

# COVID-19 Decision Impacts: Vaccine Hesitancy, its Barriers and Impact Studies: Taking Bayelsa State as an Example.

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## Case Report

**Keywords:** Vaccine hesitancy, COVID-19, Community-based leaders, Integrated advocacy and communications, immunization programme, health system, IA2030 strategy, Bayelsa State

**Posted Date:** May 27th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-566532/v1>

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# Abstract

**Background:** Immunization is the foundation of the primary health care system, an indisputable human right as well as a global health and development success story, saving millions of lives yearly. We now have vaccines to prevent more than 20 life-threatening diseases, helping people of all ages live longer, healthier lives. Yet despite tremendous progress, far too many people around the world, including nearly 20 million infants yearly have insufficient access to vaccines. In some countries, progress has stalled or even reversed, and there is a real risk that complacency will undermine past achievements.

**Purpose:** The current study aimed to explore vaccine hesitancy, its barriers and impact studies regarding COVID-19 decision impacts and to provide policy and decision makers and operational staff with evidence to inform decisions to promote vaccine uptake across Bayelsa State.

**Methods:** A literature review tried to do a deep dive by using a variety of search engines such as Scopus, Research Gate, Mendeley, Summon, PubMed, Google Scholar, Hinari, Dimension, Academia, CAB Abstract, OARE Abstract, SSRN search strategy to retrieve research publications, “grey literature” and expert working group reports, including authors field experience.

**Findings:** Absence of uniform methods of organization in the various health care facilities upon which we were obliged to rely. Thus, affecting the overall immunization programme and health system. Hence, policy must urgently address these challenges with emphasis on policy clarity while continuously improving infrastructure.

**Conclusions:** The findings suggest that the involvement of community-based leaders can improve community participation and acceptance, while enhancing and strengthening integrated disease surveillance and adverse events following immunization (AEFI) monitoring and reporting systems; and conducting integrated advocacy and communications activities to promote demand for vaccination as part of increasing overall demand and acceptability of all essential PHC services. Thus, breaking barriers of vaccine hesitancy.

## Introduction

Global events of the past year have made even the most seemingly bulletproof vulnerable to disruption, as the COVID-19 pandemic of 2020 opened our eyes to the ever-changing conditions and uncertainty that exists in our world today (Gift & Olalekan, 2020; Raimi & Raimi, 2020; Gift *et al.*, 2020; Samson *et al.*, 2020; Raimi *et al.*, 2020; Morufu *et al.*, 2021; Morufu *et al.*, 2021). As at May, 2021, in excess of 7m – 13 million individual’s deaths around the globe, now tragically including thousands daily in India, have died from severe COVID-19 pandemic and the threat of future pandemics (such as with a novel flu strain) have and will continue to strain even the most resilient health systems. This has been likened to a “Chernobyl moment” due to the gravity of its threat to global health and security, and the rich world have suffered relatively badly. Despite concerns early in the pandemic, African nations have performed better than many expected in terms of limiting the spread of COVID-19. As vaccine production and distribution

