Responses to COVID-19 by Selected East African Governments: Case Studies of Uganda, Rwanda, Tanzania, and Kenya

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ABSTRACT

COVID-19 has caused immeasurable and untold social, political, economic, and emotional suffering around the globe. It has pushed millions of people into extreme poverty and has brought devastating and everlasting impact on the already fragile health system around world. It has accentuated inequalities as was witnessed in vaccine distribution between global South and global North. The study process consisted of a desk study of available documentation on Covid 19. The main findings indicate that the world should embrace the fact that COVID-19 is here to stay, we need to learn and prepare how to live with it. Many countries that have struggled should learn from countries that have managed the pandemic well. In East Africa, Rwanda has done a tremendous job in curbing the impact of COVID-19 and may be worth emulating by African countries.

Key words. Response to Covid19, East African countries

1. INTRODUCTION

The COVID-19 pandemic continues to dominate narratives on global economy and global health. World Health Organisation (WHO) first declared COVID-19 to be a public health emergency of international concern on 30 January 2020, and subsequently declared it a pandemic on 11th March, 2020. At first, African nations seemed to have escaped the effect of COVID-19 outbreak mainly due to fewer connections from the rest of the world especially from Europe and China. However, as time went by, the continent's capitals experienced the brunt of the virus mainly through international flights (Mishra, 2020). In Africa, the first case was reported in Egypt on February 14, 2021, and the virus has since spread in all 55 countries like a wild fire causing

approximately 5.6 million deaths. However, The Economist indicates that there are 20 million estimated global deaths worldwide (The-Economist, 2022).

It has become clear that what happened in the first weeks of the outbreak of COVID-19, indicates that China knew the danger long before it told the rest of the world the truth. Toward the end of December 2019, hospitals in Wuhan Province were known to be quarantining sick patients and medical staff members were falling sick; clear evidence of human-to-human transmission—the first step toward a pandemic. Not until January 20, 2020, did Chinese authorities publicly admit that the virus was clearly passing from person to person. Three days later they shut down the city of Wuhan. By this time, the virus had weeks to spread far beyond China's borders and was beginning to establish outbreaks globally (Tufekci, 2022). It should be remembered that influenza pandemics are very hard to predict and can have devastating consequences on health and the economy worldwide. The outbreak of the COVID-19 pandemic has elicited a myriad of responses in different countries. It has turned the world upside down; and it is envisaged that the entire world will inevitably and endlessly be engrossed in addressing the consequences of this virus. World leaders are working diligently to ensure that big strides that were made in recent decades on improved livelihoods are not destroyed by the pandemic.

On the precipice of the pandemic, too many important officials (whether at WHO or the CDC) failed to understand how the virus was spreading despite emerging evidence. As a result, such officials failed to effectively limit the spread of the virus, leading to thousands of deaths. For example, it wasn't until December 2020 that the WHO started recommending mask-wearing, stressing the need for ventilation and advising the public to avoid the indoors regardless of distance. It wasn't until December 2021 (two years later, after the virus started), that the WHO recommended highly protective masks for healthcare workers (Tufekci, 2022).

The greatest scientific achievement or breakthrough of the pandemic may have been the speedy development of safe, effective vaccines. The two immediate problems were limited supply and lack of commitment to how vaccines could be distributed fairly around the world. Wealthy or rich countries that had preordered or financed research (such as the USA) got most of the initial vaccine doses. Vaccine production grew, but too slowly. There was no consortium or sharing of resources to ramp up supply. Technology was not transferred to lower- and middle-income countries. Patents were left in place. The WHO initiative to get vaccines to poorer countries, known as COVAX, was not able to purchase enough doses and donations that were made were both insufficient and haphazard. In a largely unanticipated manner, dangerous variants of the coronavirus started emerging in late 2020 such as Alpha, Delta, and then Omicron. It is possible that widespread earlier vaccination could have helped limit the possibility for these variants emerging ((Tufekci, 2022).

In the past two years, a widespread outbreak like the one that happened in Europe had been followed by a similar surge in the United States some weeks later. China and Hong Kong both

experienced rapid and severe outbreaks. However, the strict "zero COVID" policies they have enforced make them less similar to the United States than Western Europe. According to health experts, a number of variables including relaxed precautions against viral transmission, vaccination rates, the availability of antiviral medications and natural immunity acquired by previous infection, may influence the course of any surge in the United States. Most importantly, it is not yet clear how many people will become severely ill, stressing hospitals and the health-care system as Omicron did. According to White House Press Secretary, Jen Psaki, 35,000 cases of BA-2 have been reported in the USA to date. However, she confidently indicated that the tools we have (sic) including mRNA vaccines, therapeutics and tests—are all effective tools against the virus (Bernstein and Achenbach, 2022).

2. LITERATURE REVIEW

The Evolution of COVID-19

Since the outbreak of COVID-19 in December 2020 in Wuhan Province in China, World Health Organisation (WHO) has been working with global network of expert laboratories to support and better comprehend SARS-CoV-2, the virus that causes COVID-19. WHO's global SARS-CoV-2 laboratory network includes a dedicated SARS-CoV-2 Virus Evolution Working Group, which focuses on detecting new mutations quickly and assess their possible impact (WHO, 2020).

Since then, several coronavirus variants have been identified and are under investigation. Each new variant raises questions: Are people more at risk for getting sick? Will the COVID-19 vaccines still work? Are there new or different things you should do now to stay safe? A variant of concern has been observed to be more infectious, and is more likely to cause breakthrough infections or reinfections in those who are vaccinated or previously infected. These variants are more likely to cause severe disease, evade diagnostic tests, or resist antiviral treatment. Alpha, beta, gamma, delta and omicron variants of the SARS-CoV-2 coronavirus are classified as variants of concern (Bollinger, Maragakis and Ray, 2022)

Omicron and how it was spotted.

Omicron was a new variant that is milder but spreads faster. It was first detected in South Africa in November, 2021 by South African scientists when they were conducting routine genomic surveillance of SARS-CoV-2 (Bright 2022). There emerged an anomaly and worrying variations in genomes and one of the PCR tests read "S-gene target failure" the anomaly which continued in several subsequent tests (Sharfstein, 2021). The new variant struck at a time when millions of people were travelling for Christmas and New Year holidays. Those who insisted on their itinerary massively spread the virus. In an article written by Wu in *The Atlantic,* scientists confirm that

Omicron is contagious and spreads so fast. It is even hard to envisage where we stand in relation to the virus' peak. Currently, it is hard to fully track Omicron's spread for there is no infrastructure to test and trace hence becoming hard to predict and forecast what awaits in the coming months. The decline could be sharp and fast, or sputtering and slow. It could start off steep, then lose steam. It could plateau or even reverse course and tick back up (Wu, 2022).

Omicron as a new variant seemed to spread so fast but causes less severe illness than erstwhile variants for it leads to less hospitalization, and milder hospitalization. Less number of people need hospital care, symptoms are milder on average compared to people who were hospitalized in previous variants like delta (Leonhardt, 2022). Consequently, there were some speculations that Omicron may help in reaching herd immunity (Wolf, 2022). Epidemiologists contend that certainly there will be more waves, but they won't be so devastating because people will already be infected with the virus, others vaccinated hence more immunity, and few vulnerable hosts in the long run. It is yet to be known whether Omicron and Delta variants are co-existing or the newest variant knocks out the old variant.

Despite being reported to be less devastating, Omicron was already wreaking havoc in many countries, for instance, Hong Kong has canceled flights from eight countries including the United States; in Brazil the famous Carnival Street parties in Rio de Janeiro have been canceled; the 64th Grammy Awards in Los Angeles have been postponed and many other big events (Wolf, 2022). A report by CNN reporters indicates that Australia recorded 74 deaths caused by Omicron in a single day on 17th January, 2022. In New Zealand, on 23rd January 2022, CNN reported that the Prime Minister has canceled her wedding due to increase in the Omicron cases in the country (Guy et al., 2022).

Scientists seem to suggest that the only way to contain Omicron and other subsequent variants is to certainly make Covid-19 endemic. In doing so, multifaceted efforts by scientists around the globe especially on genomic surveillance which monitors the way virus changes and spreads should be given utmost attention. Scientists should work together the way South African scientists did (Bright 2022). Returning to normal will necessitate global efforts to reduce and mitigate the devastation COVID-19 has had and is continuing to have on the human and financial health of countries (Foresight Africa, 2022).

