

Kenya CTAP II - Country Specific Vaccine Equity and Distribution Report

A report by the Slums Information Development and Resource Center (SIDAREC)



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List of acronyms

COVID-19	Corona Virus Disease
CTAP	COVID-19 Transparency and Accountability Project
EPI	Expanded Programme for Immunization
ECOWAS	Economic Community of West African States
HCW	Health Care Workers
IRC	International Rescue Committee
JICA	Japan International Cooperation Agency
KEPI	Kenya Expanded Programme for Immunization
KEMRI	Kenya Medical Research Institute
KII	Key Informants Interview
MoH	Ministry of Health
PWD	People with Disabilities
SIDAREC	Slums Information Development and Resource Center
TB	Tuberculosis
UNICEF	United Nations Children's Fund
WHO	World Health Organization



Executive Summary

This study sought to assess COVID-19 hesitancy and distribution in Kenya. The study assessed the situation of COVID-19 in Kenya. The study further examined pathways of access to vaccines in the country, as well as distribution dynamics and level of vaccination. It also examined vaccine equity and challenges associated with hesitancy in Kenya. Lastly, the study analyzed epistemic communities' responses to vaccine equity and provided recommendations based on the findings.

Results of the study revealed that as of May 2022, only 30.7% of the total population in Kenya had been fully vaccinated and the government, together with other stakeholders, was promoting campaigns to enhance vaccine uptake. On

COVID-19 vaccine distribution channels, the findings indicated that at the county level, the distribution of vaccines followed the routine immunization pathway of vaccine distribution, whereby the COVID-19 vaccine is transported from the country depot in Kitengela to the seven regional depots at the county level; each having a cold room for storage. The counties then placed their orders through the E-chanjo system, based on the sub-county orders and consumption rate of vaccines. Any buffer stock remains in the regional cold room. From the county depot, the sub-counties can get the vaccine based on their orders. The sub-counties have refrigerators and freezers to store the vaccine. To obtain the COVID-19 vaccine, the health facilities make orders to sub-county

depots. It is important to note that the transportation cost of the vaccine from the sub-county depot to health facilities is shared between the county governments and partners who support the COVID-19 vaccination. The results also showed that the distribution of the COVID-19 vaccine ensured that people living with disabilities, the elderly and expectant mothers were prioritized when obtaining the vaccine.

On key challenges experienced at the county level, the results showed that there is lack of consistent financial support to distribute COVID-19 vaccines from sub-county depots to the health facilities, lack of cold chain equipment in some health facilities (that would be used to store COVID-19 vaccine) and some areas were very hard to reach, due to infrastructural problems. ***On COVID-19 hesitancy, the study found that majority of the population were hesitant to get the COVID-19 vaccine due to various reasons, including: myths and misinformation, lack of transparency of COVID-19 information, social and peer pressure, the perception that 'there is no COVID-19', fear of injection and job prioritization, among the population.***

The study concluded that there is vaccine hesitancy in communities (despite challenges of access), due to inadequate financing by counties to get vaccines from the regional stores to the health facilities and challenges of terrain and the vastness of counties. This study recommends that the national and county government increase messaging for COVID-19 vaccine uptake; civil society organizations and the media aid in addressing the myths and misconceptions about the vaccine; counties can consider door-to-door vaccination where feasible to help reach more people, as well as allocate funds for vaccine transportation; the government should provide updated vaccination center location data to the public; and in the counties affected by conflict, drought as well as hosting refugees, the vaccinators should adhere to humanitarian principles of impartiality, neutrality, independence, and humanity while administering the vaccine. Finally, the Ministry of Health, through public participation, ought to stipulate policy guidelines to encourage parents to provide consent for their teenagers to receive the vaccine.



1.0 *Background*

Vaccine equity refers to a situation whereby vaccines are allocated across all countries, regions and locations based on needs and regardless of their economic status. Access to and allocation of vaccines should be based on principles grounded in the right of every human to enjoy the highest attainable standard of health without distinction of race, religion, political belief, economic, or any other social condition.¹

Vaccine hesitancy refers to reluctance to receive vaccines, especially those new to the market. Vaccine hesitancy is not a new phenomenon. However, it is still important to research the perceptions people hold about COVID-19 vaccines, specifically. It is also important to

identify why the population is reluctant to be vaccinated. Understanding these areas can help health authorities more effectively engage their communities, increase vaccine uptake, and in so doing protect those most vulnerable to infectious disease by slowing the spread and easing the burden on health systems.²

Globally, the distribution of vaccines is shaped by challenging political, economic, social, diplomatic, and health-related matters. Therefore, accurate and up-to-date data and information are critical components in guiding the international community's understanding of vaccine equity and can shed light on the blind spots essential for achieving the 'last mile' on vaccine equity.

1. Kupferschmid, K. (2020). *Global plan seeks to promote vaccine equity, spread risks*. 489-490.

2. Orangi, S. (2021). *Preprint—Assessing the level and determinants of COVID-19 vaccine confidence in Kenya*.

Kenya established the Expanded Programme for Immunization (EPI) in the 1980s to aim at preventing childhood diseases, for example, tuberculosis, polio, diphtheria, whooping cough, tetanus, and measles to all children in the country as well as tetanus toxoid vaccination for all pregnant women. Prior to this, the country had an ad hoc process of administering vaccines through the use of health facilities and schools. In the 1970s manufacturing of vaccines was done by the National Public Health Laboratories. The KEPI programme was designed to focus on service delivery for health. However, there are challenges that the Ministry was faced with, despite achieving Universal Child Immunization and immunizing – 80% of the population. Emerging challenges included sustaining routine immunization coverage in all districts, eliminating of neonatal tetanus, and strengthening EPI disease surveillance.³