continue to scale up, it remains critical to ensure global access and increase vaccination coverage in order to provide protection before epidemics have an opportunity to surge, which could threaten many countries' due to limited health system capacity and vulnerable infrastructure. Though incredible progress has been made in a little more than a year to develop effective vaccines, diagnostic tests, and treatments, thus far, tens of millions of patients have survived COVID-19 as well as returned to everyday life. Increasing evidence has shown that a considerable proportion of patients did not recover fully and had lasting sequelae, described by various terms without consensus, including long COVID, post-COVID condition or syndrome, postacute (or late) sequelae of COVID-19, and post-acute COVID syndrome (Delorev *et al.*, 2021; Melms *et al.*, 2021; Morufu *et al.*, 2021). While, there are risks as well as opportunities in vaccine hesitancy, the vaccine hesitancy as a significant barrier towards achieving the Immunization Agenda 2030 (IA2030) targets for immunisation. Hence, the Immunization Agenda 2030 (IA2030) is based on a conceptual framework of seven strategic priorities. Each strategic priority has defined goals and objectives and key areas of focus. Action is necessary to achieve these interrelated strategic priorities to realize the overall vision and goals and to ensure that immunization fully contributes to stronger primary health care and attainment of universal health coverage. While it aims to align the activities of community, country, regional and global stakeholders to build effective partnerships both within and outside the health sector as part of efforts to achieve universal health coverage (UHC) and accelerate progress towards the 2030 Sustainable Development Goals (SDGs). Indeed, immunization is the foundation of a healthy, productive population. Preventing infections, reduces the burden on health systems, and a healthier population is a more productive one and children protected against infectious diseases have better educational attainment and contribute more to national development as well as prosperity. So, immunization tend to reach more people than any other health or social service and is a vital component of primary health care. It benefits individuals, communities, countries and the world. It is an investment in the future. Therefore, it plays a critical role in achieving the SDGs, specifically SDG3, "Ensure healthy lives and promote well-being for all at all ages", and also contributes directly or indirectly to 13 other SDGs (see figure 1). Thus, immunization and disease surveillance are core capacities required by the International Health Regulations (2005), as they contribute to resilient, sustainable health systems that can respond to infectious disease outbreaks, public health risks and emergencies (Semenza *et al.*, 2019). Meaning, a 10% increase in the core capacities is associated with a 19% decrease in the incidence of cross-border infectious threats (Semenza *et al.*, 2019). Also, between 2010 and 2017, the mortality rate of children under 5 years of age decreased by 24%, due in large part to immunization (Global burden of disease, 2017) and vaccines will help keep an estimated 24 million people from falling into poverty by 2030 (Chang *et al.*, 2018). IA2030 envisions "A world where everyone, everywhere, at every age, fully benefits from vaccines for good health and well-being." To achieve this ambitious vision, lessons have been drawn from past field experience to identify factors that contribute to vaccine hesitancy in Bayelsa State.

In all parts, Immunization Agenda 2030 (IA2030) has set an ambitious, overarching global vision and strategy for vaccines and immunization for the decade 2021–2030. It draws on lessons learnt, acknowledges continuing and new challenges posed by infectious diseases and capitalizes on new

opportunities to meet those challenges. IA2030 positions immunization as a key contributor to people's fundamental right to the enjoyment of the highest attainable physical and mental health and also as an investment in the future, creating a healthier, safer, more prosperous world for all. IA2030 aims to ensure that we maintain the hard-won gains and also that we achieve more – leaving no one behind, in any situation or at any stage of life. IA2030 is intended to inspire and align the activities of community, national, regional and global stakeholders, including national governments, regional bodies, global agencies, development partners, health care professionals, academic and research institutions, vaccine developers and manufacturers, the private sector and civil society. Its impact will be maximized by more effective and efficient use of resources, innovation to improve performance and measures to attain financial and programmatic sustainability. Success will depend on building and strengthening partnerships within and outside the health sector as part of a coordinated effort to improve access to high-quality, affordable primary health care, achieve universal health coverage and accelerate progress towards the 2030 Sustainable Development Goals (SDGs). Thus, IA2030 has seven strategic priority areas. The first strategic priority area, immunization programmes for PHC/UHC, is overarching, to ensure that the immunization programmes are an integral part of PHC services. Countries will need to have strong linkages between PHC services and immunization programmes, particularly for reaching the target population for the COVID-19 vaccines. Other IA2030 strategic priority areas stress the importance of PHC: commitment and demand (SP2), coverage and equity (SP3), life course and integration (SP4), outbreaks and emergencies (SP5), supply and sustainability (SP6), research and innovation (SP7) (see figure 2 below).

