Tedros Adhanom Ghebreyesus, Director General of WHO, stated that "people at highest risk of serious disease of death as a result of age, are also a high priority group". No matter what each country defines their prioritization group as, it is crucial to conduct an efficient and equitable share of COVID-19 vaccines; if not everyone is safe from the virus, then everyone is still at the danger of infection.

Definition of Key Terms

Coronavirus

Coronavirus is a family of viruses which often causes mild to moderate upper respiratory illnesses like the cold. There are many kinds of coronaviruses and they mostly circulate among animals; however, like SARS, MERS, and COVID-19, the virus can jump to humans and cause disease.

Vaccine

According to Cambridge Dictionary, the definition of vaccine is "a substance containing a virus or bacterium in a form that is not harmful, given to a person or animal to prevent them from getting the disease that the virus or bacterium causes". The WHO reports that vaccines save countless lives annually, as vaccines fight against the virus by preparing and teaching the immune system.

Prioritization

As stated in the introduction, the WHO announced that it is important to prioritize front line health workers and other populations who are at risk of infection for vaccination. The populations who are at high risk of infection includes people with age 65 or above, people with poor health conditions such as heart attack or other respiratory illnesses, and people who are set at a situation where they cannot effectively socially distance from one another.

Access to COVID-19 Tools Accelerator (ACT Accelerator)

The Access to COVID-19 Tools Accelerator (ACT Accelerator) is led by WHO and partners other health organizations. It encourages and assists the development and the fair distribution of the tests, treatments and vaccines for COVID-19. The WHO reported that the program had a funding gap of US\$ 28.2 billion remaining and US\$ 4.3 million required to efficiently check areas of developments and tests. Low and low-middle income countries will gain access to these tools much later compared to high-income countries, which will extend the pandemic with serious economic consequences.

Equal Distribution of COVID-19 Vaccines

According to the Fair Allocation Framework published by the WHO in order to clarify what exactly fair and equitable allocation of COVID-19 vaccines mean, it suggests vaccines for 3% of all countries' population to be available. Initially protecting the 3% of their population should be sufficient to protect the remaining population. Individuals who are at a risk of infection and have daily contact with COVID-19, such as frontline health care workers and people who work at social care settings differ among nations, from 0.0001% to 3%.

Herd Immunity

Herd immunity is when most of the population is immune to the virus and can act as a biological barrier in stopping further transmission. This is important as not everyone is able to be vaccinated, due to weakened immune systems or serious allergies towards some components of the vaccine. With herd immunity, individuals who are incapable of being vaccinated can be protected.

Outbreak

An outbreak is an unexpected rise in the number of disease cases. An outbreak can gradually become an epidemic if it is not controlled efficiently.

Epidemic

An Epidemic is a disease that impacts a big number of people within a specific region. A disease is classified as an epidemic once a sudden rise in the number of cases of a particular disease in a particular area.

Pandemic

WHO defines pandemic as "an epidemic occurring worldwide or over a very wide area, crossing international boundaries and usually affecting a large number of people". To simplify, a pandemic refers to the worldwide spread of an epidemic. Pandemics therefore affect and infect greater numbers of people and cause greater amounts of deaths.

Background Information

2009 H1N1 Pandemic

H1N1 influenza virus (swine flu) appeared in Mexico in early 2009, and the WHO reported the outbreak as a pandemic in mid-June. Like the condition of COVID-19 vaccines, vaccine supply was deficient during the beginning of the 2009 H1N1 pandemic when demand was high. As the H1N1 was the last

significant pandemic before COVID-19, the history of vaccine distribution and treatment of the influenza can be beneficial in planning an equal and expeditious COVID-19 vaccine distribution.