The Division for Vaccines and Immunization at the national level Ministry of Health was set up in 2007 to coordinate immunization services for the public at the national level³. The division works presently in close coordination with the county governments who are presently mandated to provide service delivery for health

at contextual subnational levels. Schedule IV of the Constitution of Kenya 2010, separates the functions of the county and national government on health. County-level functions include: ensuring there is adequate county health facilities and pharmacies; ambulance services; promotion of primary health care; licensing and control of undertakings that sell food to the public; veterinary services (excluding regulation of the profession); cemeteries, funeral parlors, and crematoria; and refuse removal, refuse dumps and solid waste disposal. The national government on the other hand is responsible for health policy formulation.⁴ Procurement and purchase of some specific health commodities, which include vaccines, family planning commodities, TB drugs, antiretrovirals and Malaria drugs and treated nets are purchased at the national level. Counties on the other hand, are mandated to cost for transportation of the vaccines and commodities and ensure the distribution of vaccine facilities at different levels. The COVID-19 vaccine distribution has currently adopted the structure of routine immunization in the channel of distribution of vaccines to facilities.

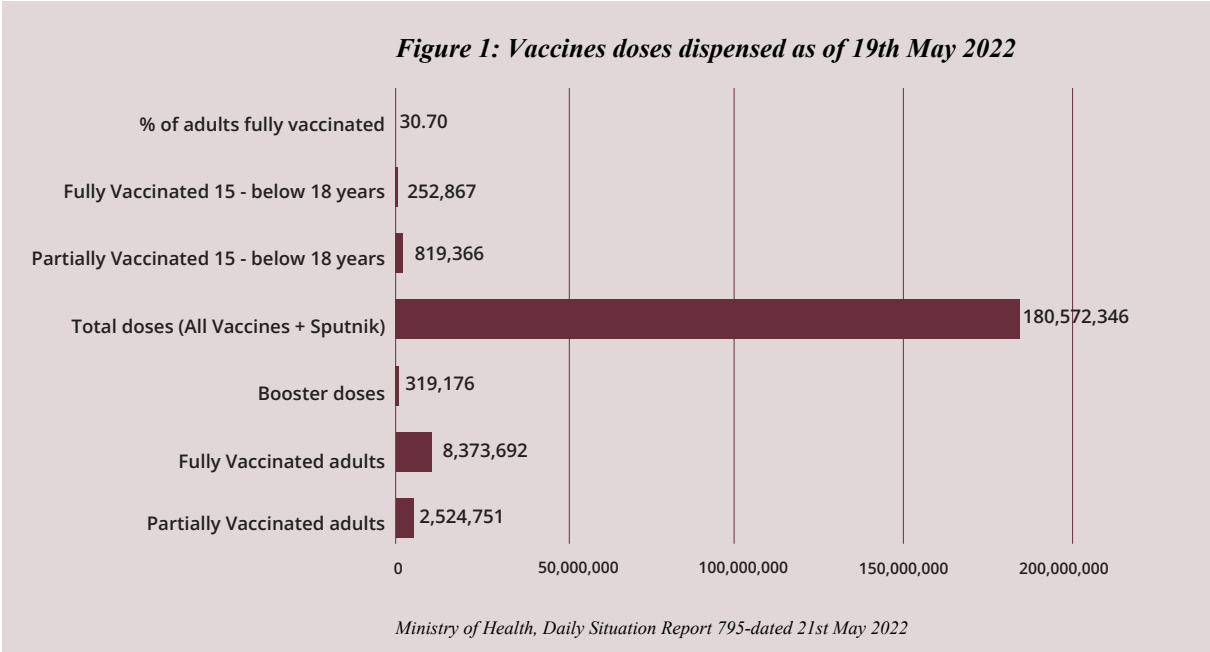
As of 21st May 2022, all the 47 counties cumulatively, reported cases of COVID-19 as follows:

1. Nairobi - 131,614	13. Kericho - 5773	25. Garissa - 2668	37. Tharaka Nithi - 1241
2. Kiambu - 20204	14. Kitui - 4893	26. Embu - 2638	38. Vihiga - 1097
3. Mombasa - 17952	15. Murang'a - 4442	27. Trans Nzoia - 2367	39. Marsabit - 997
4. Nakuru - 17070	16. Kakamega - 4201	28. Nandi - 2360	40. West pokot - 855
5. Uasin Gishu - 10570	17. Meru - 4086	29. Kirinyaga - 2257	41. Isiolo - 773
6. Kisumu - 7817	18. Kisii - 3722	30. Homa Bay - 2114	42. Lamu - 772
7. Machakos - 7621	19. Migori - 3352	31. Nyamira - 2080	43. Elgeyo Mara Marakwet - 532
8. Kajiado - 7597	20. Laikipia - 3220	32. Taita Taveta - 2046	44. Mandera - 447
9. Kilifi - 7003	21. Bungoma - 3150	33. Baringo - 1682	45. Tana River - 409
10. Busia - 6539	22. Makueni - 3076	34. Bomet - 1678	46. Samburu - 315
11. Siaya - 6432	23. Nyandarua - 2986	35. Narok - 1371	47. Wajir - 300
12. Nyeri - 5865	24. Turkana - 2671	36. Kwale - 1347	

3. MoH. (2013). NATIONAL POLICY GUIDELINES. Kenya.

4. Commission, Kenya Law Reform. (2022, June 27). Retrieved from Kenya Law Reform Commission (KLRC): <https://www.klrc.go.ke/index.php/constitution-of-kenya/167-schedules-schedules/fourth-schedule-distribution-of-functions-between-national-and-the-county-governments/447-1-national-government>

The Kenya Ministry of Health launched the National COVID-19 vaccinations on the 5th of March 2021. As of 19th May 2022, a total of **2,524,751 persons** were vaccinated with the 1st dose, and **8,373,692 persons** were fully vaccinated.⁵



According to the National COVID-19 Vaccine Deployment Plan 2021, Kenya’s vaccination distribution began in the month of March 2021. Deployment of vaccines in Kenya was conducted in phases. The first cohort to receive the vaccine were front-line workers who included health workers, teachers, security workers and older citizens aged above 58 years. This follows a recommendation by the COVAX Facility that priority should be given to health and social care workers (who represent approximately 3% of the country’s population), adults over 65 with other co-morbidities and other at-risk populations.