Hesitation and resistance to vaccination is a substantial issue in Bayelsa state, particularly during the COVID-19 period which was immediately followed by flooding of the entire state (Odubo & Raimi, 2019). As vaccinations become one of the most imperative public health tools for reducing the spread and harm caused by dangerous diseases (Raimi *et al.*, 2019; Omidiji & Raimi, 2019; Olalekan *et al.*, 2020; Adedoyin *et al.*, 2020; Raimi *et al.*, 2020; Olalekan *et al.*, 2020). Immunizations have had an enormous impact on the health of children, and the prevention of disease by vaccination is one of the single greatest public health achievements of the last century. While, the global economy has continued to improve as COVID infections drop and roll-out of vaccination intensifies (see figure 3); with India as an exception, the spread of COVID-19 infections has eased. Thus far 1.2billion doses have been administered globally with 285million people fully vaccinated and a further 618million people receiving at least 1 dose. Approximately 3.7percent of the world population fully vaccinated and 7.9percent receiving a single dose (see figure 3&4 below). Striking disparities are now apparent. For example, only 1.4percent of Africa's population has been vaccinated compared with 48percent in North America (see figure 4). Thus far, high and upper middle-income countries account for 83percent of vaccinations while low-income countries account for 0.3 percent of vaccinations. Indeed, the World Health Organization estimates that vaccines prevented at least 10 million deaths between 2010-2015 globally. Despite considerable evidence that vaccines are safe, there is increasing skepticism toward vaccination. Vaccine hesitancy has led to a decline in vaccine uptake and to an increase in the prevalence of vaccine-preventable diseases (VPDs). Ironically, the objection to vaccines is commonly attributed to their effectiveness, because individuals

have little to no exposure to VPDs, they are less concerned about contracting them, which consequently leads to greater vaccine hesitancy. Hence, my experience during the coronavirus pandemic on vaccine hesitancy is that community and care givers are not willing to take vaccine due to the fake news surrounding COVID-19 vaccine. Particularly when the rumor going around that COVID-19 vaccine will be tested first on Africans. So, most caregivers think they want to make their children a sacrificial lamb. Hence, continuous health education and effective communication through the social mobilization team, the media and using community town carrier is the way out of resolving vaccine hesitancy during and after post COVID-19.

## Case Descriptions

### Case description One [Toru-Ebeni and Akeddei]

Routine Immunization Supportive Supervision featured outreach sweeps and MNTE campaign. It was during the COVID-19 Pandemic, Immunisation Routine Vaccines and non-compliance community was involved. Community involved, include care givers, religious leaders, health care workers, traditional rulers, house to house mobilizers, local government health facilities etc. Which cut across every stratum of age, gender and education. Concern include misconception that vaccination decreases natural immunity and cause diseases such as cancer as well as autism. Some parents also believe that vaccination is part of a depopulation agenda through inducing infertility and Inadequate technical knowledge by health-care providers toward answering questions and concerns that caregivers have around vaccination, which is one of the most significant factors creating mistrust amongst parents and health-care providers. All concerns were related to the routine immunization vaccine. Underlying reason is misconceptions about how vaccines function, their benefits and safety, fear, absence of trust between care givers and health workers, Some parents believe that vaccination is part of a depopulation agenda through inducing infertility and Inadequate technical knowledge by health-care providers toward answering questions and concerns that caregivers have around vaccination, which is one of the most significant factors creating mistrust amongst parents and health-care providers. My role includes distribution of a bottle of paracetamol, sensitization, counselling and dialogue with the compound chiefs, religious leaders and house to house mobilization on community engagement strategy and to make formal request to the Bayelsa State Ministry of Health and Bayelsa State Primary Health Care Board through the State Emergency Routine Immunization Coordinating Centre (SERICC) concerning the update. Specific actions considered include counselling, dialogue and sensitization. Our action involves storytelling through live cultural and dramatic performances and distribution of flip chart, posters and leaflets. This is to enable the community relate well with the message put across. This specific action was carried out during the featured outreach sweeps and MNTE campaign. We distributed a bottle of paracetamol and sensitized the caregivers at the community on the significance of routine immunization for child killer diseases prevention besides, emphasis was placed on the utmost cost-effective method toward preventing childhood diseases. We went further to state that Immunisation are one of the most important public health tools for reducing the spread of harm caused by dangerous diseases (Raimi *et al.*, 2019). We made reference to the World Health Organization estimation that vaccines help to prevent at least 10 million

deaths between 2010-2015 globally (WHO, 2020). Regarding outcome, there was considerable progress in the number of children who were vaccinated! Care givers consented and promise continued immunizing their children. Why few of the caregivers', whose husband are not around request getting permission from their husband before they can turn their children in for immunization. Also, compound chiefs, religious leaders and HHMs promised to contribute to more effectively reducing dropout, improve timeliness and completeness, and overcoming vaccine hesitancy. Flip chart, posters and leaflets help to communicate better and assisted in passing the message across easily. What surprised us is the high acceptance of immunization at a community level and high coverage rates surprised us a lot.