Vaccine Distribution

The WHO Pandemic Influenza A (H1N1) Vaccine Deployment Initiative made sure that vaccines reached every country in need of help. In August 2009, WHO began to determine which countries should be allowed to receive donated H1N1 vaccines. The Eligibility was focused on not having a vaccine production in the country and the lack of ability to purchase large quantities of vaccines on the market. 95 low income and low- middle income countries were considered eligible, and Chile and South Africa were added later, seeing that outside factors have increased the risk of H1N1 influenza. It was crucial to create a system to equally distribute the same number of vaccines to nations; therefore, an order of countries that will receive vaccines was developed. Low income countries were allocated to a group based on factors such as the geographical region, number of cases, and the potential of an outbreak, along with public health impacts. As the WHO was sequencing nations, they also considered the timing of winters and prioritized nations which experience winter first.

Donation and Financial Support

The WHO Vaccine Deployment Initiative organized the support from the governments, foundations and facilitating access for manufacturers. Adequate amounts of supplies were needed in order to administer the vaccines, leading donations of vaccines and associated medical products, such as syringes and safety boxes from international organizations and non-profit organizations such as the United States Agency for International Development (USAID), Becton Dickinson and Company, United Nations Office for Project Services (UNOPS), etc. Financial support was provided by local funding and donations received through the WHO Deployment Initiative and was sedulously planned and used in assuring fair access to the resources at hand. Financial aid was valuable as the cost of producing harmless and effective vaccines and distributing them to nations was costly.

COVID-19 Vaccines

Pfizer-BioNtech

First results of the Pfizer-BioNtech was issued in November which showed the vaccine was 95% effective. The vaccine would be given in two doses in total, with a gap of three weeks in between each dose. The vaccine is transported in a box with dry ice and a GPS tracker as the vaccine is required to be stored where the temperature is around -70C. It was officially approved By the

U.S. Food and Drug Administration (FDA) announced the first emergency use authorization (EUA) on December 11, 2020.

Moderna

The Moderna vaccine is an RNA vaccine, which uses a small portion of COVID-19's genetic code, so that the immune system attacks the fragment of the virus. The company claimed that it has 94.5% protection, with also two doses in total but with a gap of four weeks in between. The Moderna vaccine is relatively easier to store compared to the Pfizer-BioNtech vaccine as it can stay at -20C for six months. The FDA announced EUA on December 18, 2020, allowing Moderna COVID-19 vaccine to be allocated in the U.S.

Oxford University-AstraZeneca

The Oxford University-AstraZeneca was approved December 30, 2020 after tests showed that it refrained 70% of people from growing COVID-19 symptoms. Test results also showed that older people had stronger immune responses. The Oxford University-AstraZeneca is also given in two doses in total like the Moderna vaccine and the Pfizer-BioNtech vaccine; however, the Oxford University-AstraZeneca vaccine does not require to be kept in a cold surrounding.

Major Countries and Organizations Involved

World Health Organization (WHO)

The World Health Organization (WHO), founded in 1948, is the United Nation (UN)'s health agency, which is a critical role in addressing issues regarding COVID-19. WHO helped nations to prepare for how to respond to the virus, provided accurate information, ensured supplies got to frontline health workers, trained and mobilized health workers and searched for vaccines from the moment COVID-19 was first found in Wuhan, China. The WHO seeks to serve all people with equity, objectivity and neutrality. WHO is also one of the leaders for COVAX, the vaccine pillar of ACT-Accelerator. WHO developed a Fair Allocation Framework which targets to ensure successful development of COVID-19 vaccines and treatments to be shared equally with all nations.

COVAX

COVAX, one of the three pillars of the ACT Accelerator, is an international solution for COVID-19 as it is the only effort that ensures all people around the world have access to COVID-19 vaccines. COVAX has been established to increase the chances to manufacture vaccines in the amount required to terminate this pandemic. The countries who join COVAX not only earn access to a descriptive portfolio of COVID-19 vaccines, but also an actively updated portfolio. The facility continuously monitors the

situation and the manufacturing of vaccines. Low income nations who cannot afford and purchase vaccines on the market, COVAX is a way to gain access to vaccines.

Gavi

Gavi is a Vaccine Alliance that helps with vaccinating half of the children in this world against diverse kinds of diseases. Established in 2000, Gavi was a key factor in immunizing over 760 million children and preventing more than 13 million deaths. It also plays a crucial role in improving overall global health level and protection. The Vaccine Alliance brings many countries and governments, such as the WHO, UNICEF, World Bank, vaccine companies, etc.