The first batch of the AstraZeneca-Oxford COVID-19 vaccine was received on the 3rd of March 2021 through UNICEF through the COVAX Facility. COVAX is committed to promoting vaccine equity globally. Kenya’s national vaccine depot is in Kitengela, Kajiado County with the government, UNICEF, WHO and other partners

supporting campaigns and distribution of the vaccine across the country. In the period 2011 to 2013, the Kenyan Government Ministry of Health (the former Ministry of Public Health and Sanitation) contracted Kitano Construction Corporation for a project estimated at 826 million yen (currently valued at Ksh 751.5 million) labelled ‘Reinforcement of Vaccine Storage in Kenya’ to construct vaccine regional center zones by the former provinces.⁶ These were in Nairobi but later moved to Kitengela which is the current national depot. The regional depot served the former provinces before introduction of counties as follows: Kakamega, to serve the Western Province; Meru serving the Eastern Province; Garissa (Northeastern province); Nyeri (Central Province); Nakuru, Eldoret (Rift Valley Province), Kisumu (Nyanza Province) and Mombasa (Coast Province).

5. Ministry of Health, (2022). COVID-19 OUTBREAK IN KENYA DAILY SITUATION REPORT- 795. Nairobi: Ministry of Health.

6. JICA. (2016). Reinforcement of Vaccine Storage in Kenya.

1.1 Purpose of the Analysis

The purpose of this research is to build on the achievements of the COVID-19 Transparency and Accountability Project (CTAP). This research will provide the dynamics of vaccine distribution and the challenge of vaccine equity in Kenya. Additionally, it seeks to interrogate issues of vaccine evolution, vaccine hesitancy, current vaccination levels, distribution, adequacy, and emerging issues. These issues are critical because the Kenya/African region has its own local norms and attitudes regarding the virus and vaccines. Notably, underlying concerns are feasible advocacy strategies and interventions that can create the circumstances or environment leading to a tangible increase in vaccine equity and vaccine uptake. The findings of this research will also be used for advocacy in vaccine equity in Kenya and other parts of the world.

1.2 Objectives of the Research

- 1 Assess the COVID-19 country context in Kenya.
- 2 Examine pathways of access to vaccines in the Country, as well as distribution dynamics and level of vaccination.
- 3 Interrogate the phenomenon of vaccine equity – priorities, measurement, enablers and other elements, taking into consideration gender equity & PLWDs.
- 4 Examine the challenge of vaccine hesitancy via an analysis of country context and drivers.
- 5 Analyze epistemic communities and response in vaccine equity debates/including citizen stories and case studies; and
- 6 Develop advocacy points and recommendations for equity and counter-hesitancy.

1.3 Literature Review

Allan, Ifedayo & Abbas (2021) conducted research on inequalities in childhood immunization coverage associated with socioeconomic, geographical, maternal, child and place of birth characteristics in Kenya. The authors analyzed full immunization coverage (1-dose BCG, 3-dose DTP-HepB-Hib [diphtheria, tetanus, pertussis, hepatitis B and Haemophilus influenzae type B], 3-dose polio, 1-dose measles, and 3-dose pneumococcal vaccines) of 3943 children aged 12–23 months from the 2014 Kenya Demographic and Health Survey. They estimated inequities in full immunization coverage using bivariate and multivariate logistic regression. The results showed that children of mothers with no education, born in home settings, in regions with limited health infrastructure, living in poorer households, and of higher birth order are associated with lower rates of full immunization.⁷

Orangi et al., (2021) assessed the Level and Determinants of COVID-19 Vaccine Confidence in Kenya. The authors conducted a cross-sectional study administered through a phone-based survey in February 2021 in Kenya. The total number of respondents of the study was 4136 people. Multilevel logistic regression was used to identify individual perceived risks and influences, context-specific factors and vaccine-specific issues associated with COVID-19 vaccine hesitancy. The findings indicated that COVID-19 vaccine hesitancy in Kenya was high at about 36.5%. The factors associated with vaccine hesitancy included rural regions, perceived difficulty in adhering to government regulations on COVID-19 prevention, no perceived COVID-19 infection risk, concerns regarding vaccine safety and effectiveness, and religious and cultural reasons. The authors recommended prioritization of interventions to address vaccine hesitancy and improvement of vaccine confidence as part of the vaccine roll-out plan.⁸

7. Allan, S., Ifedayo, A. M., & Abbas, K. (2021). Inequities in childhood immunisation coverage associated with socioeconomic, geographic, maternal, child, and place of birth characteristics in Kenya. *BMC Infectious Diseases*.