According to a top health official in Europe, the astonishing spread of the Omicron variant could help set the stage for the pandemic to transition from overwhelming to manageable in Europe this year. Such a transition may offer the world a glimpse at how countries can ease restrictions while keeping the virus away from their populations. However, countries in Europe and globally, have to exercise caution: Immunity from the surge of infections will probably wane and new variants are likely to emerge, leaving the world vulnerable to surges that could strain health systems. For example, in the United States, where vaccination rates are lower and death rates

are considerably higher than in Western Europe, there are bigger hurdles on the path to taming the pandemic (Mueller and Santora, 2022).

According to scientists, the Omicron variant is expected to leave behind much higher levels of immunity in the population, but whether the world will have to endure deadly and disruptive future surges of the virus before the pandemic stabilizes is not at all clear. Experts believe that precautions such as testing and isolating would remain essential. Furthermore, if coronavirus cases climb in the coming winters, short-term mask mandates could be a way of suppressing cases to help hospitals dealing with other respiratory cases to cope. However, the Director General of WHO, Dr. Tedros, said that it is dangerous to assume that Omicron will be the last variant or that we are in the end game. Rather, he maintained that "on the contrary, globally, the conditions are ideal for more variants to emerge" (Mueller and Santora, 2022).

No previous variant has spread nearly as fast as Omicron, with reported coronavirus cases increasing from 600,000 a day worldwide in early December 2021 to more than three million in January 2022. Even countries across Asia that have pursued a "Zero-COVID" policy with stringent lockdowns have experienced steep challenges preventing outbreaks of Omicron. The very speed and breadth of the Omicron surge has left some public health experts and officials to believe cautiously how quickly countries can emerge from the Omicron wave. The sharp rise in cases in countries already overrun by Omicron has often been followed by a remarkable decline, as in South Africa and Britain (Mueller and Santora, 2022).

Vaccination inequality and inequity

According to health experts, vaccine equity is not a charity; it is an epidemiological necessity. They are concerned that the longer the virus continues to spread unchecked, the higher the risk of more deadly or contagious variants emerging (Collins and Holder, 2021). Global roll out of Covid-19 vaccine is not inclusive and adequate (Foresight Africa, 2022). Over 60 percent of the global population has received at least one dose of COVID-19 vaccine. However, 72 percent of the vaccine has been administered in high and upper middle-income countries while 0.9 percent in low-income countries (Bright 2022). We are witnessing two diverging and parallel worlds: the rich and vaccinated as well as the poor and the unvaccinated, the latter being Africa (Foresight Africa, 2022; Ahmed et.al, 2022). Over 1.2 billion Africans have not got a single jab of vaccine and at this rate, it is projected that many more Africans may not be vaccinated until 2023 (Padma, 2021). Hundreds of millions of people who have suffered disproportionately during this pandemic were already likely to be more disadvantaged: more likely to live in low- and middle-income countries, to be women or girls, to belong to socially discriminated-against groups, to be informal workers (The Economist, 2022). The wealth of the 10 richest men has doubled, while the incomes of 99% of humanity are worse off, because of COVID-19 (Lawson and Jacobs, 2022). We argue that the only sustainable solution is for nations and organisations around the world to form an

alliance aimed at breaking the monopoly surrounding vaccine distribution, treatment, access and manufacturing of the vaccines in every part of the world.

Most wealthy countries have vaccinated significant shares of their populations and have rapidly moved into the booster dose phase. However, one year into the global vaccine roll out, the gap between vaccination rates in high—and low—income countries is wider than ever before. Poorly vaccinated countries (mostly in Africa), face several challenges. a) Early in the rollout process, some countries were not able to secure enough doses to inoculate their residents, and many still face shortages. b) In other countries, supply is only part of the challenge. In such countries there were infrastructure issues and the public's level of willingness to get vaccinated has posed as a larger obstacle than supply. c) Some countries that have below average vaccination rates are using most of the vaccine doses they have on hand, and some are not. Most of the countries with high vaccination rates have used most of the doses delivered to them such as Rwanda (Collins and Holder, 2021).

For a country using most of its available doses but still has a low overall vaccination rate that is a sign of a supply problem. It means the country is not receiving an adequate number of doses to immunize its willing population. However, if a country with a low vaccination rate is using a smaller share of the doses it has on hand (and discarding the expired doses), it suggests demand in the country is weak, or it lacks the infrastructure to distribute vaccines effectively. In the early days of the pandemic, when drug makers were just starting to develop vaccines, wealthier countries were able to pre-order enough to cover their populations several times over, while other (and especially poor) countries had trouble securing any doses. Those early purchases have led to continued gaps in vaccination rates. Hence, disparities in vaccine purchases have led to disparities in vaccination coverage (Collins and Holder, 2021).

In East Africa, equitable access to COVID-19 vaccines is very paramount in ensuring that every person has the right to enjoy the best state of physical and mental health in the context of Covid-19 pandemic. Nevertheless, pharmaceutical companies continue to prioritize supplying high-income countries who are also stockpiling more doses than they can use, while blocking attempts to increase supplies by supporting the temporary waiver of intellectual property rights and increased sharing of technology and know-how. To date, less than 8% of people in Africa have been fully vaccinated against Covid-19. East Africa, the Horn and Great Lakes region includes some countries with the lowest vaccination rates in the world. The Democratic Republic of the Congo (DRC), Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda are all eligible and participate in the COVAX Facility. While COVAX has reported increased vaccine availability in recent months, it is still unable to supply sufficient vaccines in the region to meet the WHO's 40% vaccination target by the end of 2021 (Amnesty International, 2021).

Global vaccination mandates

Individual nations around the globe are enforcing mandatory vaccination in order to control the spread of the virus. For instance, in Greece, according to the new vaccine mandate, the government will impose fines of $114 per month on adults over the age of 60 years who are unvaccinated. A report published by The White House on 14th January 2022 indicates that the US government has launched a website for all citizens to sign up for free Covid-19 tests. This has come as a result of devastating damage caused by Omicron. The unvaccinated ought to go for the fourth Pfizer/BioNTech or Modena vaccines in order to boost antibodies though researchers contend that it is not enough to be safe from Omicron infection. It is possible to posit that since someone gets all four doses but cannot be free Covid 19 infection, this might trigger an increase in low rates of willingness to acceptance Covid-19 vaccines globally. There are millions of people who have opted to lose their jobs rather than get Covid-19 vaccine jabs. BBC published a report on significant number of Americans who have decided to step down from their jobs rather than getting Covid-19 vaccine jabs. It is worth mentioning that vaccine mandates have hit a snag in some countries. For instance, mandates with individual and private sectors in North America and European Union have met challenges, however those resisting are a minority, in the US, and these have experienced a high hospitalization and high death rate (The White House,2022).

The mandate for Austria, where about 74 percent of the population has received at least two doses of vaccines, officially took effect early February; but enforcement was not scheduled to begin until the week of March 15, 2022. However, it was be temporarily suspended, but the legal framework will still be in place in case another, more dangerous variant became dominant in the future. Austria has been the only European country with a general vaccination mandate that extended to all adults. The turnaround speaks to how the pathology of the Omicron variant has influenced the way in which Austria and other European countries are adjusting their virus strategies. Austria's announcement came a week before German lawmakers were set to discuss a proposal to impose a vaccine mandate of their own. However, lawmakers critical for its passage in Parliament expressed doubts about its necessity now (Schuetze, 2022).

The WHO, in the middle of 2021, began promoting an ambitious goal of ending the pandemic by fully vaccinating 70 percent of the population in every country against COVID-19 by June 2022. Now, it is clear that the world did not reach this goal by June 2022. There is a growing sense of resignation among public health experts that high COVID vaccination coverage may never be achieved in most lower-income/developing countries. This is mainly because badly needed funding from the United States is drying up and both governments and donors are turning to other priorities. Only a few of the world's 82 poorest countries—including Bangladesh, Bhutan, Cambodia, and Nepal—have reached the 70 percent vaccination threshold. The majority of the countries are under 20 percent (Robins and Rebecca, 2022).

Dr. Hans Kluge, the Director for the WHO's European region warned in a statement that it was too early for nations to drop their guard, with so many people unvaccinated around the world. However, he said that "between vaccination and natural immunity through infection, Omicron offers plausible hope for stabilization and normalization" (Mueller and Santora, 2022).