We actually did not follow an approach that is recommended or that is usually carried out or any that we are aware of. We try to frame a live drama (role play) and Images that promote vaccinations which tend to exclusively feature individuals and drama groups from the community to the target groups. Thus, demonstrating higher knowledge and positive-vaccine beliefs which subsequently increase demand for vaccination, and achieve high coverage rates. The key elements involved: Distribution of a bottle of paracetamol; The use of local language; Community engagement with religious leaders, traditional leaders, traditional birth attendant, community leaders, community drama groups, women groups, youths leaders etc.; Engagement of community drama group with which they culturally identify with; Using local town announcer, media channels and formats that are familiar to the local populations; and live cultural or dramatic performances (role play). The risk include: Exposure of traditional leaders to some armed groups such as kidnappers, banditry etc.; While, some member of the community finds the role play insulting, some groups do not understand it completely, thus, do not relate to it completely. For the limitations: This is limited to one community; another limitation of role playing is that more staff is needed to rehearse the role play, and that we were only able to expose one example and not many. What we did can be suggested to be applied to different countries. As we only applied the principle of community participation in environmental impact assessment for decision making (Raimi *et al.*, 2019; Omidiji & Raimi, 2019; Olalekan *et al.*, 2020; Adedoyin *et al.*, 2020; Raimi *et al.*, 2020; Olalekan *et al.*, 2020). My key recommendations include: Making available a bottle of paracetamol for caregivers as it encourages those who are unwilling to make their children available for immunization; Community participation; Reaching out through relevant types of community/local media; Identifying with the community drama group and the use of local language is a significant factor.

### **Case description Two [Bulou-Orua and Angalabiri]**

The situation occurred during End-Process monitoring activities of National Immunization Plus Days (NIPDs) supportive supervision in Bulou-Orua and Angalabiri community of Bayelsa State (see figure 5 above). During the monitoring process, we met a family with 7 children (with 3 children under 6yrs of age) who had not been immunized due to AEFI challenge the first child had with BCG during her first visit some years ago. We also met four (4) other (under 5year) children from different families who had not been immunized for fear of AEFI. They believed that going for immunization services at Health facilities could result to the child getting infected, or paralysis of the children and even death. We went back to the LGA to report the outcome of our findings to the LG authority and thus engaged Ward focal person (WFP) of the

ward, Team Supervisors that has been working in that settlement for the past 5 years, (and who is quite conversant with the families), the Health worker working in the nearest health facility of the settlement, the community/settlement leader from the settlement, End-process monitor and I (the LGAF for the cluster LGAs). As a member of the end-process monitoring support team in the Cluster LGA and with poor outcome of our findings, our role was to ensure all households within the settlement are monitored or checked for missed children from non-compliance and vaccine hesitancy, provide sensitization to the community to elicit vaccine demand and ensure all non-compliance and vaccine hesitancy cases are resolved, provide logistics and support to the vaccination team for revaccination of all missed children, and pending gaps addressed with the community and all missed eligible children fully immunized.

### **Specific actions we considered to overcome the hesitancy included**

- i. Held advocacy meetings with the community leaders to discuss the outcome of my end –process monitoring exercise and to elicit for their support and participation in creating demand for vaccines preventable diseases.
- ii. Held Sensitization meetings with the community leaders on the importance of immunization and on the need for every eligible child to be fully immunized against vaccine preventable diseases (VPDs).
- iii. Engagement of the Community leaders or representatives to follow up Health facility records to track drop-outs and identify missed children from vaccine hesitancy irrespective of the cause.