8. Orangi, S., Pinchoff, J., Mwangi, D., Abuya, T., Hamaluba, M., Warimwe, G., . . . Barasa, E. (2021). Assessing the Level and Determinants of COVID-19 Vaccine Confidence in Kenya. Nairobi: National Centre for

Similar results were found by Marzo et al., (2022) who conducted a study on Hesitancy in COVID-19 vaccine uptake and its associated factors among the general adult population in six Southeast Asian countries. They used a snowball sampling approach and conducted a descriptive cross-sectional study among 5260 participants in Indonesia, Malaysia, Myanmar, Philippines, Thailand, and Vietnam between February and May 2021. The data was analyzed using Binary logistic regression and a backward conditional approach was applied to identify factors associated with COVID-19 vaccine hesitancy. The findings indicated that the optimistic perception of COVID-19 vaccines' effectiveness and willingness to receive them promoted the uptake of the COVID-19 vaccine. However, about half of them still expressed their hesitancy in getting vaccinated. The hesitation was associated with several socioeconomic factors that varied by country.⁹

Amref, Path & JSI (2021), conducted qualitative research with healthcare workers (HCWs) and Community Health Volunteers (CHVs) and community members in Kisumu and Turkana counties in Kenya to address COVID-19 vaccine hesitancy as well as their current sources of information and types of messaging they receive on COVID-19. The findings indicated that uptake of the vaccine among the young healthcare

providers in Turkana and Kisumu is low. This is especially because they have concerns about the vaccine's side effects, global health concerns on blood clotting and lack of COVID-19 information, among others.¹⁰ The findings of this research are similar those found by Orangi, et al., (2021) and Marzo, et al., (2022).

Afolabi, et al., (2022), tracked the uptake and trajectory of COVID-19 vaccination coverage in 15 West African countries. The authors used publicly available country-level population estimates and COVID-19 vaccination data. The findings indicated that after three months of the deployment of COVID-19 vaccines across the Economic Community of West African States (ECOWAS) countries, only 0.27% of the region's total population had been fully vaccinated. The authors indicated that if ECOWAS countries follow this trajectory, the sub-region will have less than 1.6% of the total population fully vaccinated after 18 months of vaccine deployment. The projection indicated that in order to achieve a COVID-19 vaccination coverage of at least 60% of the total population in the ECOWAS sub-region after 9, 12 and 18 months of vaccine deployment, the speed of vaccination must be increased to 10, 7 and 4 times the current trajectory, respectively.¹¹

Overview of the Literature

Literature indicates that Vaccine hesitancy is not a new phenomenon, and it has been in existence prior to COVID-19 outbreak in Kenya as well as other parts of the world. The reasons for hesitancy differ from country to country but common reasons are: lack of education on the importance of vaccination, cultural and religious reasons, as well as general fear of injection. The literature indicates that government policy on vaccination and creation awareness has been previously used to ensure that the population is vaccinated. This research will assess vaccine distribution and hesitancy across Nairobi, Busia, Kisumu, Mombasa, Turkana and Kilifi counties to fill the gaps on hesitancy across the different regions, vaccine distribution channels, challenges as well as measures used to prevent the spread of the COVID-19 vaccine.

9. Marzo, R., Sami, W., Alam, Z., Acharya, S., Siyan, Y., Shrestha, S., . . . Baldonado, A. (2022). Hesitancy in COVID-19 vaccine uptake and its associated factors among the general adult population: a cross-sectional study in six Southeast Asian countries. *Tropical Medicine and Health*.
10. Amref, Path, Dalberg & JSI. (2021). *Kenya COVID-19 Vaccine Introduction: Addressing Vaccine Hesitancy in Kenya*.
11. Afolabi, M. O., Wariri, O., Saidu, Y., Otu A, Omoleke, S. A., Ebenso, B., . . . Yaya, S. (2021). Tracking the uptake and trajectory of COVID-19 vaccination coverage in 15 West African countries: an interim analysis. *National Library of Medicine*.



2.0 *Research Methodology*

The study used a mixed methods approach, consisting of qualitative and quantitative analysis, desktop research and virtual key informant interviews (KII) and consultations. Desk research was carried out to determine vaccine equity and distribution in Kenya, based on the gaps that were identified. Secondary data, which include limited data on the vaccine distribution channels for counties, were investigated. Also, a random sampling technique was used to collect primary data which was also used in this work. Data collection tools were developed to collect

primary data from the community and for key informants; letters were written to KIs in Kisumu, Turkana, Nairobi, Mombasa, Kilifi, and Kiambu counties through the county Officials and the Heads of Department of COVID-19 programs. Community members were randomly selected from the counties and managed to capture views of key populations; people living with disabilities, women, and people living in informal settlements. 89 respondents were interviewed from Nairobi, Mombasa, Kiambu and Turkana counties.



3.0 Findings

This section provides the findings of the research based on the objectives as outlined.