Vaccination drives in the selected African countries

A report by Africa CDC indicates that more than 90 million donated doses have been delivered in Africa through COVAX and AVAT, and millions via bilateral arrangements. AVAT and COVAX aim at accelerating access to and roll out of Covid-19 vaccines in Africa (Africa CDC, 2021). In Uganda, vaccination started on March 3, 202. The government has prioritized Covid-19 vaccination in order to curb the spread of the virus in the country. A report by Africa CDC indicates that Uganda falls under top four countries in terms of willingness to accept Covid-19 vaccines. As of January 28, 2022, over 14,409,368 doses have been administered out of 32,354,460 doses that have been received in the country. This is equivalent to 48.57 percent of population covered (Africa CDC, 2021). The Ministry of Health intends to implement vaccination mandate following presidential directive. By the end of March 2022, in the transport sector, all passengers aged 18 years and above will be required to present full vaccination certificates before accessing Passenger Service Vehicles (PSV). Only passengers below the age of 18 will be allowed since they have not been targeted for the Covid-19 vaccination (MoH Uganda, 2022). Africa remains the world's least vaccinated continent against Covid-19 with about 11 percent of the 1.3billion people fully vaccinated. There are only six out of 54 countries that have met the global target of vaccinating 40% of their population against Covid-19 (Muhumuza, 2022).

Rwanda began its COVID-19 vaccination program early March 2021—using the Pfizer vaccine making Rwanda the first African nation to administer the drug. According to the MOH, "the nation's vaccination plan would prioritize high-risk groups first, including the sick and the elderly, as well as front-line medical workers." According to the Minister, "the government's goal was to vaccinate 30% of Rwandans by the end of 2021, and 60% by the end of 2022." The Rwandan Government of President Paul Kagame, which prides itself on efficiency and technological prowess, has installed special infrastructure to keep the Pfizer vaccine at the recommended 80 to 60 degrees Celsius (Voice of America, 2021).

Under the COVAX initiative, Rwanda received its first shipment of nearly 350,000 doses of the AstraZeneca vaccine at the start of March 2021. Within 9 days, about 250,000 people had been vaccinated! How did they achieve this so fast? Army helicopters were deployed to get doses to the remotest communities. People most at risk of infection or death were prioritized. It is not clear if Rwanda will receive enough vaccinations in a timely manner to cover its whole population (Mitchell, 2021). A report by WHO indicates that the country hit a WHO year-end target of having more than 40 percent vaccination coverage. As of December 2021, 5.2 million people out of 13

million people were fully vaccinated. It is estimated that if that trend is sustained, Rwanda is likely to hit 70 percent inoculation target by mid-2022 (WHO, 2021). And indeed, as of January 28, 2022, more than 16,325,616 doses have been administered out of 19,661,030 total doses received in the country, and this translates to 79.39 percent of the population covered (Africa CDC, 2021).

In Kenya, vaccination of the adult people against Covid-19 pandemic commenced in March 2021 while vaccination among the teenage population commenced in November with Pfizer. Over 10.1 million doses of 5 types of vaccines were administered by the end of 2021. As a result, 4.2 million people were vaccinated while 5.9 million people have received at least one dose (MoH Kenya,2022). Ministry of health report further indicates that at the commencement of 2022, and due to massive global reports of declining immunity from Covid-19, the country began the exercise of administering the 3rd dose as booster shots to all eligible adults until June 2022 (MoH Kenya, 2022). The good news is that willingness to accept Covid-19 vaccine is high. However, willingness vary according to regions, for instance, the lowest willingness to accept the vaccine was reported in North East and coastal regions (Africa CDC, 2021). Kenyan government plans to fully vaccinate 19 million adults (70% of the adult population) by end of June 2022 and the entire adult population of 27 million people by the end of the year. During the same period, it will also aim to fully vaccinate 2.9 million teenagers aged 15-17 years (50% of the population) and the entire teenage population of 5.8 million by end of December 2022 (MoH Kenya, 2022).

Kenya had received a total of 16,201,670 vaccines by December 5, 2021. It had administered about 7,583,134. It was reported that while vaccine acceptance is reportedly high, there is still a long way to go towards the government's target of fully inoculating the adult population of about 30 million by the end of 2022. Furthermore, as of December 6, 2021, about 10% of adults (2.9 million people) had been fully vaccinated while another 16% (4.9 million people) had received their first dose (Vera, 2021).

In Tanzania, the country launched its mass vaccination campaigns in July 28, 2021 after receiving the first batch of over one million doses through COVAX programme. By the end of December, 2021 over 2.4 million doses of Covid-19 have been administered (Faria, 2022). As of January 28, 2022, over 4,078,030 doses have been administered out of 9,626,720 doses that have so been received in the country, and this accounts for 9.19 percent of population covered (CDC Africa 2021). It should be remembered that Tanzania has low rates because the former head of the state John Pombe Magufuri was hesitant on accepting COVID-19, and thus, vaccination started after his death.

It is worth noting that several vaccination drives around the globe have been launched in order to increase the uptake and acceptance of the vaccine. The Johns Hopkins Bloomberg School of Public Health has launched free virtual course to train a cohort of ambassadors, parents of school-

going children, teachers and school staff. Among the things to learn include sharing knowledge about COVID-19 and the COVID-19 vaccine; engage in conversations about vaccine hesitancy in a respectful and empathetic way; recognize and respond to misinformation about the COVID-19 vaccine; and direct people to credible sources for further information about the COVID-19 vaccine (The John Hopkins University, 2022).

In Africa, supplies of vaccines are now more plentiful, but they are unpredictable and often several brands at any time. Vaccine supply in the lowest-income countries is growing more plentiful, but it is often unpredictable and haphazard; arriving on an irregular schedule and making planning hard. Underfunded health systems still lack the storage, personnel and transportation needed to carry out broad and effective vaccination campaigns. African countries continue to rely in part on products and dosing schedules that many researchers believe offer lower levels of protection, further compounding the prospect of stopping potential variants (some of which such as Omicron may originate from Africa). Many are sticking with regiments that are no longer preferred by the WHO, which developing countries look to for guidance on how and when to give COVID vaccines (Robins and Rebecca 2022).

With COVID vaccination rates averaging about 14 percent across Africa, public health experts expect the continent to experience a fifth wave of the virus in the coming months, potentially from a new variant that could be more lethal. In Sierra Leone, the target is to give primary immunizations to 40 percent of the population by June 2022, but this is according to experts very unlikely. Currently, the vaccination rate in Sierra Leone is 12 percent, and almost no one has received a booster shot (Robins and Rebecca 2022).

Vaccine deliveries are now coming to Africa faster than many vaccination programs can get them into arms. Some African governments have had to ask manufacturers to pause shipments until they can use up what they have on hand. An African Union official indicated that the bloc had effectively stopped ordering more vaccines until countries could use a recent influx of donated doses from China and COVAX, the clearing house that orders vaccines for poorer countries and delivers doses donated by other countries. Finally, in most African countries, there are too few vaccines as well as the equipment and trained people to administer them (Robins and Rebecca 2022).

Vaccines have largely reduced the virus's ability to kill, and its destructive impact on health services. However, the challenge has shifted from mass mortality to a question of how to keep essential services and work places running. In addition, COVID-19 is not yet mild enough to be treated like the common cold because it makes people so ill that they cannot work. Furthermore, while Omicron is milder than Delta, it is still hospitalizing and killing people, especially those who are unvaccinated, the clinically vulnerable (including some for who vaccines are ineffective, and

the elderly). And waning immunity for those vaccinated is still an ongoing concern, making sure that boosters are provided at the right time (Sridhar, 2022).

Efforts aimed at testing, tracing and quarantining globally

Efforts towards testing, tracing and quarantining worldwide were viewed different in different countries. In New Zealand, the occupation inspired by the recent anti-government protests by truck drivers in the Canadian Capital, Ottawa, was a response to New Zealand's highly restrictive approach to the pandemic. This approach permitted the country to go for months without a single case of community transmission. Overall, this approach has saved thousands of lives of people over the past two years. As in Canada, a segment of people engaged in demonstrations against COVID-19 restrictions and vaccinations were part of the far right-wing nationalist groups (Natasha, 2022).

In Germany, Germany's far right, which used anger over an influx of refugees from Syria and Europe's debt crisis has seized on the virus as its latest cause. The messaging of those organizing protests against politicians and the state claim the State is failing, democracy is subverted by shady "globalists" and the people are urged to resist (Bennhold, 2022).

