

# A review of health security and vaccine diplomacy during COVID-19 pandemic

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## ABSTRACT

The coronavirus disease 2019 (COVID-19) pandemic raises several public health concerns that impact various aspects of people's lives. The severity and spread of infection are extremely rapid, spreading out of control globally. Aside from illness and death, it presents a slew of long-term health concerns among the population. Therefore, the pandemic has manifested into a major health security issue, impacting the population globally. Health securitization refers to recognizing the presence of an existential health threat, and authorities can devote resources to manage the risks. Although vaccinations are required for long-term management of this disease, the vaccination procedure is often plagued by access, efficacy, and vaccine prioritization issues. By employing an interpretative social science approach, the article argues that the COVID-19 pandemic needs to be securitized at the state and international levels, and vaccines as public-good should be accessible to everyone without discrimination or prioritization and diplomatic interests. The study found, firstly, that many countries have adopted health securitization and coordinated efforts by international agencies. Secondly, vaccine hoarding by richer countries has created a disparity in the rate and coverage of vaccination in other regions. Thirdly, vaccine donation by richer countries is only a temporary solution. A robust vaccine allocation mechanism is needed for more comprehensive and equitable vaccination coverage.

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## 1. INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic is the world's worst public health catastrophe to date. The authorities in Wuhan, China, discovered the first human case of the new coronavirus in December, 2019 [1]. According to reports, the wholesale market in Wuhan City either triggered the virus outbreak or had played a part in the initial spread of the virus. Starting in the Chinese province of Wuhan, the virus quickly moved over Chinese borders, and within a few months, it had spread to other countries of the world [2]. Outside of mainland China, the first confirmed cases were in Japan, South Korea, and Thailand. The World Health Organization (WHO) gave the Wuhan virus a new name, COVID-19, to avoid stigmatization of the outbreak to China, the origin of this virus. Subsequently, on March 11, 2020, WHO declared the COVID-19 outbreak a worldwide pandemic.

The pandemic has brought the entire planet to its knees. The pandemic is the largest public health disaster to hit the world in over a century. All countries are affected by the pandemic. It has impacted almost every aspect of people's lives. Besides public health concerns, the outbreak has caused significant interruptions in lockdowns, movement restrictions, school closures, social distancing norms and other measures. The closure of schools and universities has disrupted the studies of almost 300 million students [3]. Although schools have adapted to online learning, the technological restrictions have affected the learning process due to limited interaction between educators and learners [4]–[6]. As online learning progresses, learners are vulnerable to an increase in screen time exposure and mental distress [7]. The pandemic also causes psychological problems, manifested in depression and emotional stress, pandemic fatigue, domestic violence and suicides.

The pandemic has presented a number of public health issues to people all over the world. Millions of people are infected, and many have perished as a result of this infection globally. Despite the discovery of COVID-19 vaccines, this disease presents a persistent public health challenge, as it may cause a plethora of long-term health issues in the community. This scenario warrants some coordinated efforts between state and international agencies to manage the pandemics. Some may argue that the global nature of the pandemics has promoted greater cooperation among countries while putting other international issues and disputes on the back-burner.

This situation brings two critical public health issues that are important to the mitigation of this pandemic: health securitization and vaccine diplomacy. This paper argues that the management of the COVID-19 pandemic requires States to securitize the health sector, which means States should purposefully reallocate their national resources and activities to reduce the severity and spread of the virus and ensure population health. The paper also argues that vaccine is the most feasible long-term mitigation effort to contain the pandemic. The vaccine distribution to poorer countries by richer-vaccine producing countries via vaccine diplomacy initiatives can assist poorer countries in managing the pandemic.

Based on the review, the paper shows that many countries have securitized the COVID-19 pandemic to reallocate national resources, capacities, and activities to manage the pandemic effectively. For example, in Malaysia, the national security council coordinates major decisions and coordination regarding the pandemic. Based on the public health perspective, the article argues the need for health securitization at the state and international levels to ensure a better-coordinated effort in pandemic mitigation. This will enable agencies to allocate and divert resources for the management of this public health crisis. The article also argues for a more equitable access of COVID-19 vaccines to all countries and regions. Vaccination is seen as the primary long-term solution in managing the pandemic. It also argues that vaccine diplomacy, in terms of vaccination supplies and donations by richer countries is necessary, but should not be done due to vested parochial interests.