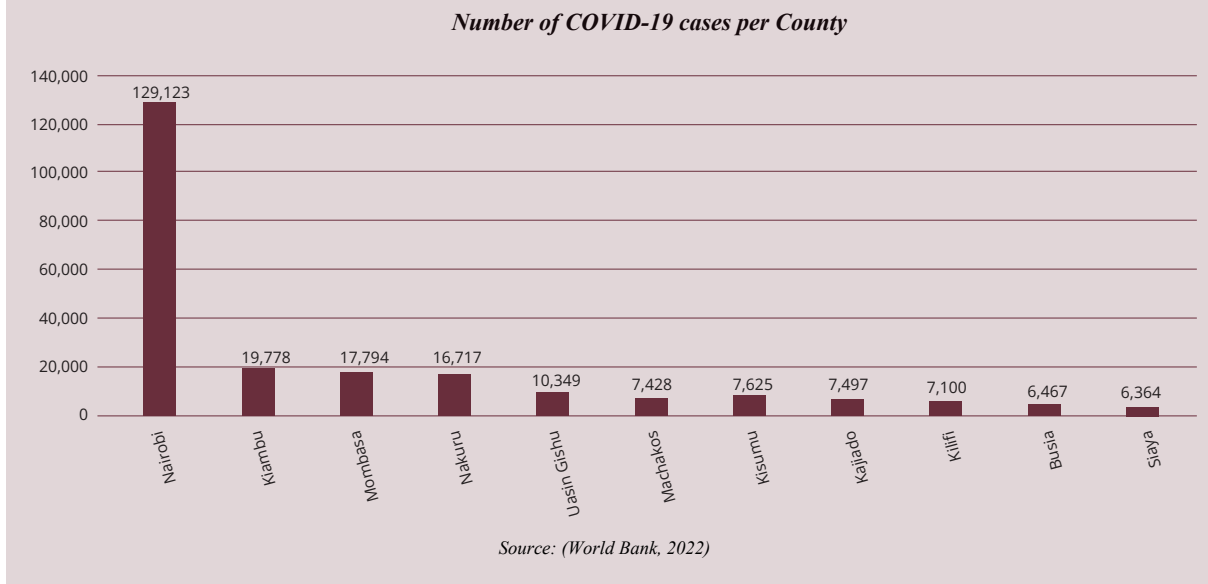
3.1 COVID-19 Country Context in Kenya

After confirming its first case on March 12, 2020, Kenya adopted several emergency measures to prevent the spread of the Coronavirus. The first measure, announced on March 13, suspended all public gatherings and meetings for a month; warned Kenyans not to abuse social media or spread misinformation on COVID-19; suspended extracurricular activities in schools (for example sports, arts and music festivals) but at the same

time kept students in schools; and allowed religious services to continue provided social distancing and hand sanitizers were put in place. The government then issued measures from April to June to limit the physical movement of people in and out of hotspots, including Nairobi, Kilifi, Kwale, and Mombasa; mandated face masks and physical distancing in public; blocked pedestrian traffic along the border with Tanzania and Somalia; and imposed a dusk-to-dawn curfew.¹² All the measures which were put in place aimed at preventing the spread of the virus.

12. Ministry of Health. (2020). *Government Measures to Prevent the Spread of COVID-19 in Kenya*. Nairobi: Ministry of Health.

Figure 2: Number of COVID-19 cases per County



As shown in figure 4, Nairobi County has been most affected by the coronavirus (COVID-19) pandemic. As of March 31, 2022, the capital registered most of the confirmed COVID-19 cases in the country totaling 129,000 in number. The amount corresponded to nearly 40% of the total cases in Kenya. In Kiambu, within the Nairobi Metropolitan Region, 19,778 infected people were registered, whereas Mombasa-Kenya's oldest and second-largest city- had 17,794 cases.

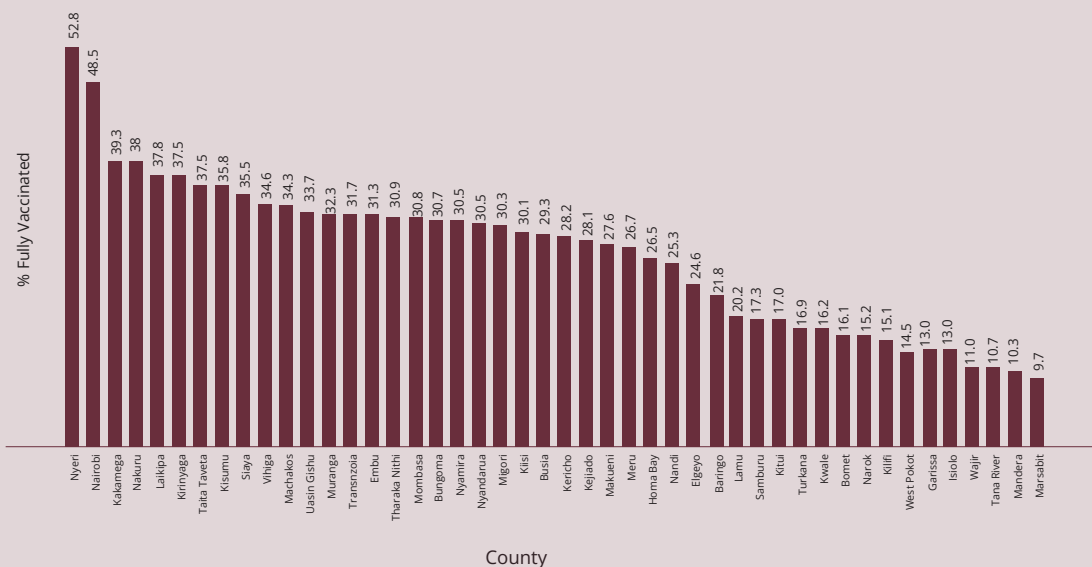
3.2 COVID-19 Vaccination in Kenya

The rollout of COVID-19 vaccination in Kenya was procured through the COVID-19 Vaccines Global Access facility (COVAX) in March 2021.¹³ The first COVID-19 vaccine, introduced in Kenya was AstraZeneca in March 2021. Later, Moderna (August 2021), Johnson and Johnson, Pfizer and Sinopharm (September 2021) vaccines were also procured based on official data from the Ministry

of Health in Kenya.⁵ As of 20th May 2022, approximately 30.7% of the population were fully vaccinated. However, other sources indicate less than 13% of the population being fully vaccinated.¹³ Nyeri, Nairobi, Kakamega, Nakuru and Laikipia have the highest number of administered doses among Kenyan counties, with around 52.8%, 48.5%, 39.6%, 26.7% and 26.5% respectively. The lowest is Marsabit with just 9.7% of the population fully vaccinated as shown in figure 5.⁵ According to the National COVID-19 Vaccine Development Plan 2021, developed by the Ministry of Health, the population receiving vaccine has been prioritized by vulnerability, vaccine availability, and health system capacity. The estimated total cost of implementing the plan targeting vaccination of 26 million people is Kshs.46.3 billion (USD 421.3 million).

13. Our World in Data. (2022, May 22). Our World in Data. Retrieved from Our World in Data: https://ourworldindata.org/covid-vaccinations?country=OWID_WRL

Figure 3: Percentage of fully vaccinated per county in Kenya



Source: (Ministry of Health, 2022).