The Government of Hong Kong is struggling to contain the city's worst COVID outbreak caused by the Omicron variant. Some residents have panicked and emptied supermarket shelves of food; raided drug stores for pain and fever medication. Those who can afford have taken flights out of the city. Under pressure from Beijing to eliminate infections, Hong Kong officials have vowed to test all 7.4 million residents of the city. Such an operation would require restricting people's movements including lockdowns. Government has remained ambiguous on this matter. Hong Kong is still trying to eradicate the coronavirus rather than live with it. It has a very strict strategy of isolating every case found, regardless of severity and symptoms. It also imposes quarantine orders on people considered close contacts, despite a shortage of facilities and employees to manage cases. The Outbreak and the government's policies have hurt the City's working class. Many service employees have lost their jobs as thousands of businesses have gone bankrupt (Stevenson, 2022).

Vaccinations and their impacts

According to a recent poll, many Americans believe COVID-19 is probably never fully going away; many feel they will be stuck with COVID-19 forever. They believe it has become endemic and will be stuck with it forever. A poll from the Associated Press – NDRC Center for Public Affairs Research shows that few or just 15% say they'll consider the pandemic over only when COVID-19 is largely eliminated. By contrast, 83% say they'll feel the pandemic is over when it's largely a mild illness. The same poll shows "that 59" of Americans think it's essential that they personally

be vaccinated against COVID-19 to feel safe participating in public activities. The poll shows that more Americans are taking precautionary measures against the virus than before the Omicron surge. Overall, 64% now say they are always or often avoiding large groups and 65% are wearing face masks around others, both up from 57% in December 2021. Furthermore, 60% say they are regularly avoiding nonessential travel, up from 53% a month ago. That level of precaution is the highest since spring 2021, before millions of Americans were fully vaccinated. Seventy-three percent of vaccinated Americans say they frequently wear a mask around others, compared with 37% of unvaccinated Americans. Hence, vaccinated Americans remain much more likely to practice precautions than the unvaccinated ones (Bruback, Ellgren and Noveck, 2022).

Some public health experts go to the extent of saying that the increased vaccination and infection are strengthening our defenses against COVID. Such Experts seem optimistic about the combined effects being able to tame the pandemic than at any point since its emergence more than two years ago. In the United States, 37 percent of people are not fully vaccinated, compared with 25 percent in Western Europe. Furthermore, 75 percent of U.S. population has not had a booster shot compared to 50 percent of Western Europeans. This means that the number and concentration of unvaccinated people in parts of the United States put the country in a more dangerous position than well-vaccinated parts of Europe, where the return of normalcy was underway. In such western countries, officials talk of moving from an emergency crisis to one which is more sustainable (Mueller and Santora, 2022).

However, some observers contend that the loosening of the Omicron grip in many places has given rise to the hope that the outbreak is about to enter a new phase in which the virus will become, like the flu, a persistent but generally manageable threat that people can live with—an endemic disease. On the other hand, experts are warning people against underestimating the pandemic or letting their guard down against the possibility of new, more dangerous mutant varieties. So far, more than 370 million cases and over 5.6 million deaths linked to COVID-19 have been reported globally (Keaten, 2022).

Because Omicron causes less severe disease and vaccinations remain protective against the worst outcomes (especially for the boosted population), some public health experts have encouraged less focus on cases and more emphasis on hospitalizations amid record-breaking spikes. At the same time, scientists have also cautioned that the protection offered by a previous infection may wane overtime, and may not apply as well to future variants. For example, infection with Delta offered minimal protection against Omicron. New fast-spreading variants are likely to emerge and scientists believe there is no reason to think they will only be milder (Mueller and Santora, 2022). Scientists believe that the coronavirus will become endemic, a permanent part of the disease landscape, and start circulating at more predictable levels. Predicting the next variant may be as difficult as it had been to predict Omicron. Finally, Dr. Kluge of the WHO said that even if the pandemic is far from over, there is a need to end the emergency phase in 2022

and address other health threats that require immediate attention and treatment. According to Dr. Kluge, backlogs and waiting lists have grown, essential health services have been disrupted, and plans and preparations for climate-related health stresses and shocks have been put on hold (Mueller and Santora, 2022).

Africa CDC data shows that BA-2 accounts for 23.1 percent of all new coronavirus infections in the United States, the largest percentage yet, up from 13.7 percent the week before. But BA-2 accounted for more than 38 percent of cases last week in parts of the Northeast and New England. In the United States, just 65.3 percent of the population, 216.8 million people, are vaccinated and only 96.1 million have received a booster shot. In Germany, nearly 76 percent are fully vaccinated and Britain has fully vaccinated 73.6 percent. Finally, the lower vaccination rate is very likely to matter as BA-2 spreads further in the United States, especially in regions where it is significantly lower than the national average. And even for people who are fully vaccinated and have received a booster shot, research data is showing that immunity to the virus fades overtime. Hence, the consideration to offer a fourth shot to people who are 65 and older (Bernstein and Achenbach, 2022).

Easing of restrictions

Many countries, especially in Western Europe and North America are step-by-step easing or removing COVID-19 restrictions amid hopes that Omicron wave may have passed its peak (compared to China and Southeast Asian countries that are still keeping such restrictions in place). The moves to relax precautions, based on declining or flattening cases counts, represents what could be a turning point in a nearly two-year pandemic. The WHO said that some countries can now consider carefully to relax the rules if they have high immunity rates, their healthcare systems are strong and the epidemiological trends are going in the right directions. England, France and Ireland, the Netherlands and several Nordic countries have taken steps to end or loosen their restrictions. In the U.S. local and state leaders have served up a hodgepodge of responses (Keaten, 2022).

Denmark became the first European country to scrap most pandemic restrictions, claiming that it no longer considers COVID-19 a socially critical disease. According to officials, the Denmark move is that while the Omicron variant is surging in the country, the government believes it's not placing a heavy burden on the health system and Denmark has a high vaccination rate. Denmark, a nation of 5.8 million has in recent weeks seen more than 50,000 new cases a day, but the number of COVID-19 patients in hospital intensive care units has dropped. Increasingly, the focus is on hospitalization and death rates rather than rates of infection. Some other nations in Europe are moving in the same direction as Denmark. For example, England, has lifted almost all domestic restrictions. Masks are no longer mandatory anywhere, vaccination passes are not required for any venue, and people are no longer advised to work remotely. The only legal

requirement is to self-isolate after a positive COVID test. This means a shift from collective-responsibility at a national level, to self-responsibility at an individual or household level. It`s reported that most people in Denmark have received two vaccination shots, and many have received three doses or booster shots as well. Many of the doses were provided in the fourth quarter of 2021 (Olsen, 2022).

A surge in COVID-19 infections in Western Europe has experts and health authorities on alert for another wave of the pandemic in the United States. At the same time, most of the country has removed restrictions after a sharp decline in cases caused by Omicron. Health experts are closely watching the sub-variant of Omicron known as BA-2, which seems to be more transmissible than the original strain, BA-1 and is fueling the outbreak overseas. Germany, a nation of 83 million people, saw more than 250,000 new cases and 249 deaths. The Health Minister called the situation "critical," yet Germany is allowing most coronavirus restrictions to end, despite the increase. Britain had a seven-day average of 65,894 cases and 79 deaths as of Sunday. The Netherlands, with a population of about 18 million people, was averaging more than 60,000 cases. In all, about 12 nations are experiencing spikes in coronavirus infections caused by BA-2, a cousin of BA-1(Bernstein and Achenbach, 2022).

Successful stories in COVID-19 management

For the past two years, South Korea waged a successful battle against COVID-19 using a three-T strategy: a) It ramped up lab "tests" to identify infections; b) It "traced" contacts using modern technology; and, c) It "treated" patients by keeping them in isolation where they were monitored by government officials. However, as the fast-spreading Omicron variant threatens to overwhelm the public health system, that strategy now appears unsustainable and may be ineffective. The Government of South Korea is now shifting the country's pandemic focus to a new strategy called "Select and Focus." This means asking patients who test positive to simply look after themselves at home, while the country redirects resources to those who are most vulnerable (this aligns increasingly with similar strategies in Western Europe). This new approach has unsettled people who have grown used to the government's heavy handed virus intervention measures. As the number of people fending for themselves at home has increased, so have the complaints. And some complain that they were not put through when they called pandemic hotlines seeking information. Being left alone has felt like "home abandonment" to many. On top of that, medical supplies the government promised to deliver, such as thermometers, oximeters, hand sanitizers, and other pandemic necessities, have failed to arrive. This has added to the sense of being "abandoned" by the government (Sang-Hun, 2022).