CEPI

CEPI is an original association between public, private, charitable, and civil organizations. It was launched in 2017, aiming for development of vaccines for epidemics in the future. CEPI works together with the WHO to respond to the crisis of COVID-19. CEPI launched nine partnerships in order to produce COVID-19 vaccines.

United States of America (USA)

Total reported cases of COVID-19 in the United States of America (USA) is 21.6 million, with total deaths of 365,494. The pandemic critically changed the US in 2020, as millions of US citizens tested positive for the virus and the number of deaths exceeded the population of St. Louis. The USA is definitely one of the major countries who are suffering from COVID-19 with a rapidly rising amount of confirmed cases and deaths each day. The US is currently manufacturing and has developed the Moderna COVID-19 vaccine. Centers for Disease Control and Prevention (CDC), one of the main operating section of the Department of Health and Human Services, National Institutes of Health (NIH), is a medical research agency which is also a part of the Department of Health and Human Services, U.S. Food and Drug Administration (FDA) are all key factors in combating issues related to COVID-19 in the US.

United Kingdom (Great Britain)

The United Kingdom is the first country in the world to approve mass use of COVID-19 vaccines, developing COVID-19 vaccines themselves as well. As one of the Big Five, it is undeniable that the UK is economically advanced and holds power internationally. With 3,211,576 total confirmed cases and 84,767 deaths, the UK is still one of the countries that is highly affected by COVID-19 and has an increasing number of confirmed cases and total deaths. The United Kingdom National Health Service (NHS) prioritized vaccination for people over the age of 80, people who live or work at care homes and

health/social care workers. The Medicines and Healthcare products Regulatory Agency (MHRA) tested and approved three COVID-19 vaccines: Pfizer-BioNTech, Oxford-AstraZeneca and Moderna.

Japan

With 315,910 confirmed cases and 4380 deaths in total, Japan is one of the nations who is suffering with COVID-19 with a rising graph of confirmed cases and deaths. Japan's health care is well provided for Japanese citizens, and non-Japanese citizens through universal health care. Even though people in Japan receive high quality medical treatment, Japan is lacking in medical supplies needed to suppress the rapid spread of the virus in Japan. The government signed the contract for 120 million Pfizer-BioNtech vaccine doses. Japan also made contracts with Moderna, Oxford-AstraZeneca and Novavax.

Ethiopia

Ethiopia has relatively a smaller number of confirmed cases and deaths in total, with 130,326 confirmed cases and 2023 deaths. The number of confirmed cases has been going down recently, yet Ethiopia does not provide quality health care to their citizens, as access to health care itself is highly restricted, with no health care available in rural areas. Ethiopia is a good example of a country that has a relatively low amount of confirmed cases and deaths with a poor health care system. This means that it is possible for COVID-19 to unstopably spread among in Ethiopia if a big outbreak happens, as it will be challenging for the government to treat the patients with modern medical treatments.

Timeline of Events

Date	Description of event
December 29th, 2019	local hospitals in Hubei, China report the first four cases of a "pneumonia of unknown etiology"
December 31st, 2019	Wuhan Municipal Health Authorities report a string of pneumonia-like cases in Wuhan, China
January 3rd, 2020	Chinese officials inform WHO about the cluster of cases of "viral pneumonia of unknown cause" first found in Wuhan
January 9th, 2020	WHO report that Chinese authorities have found that the cause of the outbreak is novel coronavirus

January 30th, 2020	WHO declares the outbreak as a Public Health Emergency of International Concern (PHEIC)
March 11th, 2020	WHO declares COVID-19 as a global pandemic
August 3rd, 2020	WHO publishes COVID-19 Preparedness and Response Progress Report
September 14th, 2020	WHO issues Values Framework
December 11th, 2020	Pfizer-BioNTech vaccine receives authorization