## **2. RESEARCH METHOD**

This paper adopts an interpretative social science approach to examine, firstly, the rationale for public health securitization at the state and international levels. Secondly, the usage of vaccines as a public good should be accessible to all people without any form of discrimination and prioritization. Vaccine prioritization is acceptable only when vulnerable and high-risk groups are prioritized. The authors examine the major arguments presented in the relevant literature and presents the analysis in the sub-sections. The authors chose the interpretative social science approach because it focuses on describing and interpreting the actual human interactions, meanings, and processes that constitute real-life organizational settings [8]. Interpretive methods posit that meaning-making by human agents are key in explaining the research phenomena. In this method, the researcher does not begin with predetermined notions but instead attempts to allow for the natural development of data [9]. The objective of the interpretative investigation is to uncover such meaning-making behaviours logically whilst still illustrating how these practices combine to create observable outcomes. This distinctiveness is evident in its study design, conceptualizing, data analysis, and evaluation [10]–[13].

## **3. RESULTS AND DISCUSSION**

The findings and discussion are presented in the sections below. The authors have divided this section into three themes: healthcare security, COVID-19 vaccine issues, and vaccine diplomacy. The first theme examines the need for securitization of the healthcare system in the face of the COVID-19 pandemic. The second theme examines issues concerning COVID-19 vaccination, while the third theme discusses vaccine diplomacy. Based on the literature, these themes appear to be significant in the management of the pandemic from a policy and management perspective.

### 3.1. Healthcare security

Health security has arisen as a significant security problem, particularly with the advent of diseases throughout the world. Health security refers to actions and policies that cross national boundaries in order to lessen public health care issues and preserve public health. WHO defines global public-health security as the actions required to lessen the risk and impact of major public health incidents that impair the health of the public [14]. It asserts that States have a responsibility to protect their citizens' health and well-being [15]. Programs such as the global health security agenda aim to improve the detection, prevention, and response to infectious disease through public health surveillance and international collaboration [16].

The risks to health security may come from many sources, including the increase in human contact due to travel and trade, the increase of drug-resistant and disease-causing pathogens, and the possibility for unintentional release, theft or illicit use of hazardous pathogens [17]. Further, the emergence of biosecurity threats such as bioterrorism has made the global health security issues more pertinent [18]. The more common health security issues include COVID-19, H1N1 SARS, malaria, tuberculosis, HIV/AIDS, and Zika, and are among the critical diseases currently afflicting people worldwide. These situations usually get worst with the impact of climate change. In addition, natural or human-made disasters can create internally displaced people and refugees, who are exposed to health issues due to their living conditions [19].

Therefore, the objective of global health security is to build strong and resilient public health systems capable of preventing, detecting, and responding to infectious disease threats anywhere on the planet. The COVID-19 outbreak has developed as a significant health security problem impacting individuals worldwide. It emerged at an alarming rate, disrupting people's health and incurring societal and economic ramifications. As such, the health securitization process is critical for enabling public conversation and knowledge in society, which leads to policy-making, prioritization of resources, and policy enforcement. The massive rise in global travel has made it easier for the virus to spread more quickly worldwide. As people become more mobile and economically interconnected, global health issues have become more common.

The impacts of the pandemic manifest in the mental health of the people significantly worldwide. According to a new WHO survey, the COVID-19 pandemic has delayed or suspended vital mental health services in 93% of nations around the world, even as demand for mental health services rises. Grief, isolation, loss of income, and fear are provoking or exacerbating mental health disorders. Many people may be experiencing increased levels of alcohol and drug abuse and insomnia and anxiety. Meanwhile, COVID-19 can cause neurological and mental side effects such as psychosis, agitation, and stroke. People with pre-existing psychiatric, neurological, or substance use issues are also more sensitive to COVID-19 infection, with a higher chance of severe outcomes, including death [20].

Apart from causing intense pressure on the well-being of societies worldwide, the pandemic has also impacted the healthcare system in many countries. Most countries face a shortage of equipments such as ICU beds, ventilators and personal protective equipment (PPE), which are vital in managing the health crisis [21]. In Malaysia, for example, given the severity of the situation, a special budget of Malaysian ringgit (RM) 600 million was allocated for the immediate purchase of necessary medical equipments [22]. Similarly, in Indonesia, an additional budget was allocated for the procurement of PPEs and other equipment in order to reduce the increased exposure of healthcare personnel to the virus, which resulted in an increase in infection and fatality [23], [24]. Furthermore, frontliners and healthcare professionals experience acute tiredness and burnout due to pandemic-induced changes such as increased workload, disruption in work-life balance, and strained relationships [25], [26]. These healthcare workers crucially require psychological assistance to build character strength that could reduce anxiety in order to perform duties well in a pandemic [27], [28]. In such times of crisis, the government has an important role in providing adequate support and facilities to protect the future well-being of healthcare professionals [29].