The government has responded by mobilizing thousands of neighborhood clinics to help ease the challenges for those seeking help at home. Health officials have tried to reassure people that despite initial disturbances, the recent policy shift was inevitable, compelled and even justified

by the Omicron data. Under its new strategy, the government intends to dedicate its monitoring efforts to high-risk patients who are staying home. These include people in the 60s and older and people with pre-existing medical conditions and supplying them with at home treatment kits and calling twice a day to check on their condition. Other patients who test positive must monitor their own symptoms at home and seek help only when their condition worsens. And the patients' family members are now free to go out for essential supplies if they are vaccinated (Sang-Hun, 2022).

Critics argue that the new approach disadvantages the underprivileged classes, like the poor who lack access to medical care or other social services. At the same time, the government says that even if the daily caseload soared, it would still consider lifting restrictions further so that the country could switch to a "life with COVID-19," treating the disease like "seasonal flu," provided that the number of seriously ill patients was kept under control. Recently, South Korea retired its GPS monitoring tool used to enforce isolation; a smart phone app that alerted health workers when patients left home without permission. Many of the 60,000 workers who monitored those movements on the app will now be redeployed to assist vulnerable patients at home, delivering medicine and answering COVID-19 hotlines. After two years of battling the virus, South Korea has learned that the cost of maintaining its restrictive pandemic protocols is unsustainable in the long term. However, more than 86% of the population has received at least two doses of the vaccine. The government has also urged people to get the booster shots, noting that more than 60% of those who died or were seriously ill had received no shots or only one shot (Sang-Hun, 2022).

In New Zealand, the government of the former Prime Minister, Jacinda Ardem, was not only trusted but its policies, strict as they were, were supported overwhelmingly by the public. The PM's empathy approach combined with effective policies, led to real-world leading results. New Zealand's COVID-19 national goal was not just flattening the curve of coronavirus cases, as most countries have aimed to do, but rather eliminating COVID-19 altogether. New Zealand imposed a national lockdown much earlier in the outbreak than other countries did in theirs, and banned travelers from China early, before New Zealand had registered a single case of the virus. It closed its boarders to all non-residents [early], when it had only a handful of cases. This is a proactive (not reactive) strategy. Such early intervention bought officials time to develop measures that could end the transmission of the coronavirus such as rigorously quarantining at the country's boarders and expanding COVID-19 testing and contact tracing. In addition, the decision by the New Zealand Government to unveil its four-level alert system at the outset of the crisis was great at getting [people] ready psychologically for a step-up in seriousness. Public trust and support of the policies was critical, even though many were feeling economic pain, at least in the short-term, as a result of them (Uri, 2020).

Rwanda stands out internationally as a success story because of its proactive and scientifically-driven approach to containing the COVID-19 pandemic. By April 2021, it had recorded only 314

deaths! Rwanda has a more distributed healthcare system similar to a local health district model (similar to one used successfully in New South Wales, Australia) (Mitchell, 2021). Rwanda has one of the lowest incidence rates of COVID-19 infection on the African continent. This is a testament to the country's early planning and aggressive use of innovative strategies (Naz et al., 2021). Rwanda today is seen as a world leader in responding to the pandemic. Its healthcare system is built on equity, trust, community participation, and patient centrism. Rwanda's response indicates that with the right strategies and leadership, a country can keep its residents relatively safe. Projections for January 2021 showed that Rwanda with a population of 12.3 million would experience a death toll of 62 people. Rwanda's decentralized but integrated approach has helped the country to achieve the highest level of public trust. Each village has a team of elected community health workers who understand the specific needs of their constituencies. The community-based approach in Rwanda has protected the vast majority of its citizens from the virus and built up even more trust in its healthcare model (Binagwaho, 2022).

According to the Director General of the Rwanda Biomedical Center (RBC), at the start of the pandemic, only one lab and six people in the entire country were trained to perform PCR tests. Within just a few months [Rwanda was] able to increase the testing capacity and opened 12 new PCR labs across the country. Each province had one. This increased tests from 200 tests per day in March last year to more than 10,000 in a day. In addition, Rwanda deployed rapid antigen COVID tests which are as fast and portable as pregnancy tests. In Rwanda, people's health took precedence over the economy. The leadership believed that if people can be healthier, if the health system is strong, then the economy would be stronger, not the opposite. Furthermore, village leaders were asked to identify people in their communities most at risk, and they received government funding to provide supplies; (this was made possible due to low to zero corruption in Rwanda) (Mitchell, 2021).

Rwanda's Government and Healthcare System has responded to COVID-19 pandemic with innovative interventions to prevent and contain the virus. Importantly, the response has utilized adaptive and innovative technology and robust risk communication and community engagement to deliver an effective response to the COVID-19 pandemic (Binagwaho, 2022). In particular, the formation of a Joint Task Force in early March [2020] led to the Coronavirus National Preparedness and Response Plan, an extensive six-month plan that established a national incident management system and detailed four phases of comprehensive national response. Notable strategies have included disseminating public information through drones, robots for screening and in-patient care, and official communications through social media platforms to combat misinformation and mobilize a cohesive response from the population (Binagwaho, 2022).

In China, there was adoption of "zero tolerance" strategy which has been used for the past two years. "Zero tolerance" approach requires quarantines and lockdowns on whole communities

and often even cities when as few as a handful of cases have been detected. The Chinese officials credit the approach and more than 80 percent vaccination rate with helping to prevent a major nationwide outbreak over the past two years. On the other hand, critics argue that the approach is taking a major toll on the economy and preventing the population from building up natural immunity. The Prime Minister, Li Kegiang, further highlights about China needing to constantly refine epidemic containment (Chute, 2022). More recently, the Chinese Government abandoned its "zero COVID-19" approach.

Policies and protocols for dealing with pandemics in Uganda, Rwanda, Tanzania, and Kenya.

Different responses to the COVID-19 pandemic shows unique insights into the effectiveness of different governments, health care facilities and individual actions (Bellof, 2020). Policies are paramount in eliciting a collective response, exchange of findings, facilitation of diagnosis, and management of Covid-19. They are essential in as far as improving the resilience of health systems is concerned (Kiwanuka et al., 2020). The spread of Covid-19 has presented a great challenge for governments around the world; this has necessitated swift response in order to mitigate the impact. Consequently, countries started to scale up Covid-19 preparedness and response strategies. A study published in the Lancet indicates that about 72 percent of African countries rolled out their first batch of at least five strict COVID-19 control measures approximately 15 days before reporting their first cases. This aggressive or proactive response was not an overreaction rather it represented a tactical response, (e.g. Rwanda) (Opoku, 2021).

In Uganda, the first response was the 30th March 2020 country-wide lockdown which was announced by the president. This is due to the fact that the 1995 constitution put the President in the central role for disaster response management (G0U, 1995). The Ugandan Government was very aggressive in its response to COVID-19 due to its past experiences with the Ebola epidemic. Between 2000 and 2014, Uganda experienced four Ebola epidemics, and learned some useful lessons, so that physical distancing, movement restrictions, and contact tracing were not new, at least among the public health community. Behind this veneer of success, there were serious challenges and hardships. The unwieldy response structure included a national task force that was hastily put together, headed by a general. The Ministry of Health which had seemingly challenges and hardships. The unwieldy response structure included a national task force that was hastily put together, headed by a general. The Ministry of Health which had seemingly wasted two months of lead-time jumped into action barely funded. It was understaffed, poorly equipped, and very much like heading into a hurricane with no roof over their heads. The President saw fit to entrust the district level management and substantial budget level management for the pandemic into the hands of Resident District Commissioners (RDCs), beginning with the authority to determine who could move, and what patients could benefit from the scarce ambulances (Kobusingye 2020). Uganda's COVID-19 response was characterized by the following features:

Wasted two months of lead-time jumped into action barely funded. Understaffed, poorly equipped, and heading into a hurricane with no roof over their heads. The President saw fit to entrust the district level management and substantial budget level management and substantial budget for the pandemic into the hands of RDCs beginning with the authority to determine who could move, and what patients could benefit from the scarce ambulances (Kobusingye, 2020). Uganda's COVID-19 response was characterized by the following features:

a) The context of previous pandemics and state capacity informed the ways in which the country's response was structured and executed/implemented.
b) The country's preexisting military orientation, or pre-pandemic militarization, had a direct influence on the responses adopted and implemented.
c) The resulting militarized response was far in excess of normal military role in pandemic controls even when accounting for the authoritarian nature of the regime (Khisa and Rwengabo, 2023).