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3.3 Pathways of vaccine distribution on Kenya

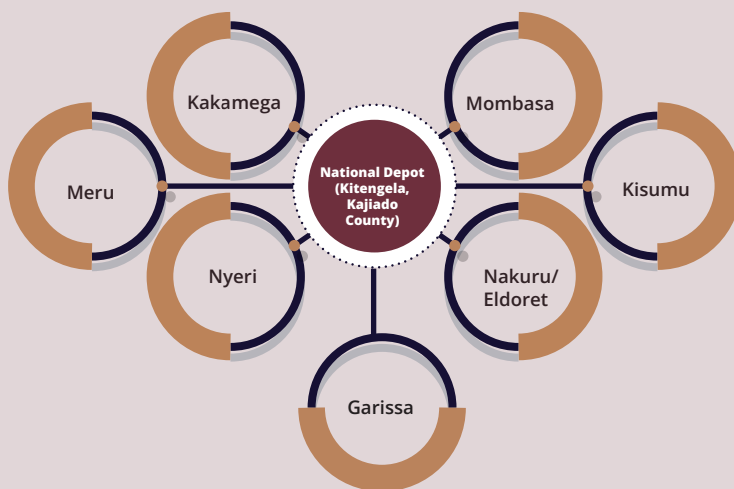
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14. GAVI. (2021, May 22). COVAX vaccine roll-out. Retrieved from GAVI: <https://www.gavi.org/covax-vaccine-roll-out/kenya#:~:text=Kenya%20completes%20its%20first%20round,of%20COVID%2D19%20vaccine%20doses>

15. Ministry of Health. (2022). KENYA COVID-19 VACCINATION PROGRAM- Daily Situation Report: . Nairobi: Ministry of Health.

Figure 4: The vaccine distribution channel

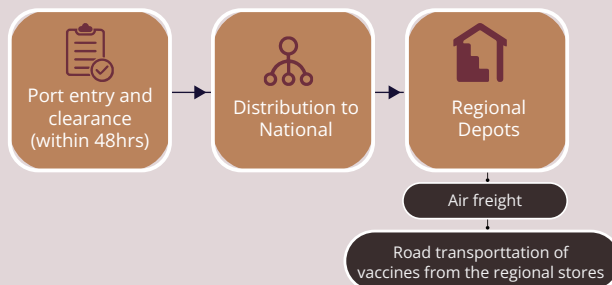


County distribution of vaccines from the regional centers

The Ministry of Health, through the Vaccine Independence Initiative Agreement with UNICEF, facilitated the clearing of vaccine consignments

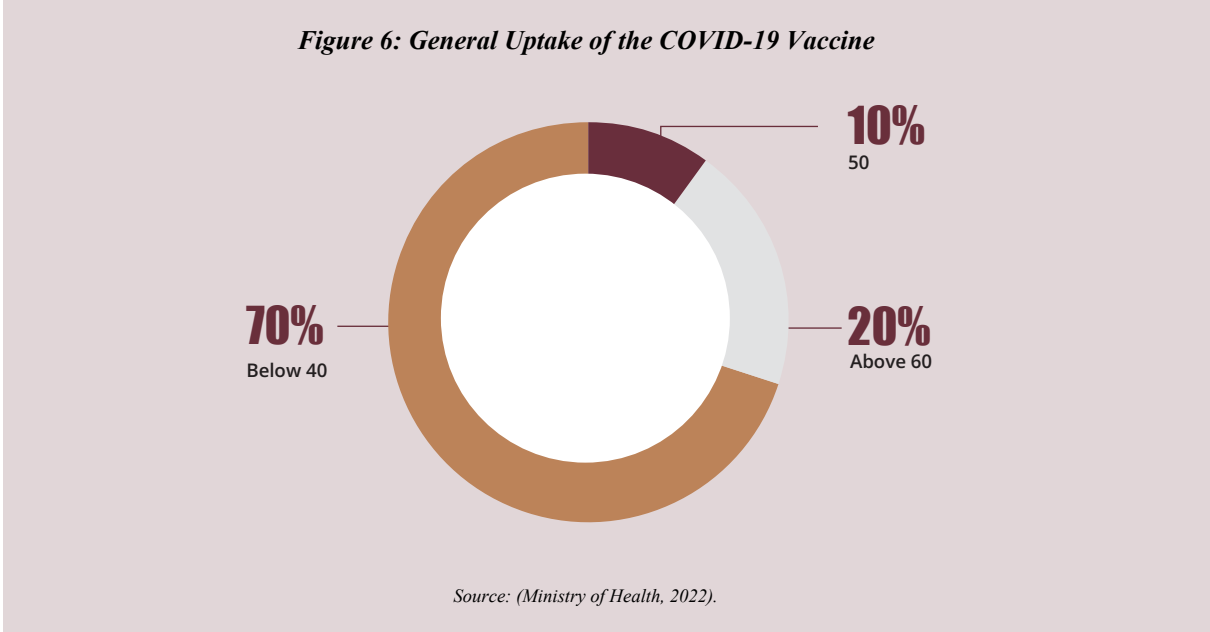
at the ports within 48 hours. Vaccine delivery to counties from regional offices takes a mixed approach as demonstrated below:

Figure 5



3.4 Phenomenon of Vaccine Equity - Priorities, Measurement, Enablers and other Elements Taking into Consideration Gender Equity & PLWDs

Figure 8 shows that 70% of the respondents perceived that the general uptake of the COVID-19 vaccine was below 40%, 20% of the respondents indicated that at least 50% of the population had been vaccinated and 10% of the respondents indicated that at most 10% of the population had been vaccinated. This finding implies that the perceived vaccination rate across counties has not been uniformly done indicating gaps in distribution of the vaccine.