Globally, the pandemic has created many uncertainties, not only in the public health domain but also in the domain of human security. Since this pandemic is not anticipated to end anytime soon, it has made individuals more vulnerable to biosecurity threats [30]. The similarities between biological weapons and viral outbreaks are evident in the severe acute respiratory syndrome coronavirus (SARS-CoV-2) virus due to its "high transmission rate, long incubation period, airborne transmission, and significant morbidity/mortality" [31], [32]. Due to the novelty of the virus, there is an urgent need for collective action through governmental and medical collaboration to mitigate the risk of bioterrorism [33]. An effective strategy to communicate the risk of a possible outbreak is also necessary to prompt the public to take precautionary actions that could curb the spread of the disease [34]. Besides official intervention, citizen participation is critical to prevent the spread of incorrect information that might cause undue fear and panic. The lessons learned during the pandemic can improve the crisis-preparedness to better manage future global pandemics and biological attacks. As a result, health securitization becomes an essential process in the overall discourse, planning, policy-making and enforcement activities in the management of the pandemic. It essentially facilitates resources allocations, inter-agency cooperation and public discourses regarding the pandemic.

### 3.2. COVID-19 vaccines

Major outbreaks of the virus have been reported in every country in the world. As of September 14, 2021, WHO had received reports of 225,024,781 confirmed COVID-19 cases worldwide with 4,636,153 deaths [35]. It has also forced upon people the 'new normal' or different ways of doing things. Businesses are no longer as usual; everybody is forced to change their thinking and habits and become more concerned regarding public health security. The constant fear of the lingering deadly virus has brought new realization about the value of human lives. Following China's disclosure of the genetic sequence of SARS-CoV-2 in January, 2021, the race for developing COVID-19 vaccines began. Recognizing the need to produce fast vaccines to address the high rise in COVID-19 cases, many pharmaceutical companies started fast-track experiments and testing. Since the infections and death rate increase rapidly globally, it appears that the only way to stop the pandemic is vaccinating a large segment of the population world over. The hope is generating herd immunity against the COVID-19 virus in the general public.

Vaccination has appeared to be effective in protecting individuals from illnesses and disabilities, saving millions of lives. As Plotkin and Mortimer assert, "the impact of vaccination on the health of the world's peoples is hard to exaggerate. With the exception of safe water, no other modality has had such a major effect on mortality reduction and population growth" [36]. Vaccination, sanitation, and clean drinking water are undeniably responsible for global public health improvement. Vaccines have saved 6 million lives per year from vaccine-preventable illnesses [37]. For example, polio was one of the most feared diseases of the twentieth century, especially among children. However, thanks to successful vaccination programmes around the world, polio is nearly eradicated. Vaccines shield against many severe diseases, including cervical cancer, cholera, COVID-19, diphtheria, Ebola, hepatitis B, influenza, Japanese encephalitis, measles, meningitis, mumps, pertussis, pneumonia, polio, rabies, rotavirus, rubella, tetanus, typhoid, yellow fever and many others. Without vaccines for these diseases, human suffering and the loss of millions of lives could not have been prevented.

Vaccines also reduce the risk of spreading in the community. COVID-19 vaccinations began to be distributed in December, 2020 [38]. A global vaccination drive began. In that process, competition to secure vaccines from the vaccine manufacturers began. Since then, a total of 5,534,977,637 vaccine doses has been administered as of September 14, 2021 [35]. WHO was consulted for guidance, assistance, and expertise around the world. It coordinated international efforts to provide advice and support to countries worldwide, particularly in establishing the basis for vaccination programmes in many countries. WHO issued "Guidance on developing a national deployment and vaccination plan for COVID-19 vaccines" on November 16, 2020, to aid nations in organizing their national vaccination programme [1]. This guideline comes just over several months after WHO proclaimed the COVID-19 outbreak to be of the highest level of urgency, impacting public health emergencies worldwide. WHO declared COVID-19 a pandemic in March, 2020, paving the way for vital enhanced cooperation between governments, countries, scientific community, civil society, and global health agencies, under the banner of the 'Access to COVID-19 Tools (ACT) Accelerator.'