According to the Lancet report published on 24 September 2020, Uganda was ranked among the top countries in terms of suppressing the pandemic. Uganda's swift response was based on the previous experience with the outbreaks like Ebola. The government's response included the quick development of institutional arrangements, rapid pooling and allocation of funds, and the development of operational guidance to health system stakeholders on how to respond (Margini et al., 2020). An emergency response team was appointed by the government to coordinate Covid-19 response across six pillars, namely: governance and leadership; surveillance and laboratory; case management; logistics; risk communication, social mobilization, and community engagement; and mental and psychosocial support. Besides, Ministry of Health aimed at policy and strategy, this was coordinated with the Office of the Prime Minister (OPM), especially on strategic and operational command of the response and other series of crosscutting functions like planning budgeting and partner coordination. There was also District Surveillance teams and District Task Forces working hand in hand to respond in their various jurisdictions (Margini et al., 2020).

In Uganda, the presence of military in enforcing laws was very visible. A report by Khisa and Rwengabo indicates that Uganda experienced an oversized military role (in its response to COVID-19) ranging from law-and-order and lock-down enforcement, to managing food relief supplies, medical operations, and partisan political repression. The Uganda People's Defense Forces (UPDF) took a dominant presence in pandemic-related decision-making, security resources, policing, and guarding health sector infrastructure, and overall securitization of COVID-19. In contrast, Tanzania's initial skepticism of COVID-19 was later followed by a civilian-led response; while the Kenya Defense Forces (KDF) played only a supportive role (which included taking pay cuts, undertaking mass testing at KDF headquarters, sealing off illegal border entry points, and disinfecting military establishments) (Khisa and Rwengabo, 2023). We argue that

while authoritarian responses to public health crises have deep historical origins in countries like China, to understand each country's responses to COVID-19 requires a grasp of policies and politics, a focus on relationships between regime types and crisis management/recovery, the role of political institutions, and nuances of state capacity.

Despite weak state capacity, Uganda's previous experiences of managing pandemics and humanitarian crises may have moderated the problem. Amid limited resources and underdeveloped state institutions, full-scale state mobilization became necessary, with the military playing a central role. Uganda's military played a vital role in governance before COVID-19; with the pandemic role of the military intensified, leading to both positive contributions and perverse actions associated with post-COVID-19 civil military interactions and relations. In the case of Uganda, the COVID-19 pandemic may have been exploited for political-military gains by the Museveni's Government that has been in power since 1986 to-date. His speeches and guidelines on preventative measures against the spread of COVID-19, not only reproduced war rhetoric and narratives, but also promised unprecedented health sector transformation (Khisa and Rwengabo, 2023).

In Kenya, the first confirmed case of coronavirus was on March 12, 2020. According to the Ministry of Health, the suspected case was a Kenyan who had travelled to Nairobi from the United States through London. Soon after this case, the government undertook measures which included the activation of the National Emergency Response Committee on Coronavirus that was tasked with preparedness, response, and the provision of strategic leadership. And barely four days after the disclosure of the first case in Kenya, had the government abruptly closed schools and colleges, disrupting nearly 17 million learners. Besides the closure of learning institutions, a dusk to dawn curfew was imposed on March 25, 2020. Businesses shut down, and public transport scaled back. Working people and organizations were encouraged to implement "working from home" plans as a strategy to minimize contact. At the same time, students were to "continue schooling via technology-mediated learning on television, radio, and local technology applications. However, this was opposed by parents and activists who said the move would exclude children in remote parts of the country that lacked access to both power and technology. (Kapchanga, 2020)

On 15th March, cultural, educational, and sporting activities were suspended along with all public rallies and church services. On 22 March, local and international flights were suspended and on 27 March, a dusk-to-dawn curfew was imposed nation-wide. On 5 April, Kenya's Ministry of Health mandated mask-wearing (Donovan, 2022). By 18th July 2021, the total number of confirmed cases reported was 192,758, with 3775 deaths. The government formed the national Covid-19 task force which is responsible for country's response through multi-sectoral technical working groups on testing, case management, risk communication and community engagement among others. An earlier version of the COVID case management guideline was released in April

2020 and capacity building of health care workers on diagnosis and treatment of COVID-19 was quickly carried out, even as counties prepared themselves by setting up isolation centres and supplies (MoH Kenya, 2021).

More efforts and emphasis were put on reducing transmission of Covid-19 including restrictions on gatherings, contact-tracing, quarantine and isolation. With the spread of COVID-19 in the communities, the importance of preventive public health measures such as hand-washing and proper use of face-masks cannot be over emphasized. Besides, the introduction of the COVID-19 vaccines with a focus on groups at high risk such as health-workers and persons aged above 58 years and those who have comorbidities such as Diabetes Mellitus and Hypertension has added another prong to prevention measures against COVID-19 (MoH Kenya, 2021).

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COVID-19 hotspots such as Nairobi, Mandera, Mombasa, Kilifi and Kwale counties were placed under restricted lockdown, which limited the movement of people in and out of these regions. Unfortunately, it was widely believed that the movement restrictions and social distancing guidelines excluded politicians who continued flouting them by holding public gatherings. In spite of these limited measures, the reported coronavirus cases in Kenya saw a gradual increase. The spike in numbers testing positive was attributed to the relaxation in the restrictions put in place to suppress the crisis. At the same time, governors of various counties around the country claimed that funds meant for COVID-19 continued to be misused in Nairobi as Kenyans suffered under the pandemic. In addition, counties were suspected of extravagance and embezzlement of COVID-19 funds. As the second phase of the lockdown was coming to a close, pressure was increasing on President Uhuru Kenyatta, to be on the frontline and show leadership in confronting the coronavirus (Kapchanga, 2020).

In Kenya, a multi-agency approach, at two levels (policy and technical) involving relevant ministries, departments, and agencies was employed to deal with the threat of COVID-19. Among the actions taken, President Kenyatta appointed a new Cabinet Secretary for Health as well as instituted the National Emergency Response Committee (NERC) on Coronavirus on February 28 through an Executive order No. 2 of 2020. The NERC was mandated to monitor the evolving situation and take all necessary measures to averting, containing and mitigating the transmission of Covid-19 in the country. As earlier noted above, the Government of Kenya adopted “containment” as the strategy in the fight against COVID-19 (Mukiri n.d)

Following the confirmation of Kenya’s first COVID-19, the government’s immediate reaction was to contain the spread of COVID-19 by instituting policy measures and behavioral protocols aimed at averting the spread of the virus especially into the rural areas where most of the senior citizens reside. Mass testing of persons susceptible of carrying COVID-10 was hampered by lack of testing kits, personnel and funding. Targeted testing with the available kits had its share of challenges

such as low turnout, delayed results as well as the provision of inaccurate contact details or wrong telephone numbers or residential addresses making it difficult, if not impossible, to reach those individuals especially if the results came out positive. Above all, there were reports of some people escaping from government or private quarantine facilities (Mukiri n.d).

The mitigation measures undertaken by the Government of Kenya were aimed at striking a balance between minimizing COVID-19 associated morbidity and fatalities and its adverse economic impact. The stringent mitigation measures put in place by the Government of Kenya to minimize COVID-19 associated morbidity and fatalities resulted in economic losses and a decline in global economic activity (Wangari et al., 2021).