On giving priorities during the vaccination process, the feedback from interviews indicated that those given priority during vaccination were doctors, teachers, the aged and people in the health sector. A respondent indicated that *“Asking questions on our profession was really challenging since some of us are not proud of what we do as commercial sex workers. I particularly felt discriminated [sic], and I had to go very far to get the vaccine. In my opinion, commercial sex workers should have been given priority since we interact with people in a more intimate manner thus putting them at a high risk of COVID-19”*.

The finding showed that people with disabilities were not given any special consideration. For instance, some had to walk long distances to where the vaccine was being administered. It is important to note that both women and men

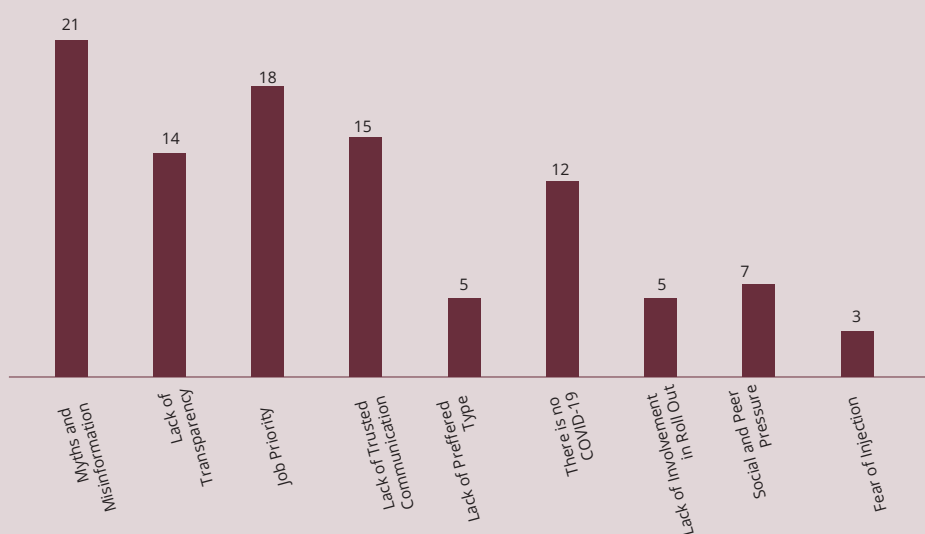
were given the vaccine despite the challenges they faced. The respondents pointed out that availability of the community health volunteers was a key element in enabling them to get information about COVID-19 vaccination. Additionally, the radio, television and other social media provided avenues for the Ministry of Health to disseminate the information on COVID-19.

3.5 Examining the Challenge of Vaccine Hesitancy via an Analysis of Country Context and Drivers

Out of the 89 respondents interviewed, 70% alluded that about less than 40% of the population has been fully vaccinated. The remaining 60% who were not vaccinated. The following reasons indicate their hesitancy toward the COVID-19 vaccine.

Figure 7: Reasons for COVID-19 vaccine Hesitancy

Reasons for Covid-19 Hesitancy



Source: (Authors Computation)

● **Myths and Misinformation**

The major reason for COVID-19 vaccine hesitancy is the myths and misinformation surrounding the vaccine. For instance, the majority of community respondents indicated that the vaccine would affect their reproductive capacity. Myths and misinformation are spreading, primarily through word-of-mouth and social media. The community sees no meaningful effort to respond to the myths and misinformation and health care workers do not feel equipped to address people's concerns.

● **Lack of Transparency**

Another reason associated with COVID-19 hesitancy is lack of transparency in terms of COVID-19 knowledge awareness. The community respondents indicated that before the vaccine was administered, there was a lot of fear regarding the side effects.

Community members and health care volunteers feel that the information they received on the COVID-19 vaccine from local governments and health care institutions was not well coordinated and lacked consistency, particularly with regards to the potential side effects and availability of doses.

● **Job priority**

Furthermore, the population was hesitant to take up the vaccine because they prioritized their work more than the vaccine. At the onset of the pandemic, most of the people lost their sources of livelihood. Therefore, they had to do menial jobs including construction and selling merchandise at the market to get their daily needs. It was thus difficult to work and at the same time go for the COVID-19 vaccine.

● ***Lack of trusted channels of communication in relaying COVID-19 information***

The findings also showed that a lot of channels used, including the international media, were not trusted especially in the rural areas. Most people in the rural and urban areas trust churches, community leaders and local administration, which was not initially used in the campaigns for COVID-19 vaccination; thus, a majority of the community members were not convinced of the vaccine's safety.

● ***Lack of availability of preferred COVID-19 vaccine type***

The population was hesitant to take the vaccine due to the lack of availability of the preferred COVID-19 vaccine. The respondents indicated that they preferred the Janssen vaccine (developed by Johnson and Johnson) as compared to the others because it had one dose as compared to the others which required two doses. The one dose jab was particularly preferred in the nomadic regions e.g., Turkana due to their nature of movement as well as the younger population who preferred the one jab so that they can get done with their dose instead of having to wait for a second dose.

● ***The Population believe that there is no COVID-19***

The findings indicated that most people, especially those living in rural areas, believed that COVID-19 does not exist in their locations since they did not interact with people from the city.

● ***Lack of Involvement During Rollout***

Health care workers (HCWs) expressed concerns that the government did not involve them, their associations, or unions in vaccine rollout. This created information gaps and consequently decreased their level of confidence in the vaccine. Being frontline healthcare providers, inclusion before rolling out would have equipped them with the relevant knowledge that they would

share with other healthcare workers and the community. HCW unions and associations are powerful in influencing HCWs. The involvement of such unions would be influential in disseminating vaccine information among HCWs and thus increase uptake.

● ***Social and peer pressure***

The findings also indicated that some individuals were hesitant to get the COVID-19 vaccine because their peers did not get the vaccine. In addition, social media materials against the vaccine made some individuals hesitant to take the vaccine.