The ACT Accelerator, launched in April, 2020, ensures that countries have fair access to COVID-19 diagnostics, treatments, and vaccines. One of the key elements of ACT Accelerator is COVAX. The COVAX framework subscribes to the responsible for ensuring that no one is denied access to COVID-19 vaccines once they become available. COVAX offers doses for at least 20% of countries' populations, diverse and actively managed portfolio of vaccines, vaccines delivered as soon as they are available, end the acute phase of the pandemic and rebuild economies. The goal of COVAX is to stop the pandemic's acute phase by the end of 2021. WHO has been enabling the pooling of wealthier nations' purchasing power to enable key investments in manufacturing facilities, ensuring that the global scale of vaccine production is sufficient [1], [39].

Therefore, the development of vaccines is critical in reducing the spread of COVID-19 transmission. Besides measures such as social distancing, quarantine and isolation, and contact tracing, the public vaccination programme can effectively protect individuals from the COVID-19 infections by boosting their overall immunity against the virus [40]. The goal is to achieve herd immunity in the public through vaccinating large segments of society. This scenario has resulted in countries competing to secure enough vaccines for their population, especially as the production of vaccines is far less than the demand. As such, it is critical to maintain global vaccination availability through adequate manufacturing and timely deployment to satisfy growing demand [38], [41]. In spite of the urgency for global vaccination, it is imperative that the risks associated with new vaccines are adequately evaluated as studies have shown that vaccines could aggravate the disease and cause T helper 2-type immunopathology [42], [43]. As such, vaccine manufacturers and medical regulators should prudently research the health issues associated with the vaccines before making them available to the public [44].

COVID-19 vaccinations are a long-term strategy for managing the pandemic. The medical community and the general public must continue to recognize the risk of infection and observe standard

operating procedures until the vaccine is available to everyone. Health authorities globally have allocated massive resources to secure vaccines for the people, to manage the health, economic and social impacts of the pandemic. In the case of Malaysia, the government spent RM 2.05 billion to secure 26.5 million COVID-19 vaccines [45]. However, the success of the vaccination programme depends on the acceptance rate of the target population [46]. This rate is dependent on the perceived risk, benefits and susceptibility of the vaccination as these factors influence the intention among the general public [47]. To achieve a high acceptance rate, it is critical to address the concerns of hesitant individuals, as vaccination resistance might impede herd immunity [48], [49]. Vaccine-hesitation is usually due to anxieties on the side effects of vaccination, inadequate or incorrect information, coupled with religious and cultural factors [50]. Therefore, building trust in vaccine safety and efficacy among the people is critical to increase public confidence, which may lead to higher uptake in vaccination [51].

### 3.3. Vaccine diplomacy

Vaccine diplomacy refers to the use of vaccines as a tool of diplomacy, which aims to raise the diplomatic status and influence of vaccine donor countries. The medicine or vaccine diplomacy goes back to the nineteenth century when England provided the smallpox vaccine to the European and the new world countries [52]. Vaccine diplomacy continued when WHO launched a global drive to eradicate smallpox in the 1960s. Following the outbreak of the COVID-19 pandemic, vaccine diplomacy once again gains prominence in international relations. The term "vaccine diplomacy" has become a common catchphrase and a new inclusion to the COVID-19 pandemic vocabulary. Some countries use vaccine donations and sharing to improve regional ties, influence and international reputation [53]. The primary approach of 'vaccine diplomacy' is bilateral diplomacy, in which the giving state interacts directly with the receiving state. It is done by donating vaccine supplies directly to the receiving state. On the other hand, multilateral diplomacy is utilized to ensure equal access to COVID-19 vaccines through participation in the COVAX alliance. Lesser developed countries favour COVAX coordination because it safeguards their interests in obtaining vaccines. This mechanism is vital as many poorer countries lag far behind those other countries in vaccination. A large segment of the population is still not vaccinated due to the scarcity of vaccine supplies [54].

Despite these measures, there remains a disparity in vaccination access between wealthy and poorer nations. Because many vaccine manufacturers are situated in wealthy nations such as the United States, United Kingdom, China, and Russia, many vaccines have been diverted to meet the requirements of these countries. These countries are under enormous internal political pressure to prioritize vaccination supply for local use, a phenomenon known as vaccine nationalism. WHO has chastised these affluent nations for stockpiling coronavirus vaccinations, treatments, and protective gear. The reluctance to allocate these resources equitably is causing an increase in COVID-19 infections worldwide. Till September 2021, the United States had fully vaccinated 53% of its populace and had already administered booster doses to over 1.3 million people. The European Union has fully vaccinated 57% of its population and is administering booster doses in France and the United Kingdom. However, by comparison, Africa has only fully vaccinated 3% of its population against COVID-19. Furthermore, 26 African nations have dispersed less than half of their overall vaccination supply. Judging by the current vaccination rate, the WHO estimates that almost 80% of African countries would be unable to vaccinate the 10% of their people most vulnerable to severe COVID-19 symptoms by the end of September, 2021 [55].