It is worth noting that, the human rights situation in Kenya worsened as a result of widespread excessive use of force by police to enforce the curfew and other emergency measures. Documented incidents included beatings and other forms of assault; shootings; sexual violence; use of live ammunition, tear gas and water cannons in residential areas; arbitrary arrests; damage to property, looting, theft and extortion. People in slum areas in Kenya (especially in major cities of Nairobi and Mombasa) may be at a higher risk of contracting COVID-19 due to overcrowding, limited access to running water and employment opportunities to cater for their needs. Finally, government restriction measures have had detrimental effects on the slum dwellers such as mental illness; increased poverty and reduced help from care givers and communities. In view of the above challenges facing slum dwellers, it was recommended that the Government of Kenya take the following steps:

i) To educate law enforcement agencies on how to use non-violent methods of managing pandemics like COVID-19;

ii) To address the social and economic disparities that have been exposed by COVID-19, particularly with regard to the poor and slum dwellers;

iii) To enhance governmental programmes that address slum dwellers given their precarious situations;

iv) To prioritize mental health as a serious challenge that has been worsened by COVID-19, particularly for slum dwellers; and,

v) To make concerted efforts aimed at enabling the children from low-income households, most of which are found in slums, to enable them to resume learning Solymari et al., 2022.)

In Rwanda, the Rwandan Government led by President Paul Kagame, has provided the necessary leadership that has kept Rwanda relatively calm compared to other nations during this pandemic. In particular, “the Rwandan Government has been an active actor in preventing the spread of

COVID-19 and provided the necessary leadership during a time of crisis that is still absent in the global north (Beloff, 2020).

Rwanda today is seen as a world leader in responding to the pandemic. Its healthcare system is built on equity, trust, community participation, and patient centrism. Rwanda's response indicates that with the right strategies and leadership, a country can keep its residents relatively safe. (Projections for January 2021 showed that Rwanda with a population of 12.3 million would experience a death toll of 62 people!). Rwanda's decentralized but integrated approach has helped the country to achieve the highest level of public trust. Each village has a team of elected community health workers who understand the specific needs of their constituencies. The community-based approach in Rwanda "has protected the vast majority of its citizens from the virus and built up even more trust in its healthcare model (Binagwaho, 2022).

Efforts to curtail the spread of Covid-19 were spearheaded by the Office of the Prime Minister in collaboration with the Ministry of Health, Ministry of Local government, and Ministry of Foreign Affairs. Rwanda's Ministry of Health implemented various policies and measures as recommended by WHO. In particular, WHO supported the MOH in setting up strong surveillance to contain the spread of the COVID-19 pandemic. A mandatory countrywide lockdown policy was effected on 21 March 2020. This included the closing of the borders, strict social distancing policies, closing of schools, churches, bars, and the suspension of commercial passenger flights to and from Rwanda (World Bank, 2020). The countrywide response was both centralized and well-coordinated inside the national command post at "Camp Kigali". According to WHO Director-General, Dr. Tedros Adhanom Ghebreyesus: Rwanda responded quickly to COVID-19, thanks to high-level leadership, a multi-sectoral approach, strong disease surveillance systems within the country and on its borders, the use of technology in the service of public health and community engagement (Mutangashuro, 20200).

It took exactly one week from Rwanda's first confirmed COVID-19 case to a total country shutdown. The Ebola experiences in neighboring Uganda and the DRC in 2019 had prepared Rwanda for COVID-19. Indeed, with the diligent work of the Government of Rwanda, Ebola did not cross the borders of Uganda or DRC into Rwanda! They also used HIV machines that were already in Rwanda! Weeks before the first COVID-19 case was confirmed in Rwanda, hand sanitizer showed up at building entrances throughout the city of Kigali. Security guards would chase after people carrying a bottle to ensure the person got a squirt before entering. Group meetings and conferences were canceled. Handshakes turned to elbow bumps. Due to these early and aggressive measures, Rwanda, unlike its neighbors in the east African region, stopped the widespread infection of the pandemic throughout the country (Nkuranga, 2020).

The robots used in Rwanda's COVID-19 treatment centers were donated by the United Nations Development Program (UNDP) and the Rwanda Ministry of ICT and Innovation. They are used to

screen people for COVID-19 and deliver food and medication, among other tasks. This not only frees the frontline (public) health workers, but also shields them from the risk of COVID-19 infections. Despite being a low-income country, all testing and treatment for the virus is provided for free. Furthermore, "anyone who tests positive is immediately quarantined. Any contacts of that case who are deemed at high risk are also quarantined, either at a clinic or at home, until they can be tested (Beaubien, 2020). The deployment of eight robots played a small but novel vital role in Rwanda's efforts to control the virus and protect healthcare workers. (Compared to Uganda where many healthcare providers have contracted COVID-19 and some have died.). The robots help measure various vital signs of infected patients, serve them food and clean hospitals. In addition, they are used at the airport to check temperatures and to ensure people are wearing masks (Mitchell, 2021).

Rwanda has been exploring the integration of drones in different sectors since 2018. More recently, the government is using drones in densely populated, difficult-to-reach neighborhoods and high-risk zones to urge compliance with COVID-19 preventive measures. In particular, drones were deployed to complement radio/TV messages and the work by community health workers and other community leaders by bringing education messages directly to residents by air. As a result, authorities reached places hard to reach using broadcasting trucks due to difficult terrain or lack of human resources (i.e. public healthcare personnel). Data drawn from the images captured by drones permits the authorities to deploy resources directly to areas identified to be in need of interventions. For example, Rapid Response Teams (RRTs) at district levels are able to analyze the data and to send daily reports to the central government. Other high-tech interventions include use of high-tech robots at treatment centers to administer temperature checks, monitor patient status, and keep medical records of COVID-19 patients. Use of robots is intended to reduce the risk of infections among healthcare workers (Patel, 2020).

In addition, public healthcare workers call or visit every potential contact of someone who tests positive. This is possible because in 2018 Rwanda created a National Health Service (focusing on disease prevention and enabling public healthcare workers to visit people/patients in their homes). In order to test thousands a day, Rwanda…started using a process called "pool testing." Materials from 20-25 nasal swabs are all put into one vial and run through the machine. This allows them to test for more samples at once. If they get a positive result, then all the swabs that went into that initial vial are tested individually to pinpoint the person who is infected. This was an innovative testing technique (Beaubien, 2020).

Rwanda mobilized community (public) healthcare workers, police and college students to work as contact tracers. The Government set up national and regional command posts to track cases. It also deployed human-size robots in the COVID-19 clinics to take patients' temperatures and deliver supplies. Whether the people trust or fear the government [due to its authoritarian

streak], Rwandans listen to their government and have been following the orders regarding masks, washing hands and staying home (Beaubien, 2020).

Rwanda operates under a universal healthcare model where public health insurance coverage is nearly 84% with another 6% of the population covered through other insurance policies. Treatment teams have been assembled to ensure the holistic medical and psychological welfare of patients. Each unit includes a medical director, doctors, nurses, clinical psychologist, biomedical staff, nutritionists, infection prevention control (IPC), administrators, logistic managers, and data managers. The COVID-19 response in each of Rwanda's 30 districts is led by mayors, who coordinate the interventions for every aspect of infection control. Furthermore, provinces and villages in Kigali in which new clusters of COVID are found are periodically placed back on lockdown, and testing continues in high-risk populations and locations. The public health guidelines are reviewed approximately every two weeks and regulations are lifted or reinstated and curfew is adjusted based on the pandemic's progress. In conclusion, at this point in the pandemic, Rwanda has one of the lowest incidence rates of COVID-19 infection on the African continent. This is a testament to the country's early planning and aggressive use of innovative strategies (Naz et a., 2021).

Tanzania received its first case of imported COVID-19 on 16 March, 2020 in Nothern Tanga region. The victim was effectively screened for the symptoms of COVID-19 at the airport and showed none. However, on the 16 March, 2020, she felt unwell and decided to surrender herself to the medical tests, only to find out that she was infected with the novel severe acute respiratory syndrome coronavirus-2 (SARS-COV-2) (Clifford and Wu, 2020). Centers for Disease Control and Prevention (CDC) Africa in collaboration with Tanga Regional Health Management Team swung into action to mobilize regional and district Rapid Response Teams (RRTs) to carry out in-person surveillance. There was vigorous training of RRTs on case investigation, contact tracing, home and community isolation, and quarantine as well as infection prevention. World Health Organization did reviews to ascertain the readiness and preparedness of some countries. All in all, after the interactions and assessments, the World Health Organisation requested all countries to espouse a whole-of-government and whole-of-society response which must be buttressed under a comprehensive, interwoven strategy to avert further infections, save lives of people and lessen the impact (WHO, 2022).