Relevant UN Resolutions and Treaties

- Comprehensive and coordinated response to the coronavirus disease (COVID-19) Pandemic, 10 September 2020 (A/74/L.92)
- United response against global health threats: combating COVID-19, 14 April 2020 (A/74/L.57)
- Global solidarity to fight the coronavirus disease 2019 (COVID-19), 3 April 2020 (A/RES/74/270)
- International cooperation to ensure global access to medicines, vaccines and medical equipment to face COVID-19, 21 April 2020 (A/RES/74/274)
- COVID-19 response, 19 May 2020 (WHA73.1)

Possible Solutions

COVAX allocates approved COVID-19 vaccines across member states of WHO. The vaccines will be rolled out in two steps. The first step is distributing vaccines based on the population size of the member states so that enough vaccines are provided to protect the people and health workers who are at a constant risk of transmitting or being infected by the virus. The Fair Allocation Framework written by WHO targets guaranteeing the equitable distribution of vaccines and other treatments. The second step is continuing to provide nations with vaccines so that the remaining population (which differs based on who each country prioritizes). COVAX hopes to share at least 2 billion vaccine doses until 2022. This number is definitely not enough for everyone, it could lead the pandemic to slow down, which would subsequently give time to produce more COVID-19 vaccines. This solution is

feasible as it is based on WHO and COVAX which are international organizations under the UN. All member states of WHO will attain a certain amount of vaccine, and this is important as if only the rich countries take all the vaccine doses, then the virus will continue in low income countries, which means COVID-19 will continue to spread around the globe. The question to think about regarding this solution is how the low income and low-middle income countries are going to pay for the vaccine. Especially at this time period where numerous countries have been highly affected economically due to COVID-19, payment is a problem for LEDCs. Another question to consider is the sequence of distribution to member states, as all nations are in need of vaccines at a time where there is a limited supply of vaccines.

Increase the supply of approved and authorized vaccines. The WHO and its partnerships can work together with Moderna, Pfizer-BioNTech, and Oxford University-AstraZeneca to increase the amount of vaccine doses being manufactured efficiently and successfully. Member states of the WHO, who are economically capable of funding money to produce vaccines, can donate money and resources needed in order to create COVID-19 vaccines. The three vaccine companies working together will result in a fast manufacture of approved vaccines. This solution is the fundamental step in resolving this issue of fast and equal distribution of COVID-19 vaccines as it is important to first create vaccines to an extent where it will be enough for the prioritized groups in all nations. However, it is the current situation that mass production of authorized vaccines are not feasible as the companies are not financially able to.

WHO prioritize countries who are already at risk and countries that do not necessarily have a large number of confirmed cases but are at a potential risk. Countries who are suffering from the virus, such as the USA and UK, are one of the prioritized countries as they have the highest number of confirmed cases among other nations in the world. Countries with low income, usually small and those which have a poor medical infrastructure and protection, such as North Korea, should also be prioritized. Even though North Korea states that there have been no confirmed cases of COVID-19 in North Korea, they are considered as a low-income country with extremely poor health care conditions. This means that if there was a COVID-19 outbreak in North Korea, then it would be challenging to stop the spread of the virus in that area. In order to prevent any more uncontrollable situations, it is vital to keep those countries with possible risk under control. It is important to keep in mind that many nations do not submit actual numbers of confirmed cases and deaths to the WHO; which means that countries that actually need to be prioritized might not be able to even be considered to be prioritized.

Helping LEDCs with impoverished health care conditions with transport of the vaccine, logistics, distribution of vaccine among the nation, and medical personnel. As explained previously, some COVID-19 vaccines, such as Moderna and Pfizer-BioNTech, are sensitive to temperature and need special care to match the surrounding as the required temperature. As LEDCs already struggle to purchase vaccines from the market, international organizations such as the WHO, COVAX and ACT Accelerator can guide LEDCs in how to vaccinate with medical personnel's help. The problem is that it is

most likely that it is not safe for medical personnel to go to LEDCs and help them, and there are not enough amount of medical personnel in More Economically Developed Countries (MEDCs) too, as all nations are either at the risk or suffering from COVID-19.

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