● ***Fear of injection***

Fear of injection was also a barrier for some individuals who preferred a nasal drop, as compared to the injection. The fear of being injected the vaccine made people hesitant to take the vaccine.

3.6 Epistemic Communities' Response in Vaccine Equity Debates/Including Citizen Stories and Case studies

The findings indicate that the COVID-19 vaccine was equitably distributed to all parts of the counties under evaluation but at the sub-county levels, the challenges faced by the communities varied based on the geographical characteristics. For instance, in Nairobi County, the distribution challenge was mainly faced in the informal settlement areas where there was only one location where the vaccine was administered. Some organizations, including Kenya Medical Research Institute (KEMRI), have put in place programmes that ensure that women, People with Disabilities (PWDs), marginalized communities, and the elderly are vaccinated. The government has put in some efforts on vaccine equity e.g., vaccination campaigns in schools and marketplaces to make sure there is awareness as well as access to vaccines. These however are done on an occasional basis and not routine basis.

The general challenges associated with COVID-19 uptake in the selected counties include:

- ❶ Very few people were sensitized on COVID-19.
- ❷ The cost of transporting the vaccine was very challenging (it was very expensive), even for one county. It was impossible to order vaccines quarterly.
- ❸ No consistent financial support exists to distribute COVID-19 vaccine from sub-county depots to the health facilities.
- ❹ Lack of cold chain equipment in some health facilities that would be used to store COVID-19 vaccine and used for the vaccination assignment.
- ❺ Some areas were very hard to reach thus limiting the distribution of COVID-19 vaccine.

3. Ministry of Health, The Kenya Harmonized Health Facility Assessment (KHFA) 2018-2019 (2020) <https://www.health.go.ke/wp-content/uploads/2020/01/KHFA-2018-19-Popular-version-report-Final-.pdf>

4. World Bank Databank(2022) <https://data.worldbank.org/indicator/SH.MED.NUMW.P3?locations=KE>



4.0 *Conclusion and Recommendations*

Conclusion

This study conclusively finds that the COVID-19 vaccine encountered hesitancy during its distribution among the recipients across different counties in Kenya. Most of the population were hesitant to get the COVID-19 vaccine due to various reasons including myths and misinformation, lack of transparency of COVID-19 information, social and peer pressure, the perception of 'there is no COVID-19', fear of injection, and job prioritization among the

population. The study also revealed that as of May 2022, about 30.7% of the total population in Kenya had been fully vaccinated and the government, together with other stakeholders, was promoting campaigns that would enhance the COVID-19 uptake. At the county level, the distribution of vaccines followed the routine pathway of vaccine distribution whereby the COVID-19 vaccine is transported from the country depot in Kitengela to the regional county depots at county levels where there is a cold room for storage. The counties then place their

orders through the E-chanjo system based on the sub-county orders and consumption rate of vaccines. Any buffer stock remains at the regional cold room. From County depot, the sub-counties can get the vaccine based on their orders. The sub-counties have refrigerators and freezers that store the vaccine. To obtain the COVID-19 vaccine, the health facilities make orders to sub-county depots. It is important to note that the transportation of the vaccine from the sub-county depot to health facilities is shared between the county governments and partners who support the COVID-19 vaccination. Key challenges experienced at the county level include lack of consistent financial support to distribute COVID-19 vaccine from sub-county depots to the health facilities; lack of cold chain equipment in some health facilities that would be used to store COVID-19 vaccine (and used for the vaccination assignment); and lastly some areas were very hard to reach due to infrastructural problems.

The following recommendations have been provided to prevent COVID-19 hesitancy and promote uptake of the COVID-19 vaccine.

4.1 Recommendations and Advocacy Points

This study provides the following recommendations to ensure equitable distribution of the COVID-19 vaccine as well as counter COVID-19 Hesitancy in Kenya:

- 1 The national and county governments together with the Ministry of Health should engage with unions, community leaders, community health workers, and congregations to create awareness about the COVID-19 vaccine and address misconceptions through community Q&A sessions, regular on-the-job training for health care workers, and community-based mobile campaigns in
- 2 COVID-19-compliant settings. The National government, County governments and CSOs in health should address myths and misinformation head-on, by sharing counter facts and evidence over official media, official and influencer social media, community platforms, and any other platforms where the myths have originated.
- 3 The national and county governments together with the Ministry of Health should include community members and health care workers in the design and dissemination of vaccination campaigns through community research, piloting and testing, and strategy workshops.
- 4 Where feasible, the door-to-door vaccination approach, used for other vaccines like polio should be embraced in administering the COVID-19 vaccines to ensure everyone is vaccinated.
- 5 The national government should provide information on vaccination centers and ensure the community gate-keepers are aware of all the COVID-19 vaccination centers.
- 6 County governments should allocate sufficient funds for transportation and distribution of the COVID-19 vaccine from the sub-county depots to the health centers.
- 7 Ensure that vaccination campaigns in conflict-affected areas like West Pokot, Turkana and Samburu areas adhere to humanitarian principles. Those organizing vaccination campaigns in conflict-affected areas should adhere to the humanitarian principles of impartiality, neutrality, independence, and humanity. To this end, they should be cautious about using military or security forces in vaccination campaigns. They should also engage with communities to

build trust and reduce vaccine hesitancy, especially in areas where populations may distrust state actors.

- 8 The government should enforce policies on vaccination, especially for access where parents' consent is needed in COVID-19 vaccination among the children. Policy approaches are sometimes needed to

influence decision-making. Other state departments should collaborate with the Ministry of Health to ensure that the COVID-19 vaccine is administered i.e., the Department of Communication should continue giving briefs on COVID-19 and the Ministry of Education should promote vaccination of children under 18 among others.



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