According to a WHO report cited in Veronica Masubo, Tanzania had the second-highest number of COVID-19 cases in the East Africa community behind Kenya, with 509 cases and 21 deaths as of May 26th (22 days) since last reported. Furthermore, the toll of the virus on the existing health care infrastructure has also been severe as hospitals in the commercial capital, Dar es Salaam, have struggled to manage the diversion of resources towards new COVID-19 patients, while treating other deadly diseases in tandem, such as malaria (Masubo 2020). Since the first COVID-19 case on March 16th, the Tanzanian Government implemented noticeably less stringent

responses compared to its neighbors. For example, a) Rwanda closed its borders and implemented a full two-week lockdown since its first case occurred. b) Uganda and Kenya imposed a shutdown of economic activities and restricted movement within their countries by declaring national curfews c) Tanzania Government's may be "unconventional approach" to COVID-19, but its uniqueness illustrates the need for governments to form context specific smart containment strategies and recovery plans, more importantly, a small containment strategy can be developed to incorporate flexibility in Tanzania's response approach, including a graded action plan that can be used to complement the country's long-term economic development goals (Masubo 2020).

Despite President Magufuli's denialism, research indicated that many local health officials in Tanzania took it upon themselves to develop appropriate solutions for containing the spread of COVID-19, such as creating community contact tracing and isolation systems and making their own personal protective equipment (PPE). Local health officials used their own limited resources and strategies to control the spread of COVID-19. It is reported by researchers that, their adaptations included involving local leaders and community health workers in the surveillance process, forming emergency response teams and mobilizing community resources for quarantined patients, procuring their own PPE, manufacturing hand-sanitizers and face masks, enforcing mask wearing and hand washing, restricting people from entering congregate spaces, and collaborating with community and religious leaders to spread prevention information and lower stigma and fear of COVID-19 (Gardner, 2021).

In April 2021, Tanzania's new President, Samia Suluhu Hassan, announced new plans to create an expert coronavirus task force in her first public address. The task force released their report on May 17, 2021. It recommended that:

a) Tanzania restart COVID-19 surveillance at all levels, implement regional and international resolutions on the pandemic, and join COVAX to deliver vaccinations to Tanzanians.
b) Since then, Tanzania has issued a border control measure such that every traveler to Tanzania must present a negative COVID-19 test.
c) Unfortunately, there has been no further recommended measures.
d) On the other hand, the president of Zanzibar, a semi-autonomous region of Tanzania, publicly stated on May 31, 2021 that his government would soon import COVID-19 vaccines and vaccinate any willing Zanzibari citizen.
Activists were hoping that the mainland Tanzania would adopt a similar policy as Zanzibar (Gardner, 2021).

A special committee of health experts formed by Tanzania's new President recommended an overhaul of the country's denial approach to COVID-19. The committee recommended that:

a) The government should provide information on COVID-19 and take concrete steps to strengthen interventions at all levels to prevent a third wave of the disease that can be caused by the coronavirus.
b) Tanzania participates effectively in decision-making and implements regional and international resolutions on the pandemic adopted in regional blocks and the WHO.
c) Health professionals fulfill their professional responsibilities in educating, preventing and treating COVID-19 in the country.
d) Government allow use of coronavirus vaccines listed by the WHO to provide opportunities for protection for its citizens after locally testing such vaccines as effective.
e) Government join the global COVAX initiative that was created to ensure that low- and middle-income countries have fair access to vaccines (Odula 2021).

All in all, as far as Tanzania's response to Covid 19 was concerned, the experience gained from the first six months of implementing the COVID-19 response plan enabled more focused and strategic implementation. For example, regarding coordination, a major emphasis was placed in strengthening the sub-national level in public health emergency management. In the case management pillar or goal, the policy of decentralizing COVID-19 response and care including home care for mild cases commenced in the districts and there was an urgent need to ensure that all districts had the capacity to initiate and effectively roll out this strategy (WHO. 2021).

We observed that different countries used different approaches in responding to the pandemic; ultimately, one size does not fit all when it comes to fighting the pandemic of Covid-19 nature. Nevertheless, it is possible to assert that the common thread in the responses from all the three east African countries was dominance of the national governments in overall control. In other words, formal national states took control of management of everything including resources from the start. However, in some countries, non-state actors were largely in control. In a study by researchers at the Center for Public Authority and International Development, the gap between the national and non-national response to COVID-19 was summarized as follows:

a) In Uganda, the national government has sought to consolidate its overall control, by monopolizing the response to the pandemic and, in the process, pushing out or rendering compliant non-state actors.
b) In contrast, in South Sudan the pandemic came at a moment of political vacuum, and as a result, traditional/clan chiefs took the lead in responding.
c) In western DRC, the pattern was more collaborative. Traditional authorities participated in and reinforced the state's COVID-19 response (Green and Kirk, 2020).

As expected, in some countries there were contests on control of the resources meant to fight Covid-19. For instance, in Kenya and Uganda, there were cases of embezzlement of COVID-19 funds, while in Rwanda and Tanzania there were no such reports; this is largely attributed to their

leaders who are intolerant of corruption. The biggest question for policy makers in East Africa should be: How can the health of their citizens be protected today and during future pandemics?

National and multilateral responses to COVID-19 and challenges.

According to the World Bank report, several countries in the developing world have received financial support from World Bank under the Covid-19 Strategic Preparedness and Response Program (SPRP) using Multiphase Programmatic Approach (MPA) (World Bank 2020). While some countries in East Africa have already received funding like Rwanda, others have not received it yet. The point of departure in this section is to briefly examine multilateral institutions that have responded towards fighting Covid-19 and document contemporary challenges they are facing in fighting against this pandemic in order to make them rethink how they could perform better in the future global pandemics or other future global problems.

All in all, according to scientists several steps can help manage this seemingly challenging pandemic:

a) Governments must use the triad of testing, therapeutics (eg. rapid antiviral pills) and vaccines to manage COVID-19. Testing is especially important because now tests are excellent at quickly detecting infectious individuals and preventing outbreaks in work places. However, the end of free testing in most countries including the U.S. is a major concern in managing this disease and avoiding future lock downs of work places. In the meantime, vaccines must be rolled out to all parts of the world to reach the 70% target across all countries.

b) Rapid response plans must be prepared in order to react quickly to a game changing new variant which could deter the trajectory of the pandemic, the same way as Alpha, Delta and Omicron did. Scientists are not only concerned about this trajectory but governments may only have days to pull together data and respond (those in Africa and other developing countries do not have such capacity to respond). Hence, national governments will need the support and funding from multinational organisations.

c) Rapid testing to detect infectiousness and one-way masking should continue to be used to protect those most at risk of infection (e.g. healthcare workers and social care workers) as well as those most at risk of severe health outcomes (such as people in care homes) and in vulnerable groups.

d) Long COVID has not received the attention it deserves. An increasing number of people who are unable to return to work, or are suffering from chronic illness, will be a major burden on both healthcare services and the economy. Developing treatments for this condition is critical given that avoiding COVID-19 infection is increasingly difficult. There is need to support those suffering and find ways of reducing the pain.

e) Finally, just as avoiding COVID-19 infection is important, it must be balanced by a focus on other current or future major health issues (Sridhar, 2022).

3. METHODOLOGY

This is a qualitative study primarily based on the analysis of available literature about Covid 19. This study sought a thorough review of the relevant literature and available reports and documents on Covid-19 from the websites of Ministries of Health of the four countries, the World Health Organization, African Union, and other authentic sources like the Africa Centers for Disease Control and Prevention, The John Hopkins University, among many other credible sources. More materials were obtained from journals and international daily newspapers like The New York Times, The Guardian, The New Vision, The Daily Monitor, among others.

Critical text analysis. This was used in this study. Critical text analysis is used in order to find out the truth-value of the texts (Polit and Beck, 2010). Critical text analysis also eliminates the risks of a researcher being biased especially when triangulation is used and also provides richness to data analysis (Mikkelsen, 2005:169). This method if used properly enables research problems to be identified both qualitatively and quantitatively. Critical text analysis implies that all texts used for this study were subjected to scrutiny concerning a number of parameters including objectivity, exclusion and inclusion of the content, and generality.

4. CONCLUSION

We conclude by affirming that people around the globe mush continue to learn to live with COVID-19 virus, just the way they have been living with flu. Governments must work hard to sustain and maintain the hard-fought gains that have been made across all aspects of the response to COVID-19 so far. We further conclude by asserting that COVID 19-virus that caused so much economic and social turmoil in the past few years has not been completely eliminated as a public health threat, we must roll our sleeves and fight until this “animal” is defeated.

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