Many countries have criticized stockpiling and hoarding of vaccine supplies. As a result, some vaccine manufacturers and wealthy countries have offered donations of vaccines to many poorer countries—an initiative known as vaccine diplomacy. Such initiatives also place these donor countries in positions of influence with these countries. Vaccine-producing countries may use vaccines as a soft power tool to advance their national interests and solicit some future favours. Even though vaccine diplomacy may foster beneficial ties between donor and recipient countries, it must still work in tandem with the donor country's overall foreign policy posturing. China and Russia are at the forefront of vaccine diplomacy. China has actively promoted its COVID-19 vaccination across the world. China has been criticized for spreading the virus and for being hesitant to provide information about the epidemic. As a result, presumably, to deflect international criticism, it has attempted to present itself as a remedy for the pandemic. This, however, does not suggest that Chinese vaccines are given away for free. Vaccines were provided to certain countries, while others had to buy them. Loans were offered to Latin American and Caribbean countries in order for them to purchase Chinese vaccines [56]. China's vaccines have been supplied to approximately 80 nations worldwide [57]. Hundreds of millions of vaccines have been sold and distributed, mainly to poor African nations and certain strategically important Asian countries such as Pakistan and the Philippines [58]. Southeast Asian countries also benefitted from China's vaccine diplomacy. These countries account for 29% of China's overall vaccine donations and 25.6% of its global vaccine sales [59].

The rise in COVID-19 infections globally and the competition among nations to secure the limited supply of vaccines gave Russia an opportunity to bolster its soft power by offering its Sputnik V vaccine to

the world [60]. Russia's primary target markets are poorer nations, particularly countries badly hit by the COVID-19 outbreak. The demand for Sputnik V grew due to the scarcity of vaccine options. It was particularly attractive to less-developed countries at a time when Western countries were struggling with vaccination rollouts. The Sputnik V has been supplied to almost 70 Asian and Latin American nations, including Ghana, Hungary, Nigeria, Argentina, Peru, the United Arab Emirates, and the Philippines [61]. The preceding discussion clearly demonstrates that vaccine diplomacy can be a reliable mechanism for ensuring equitable and fair access to the COVID-19 vaccine for the poorest and most vulnerable populations. Despite some issues, the authors argue that many developing and least-developed countries have benefited from direct vaccine supplies from richer vaccine-manufacturing countries.

#### 4. CONCLUSION

In conclusion, the authors present several primary findings. With the emergence of epidemics throughout the world, health security has emerged as a significant security problem. Therefore, the objective of global health security is to build strong and resilient public health systems capable of preventing, detecting, and responding to outbreaks of infectious diseases. The study shows that many countries have adopted health securitization in dealing with the COVID-19 pandemic. This action is essential to ensure the adequate allocation of resources to manage the health crisis. This also enables the health authorities to rope in other enforcement agencies like the military, police and the civil defense forces to manage the observance of social norms associated with the mitigation of this pandemic. The study also shows high levels of cooperation between countries and international health agencies such as the WHO. The sharing of data, information and expertise between international health agencies, public health think tanks and governments is key to the effective management of this global pandemic. No one country, singularly, can manage this pandemic.

The study also finds that vaccine nationalism that promotes vaccine hoarding behaviour by richer countries has created a disproportion in vaccination rate and coverage in other regions, especially in the less developed countries. A significant proportion of vulnerable communities in Africa, some regions of Asia, and Latin America have very low vaccination coverage. The study shows that the vaccine diplomacy initiatives such as the sale or donations of vaccines to specific countries are not a tenable solution to manage the pandemic in the long run. As the COVID-19 vaccine have been regarded as a public good, all efforts should be made by the vaccine producing countries and international systems to ensure the vaccine are distributed proportionately to all countries worldwide-everyone should have equal access to vaccines. More affluent countries should not use diplomatic means to pressure other countries for favours in return for vaccines. As a result, the authors believe that a robust vaccine allocation mechanism is required for more complete and equitable vaccination coverage.

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