The vaccine hesitancy case was actually as a result of AEFI from previous BCG injection of her first child and so the rest of her children were never taken to the facility for anything and she resorted to self-medication using local drugs. This uncertainty causes vaccine hesitancy among other families in the community, leading to family boycott of vaccination exercises for their children. For her, we had a one-on-one discussion with her and her family members to resolve the issue. We pleaded with her on the importance of the safety of her children against all VPDs adding that the vaccines are part of government support and are for free. Adding that the vaccines may cause some slight discomfort/side-effects like pain at the site of injection, mild reaction as in BCG in some children but are very safe. We also told her that the missing point was she didn't attend the health talk held before each immunization sessions. The exercise was very successful. About 67% of the additional identified missed children were revisited and immunized. Both communities resolved to help ensure that all eligible children that were missed were taken to the health facility, their names registered in the health Facility Immunization register, given immunization card (to help track them) and they were vaccinated immediately. This strategy helped to increase demand and boost immunization coverage in that community. Community engagement of the community leaders especially the Women/Youth leaders and the one-on-one discussions with the families played a major part. However, the use of flyers and effective follow-up of both families for 2 weeks played a prominent role in resolving these cases. To have a case of vaccine hesitancy close to a facility for more than 6 years just because of lack of information or misinformation on the mild side-effects of vaccines.

Indeed, vaccine hesitancy is not new. It has been there and given a name as missed cases of vaccination. Vaccine hesitancy is a severe threat to health programmes and vaccination, it is a delay in acceptance or the refusal of vaccines, despite the availability of vaccination services at health post nearest to health care givers. It's a serious risk to the people who aren't getting vaccinated as well as hindering the efforts of health care providers from achieving herd immunity in the community and the nation in general risking the continuous transmission of vaccines preventable diseases (Raimi *et al.*, 2019; Morufu *et al.*, 2021). The lack of information and misinformation on the side-effects and the management of these side-effects caused by vaccines has contributed to people delay in the acceptance of vaccines. However, community engagement will play a prominent role in creating awareness of the vaccines as well as support community participation and acceptance, thus breaking barriers of vaccine hesitancy.

### **Case description Three [Ofoni]**

In February 2020 just before the Pandemic hit Nigeria, a 39-year-old mother in Ofoni community (see figure 5 above) during the National Immunization Plus Days (NIPDS) was hesitant and refused her child being given the Polio vaccine by the health workers. Since I was a supervisor and also deployed to the community to support the teams and help them achieve a good vaccination coverage, this incident was reported to my team. We met and discussed with her to know the root cause of her hesitancy. On investigation, we found out she had a grudge with the health care workers from the health facility in her community. She is married to a younger man and this was not culturally approved by most residents in her community. When she returned to the facility for antenatal services, she heard the news and was unhappy with the bad comments the health care workers made about her marriage. We apologized to her about the actions of the health workers and told her about polio and the importance of receiving the vaccine. She listened carefully and said she will take her child to another health facility in another community for the vaccine. We insisted and offered to administer the vaccine to her child personally. She asked that We return the next day while she makes a decision. We reported immediately to the key community leaders and the next day We returned with the Local Government Deputy Chairman, Local Health Director, Youth leader and the Traditional Head of the community. The situation was resolved and the child was given the vaccine.

At the evening review meeting, the Director of health and my team advised the health workers at the facilities to treat patients with kindness and empathy as this could ultimately affect the uptake of health care services in the community

When we had a conversation with the woman the key messages, we used to convince her include:

- i. We apologized for the actions of the health care worker
- ii. We reminded her that the health care workers were only humans and they err too
- iii. We told her what polio virus is and the importance of vaccinating her child against Polio.
- iv. We made her see the beauty in having a fully grown child with no paralysis. We showed her Acute Flaccid Paralysis pictograms

When I visited the woman and her husband alone, resolving this hesitancy was unsuccessful but the words I spoke with her broke the ice. She asked that I return the next day to vaccinate her child. But I came with a team the next day.

The Team:

- The Deputy Local Government Chairman
- The Local Health director
- The Youth Leader of the community
- The Traditional Head of the Community

These are respected personalities in the community. The deputy Chairman and the Traditional Head of the community have the authority to order that any hesitant person be forcefully vaccinated or leaves the community. This is usually the last resort. Although force was not used, they spoke with the woman kindly and apologized for the actions of the health care workers in the facility. I was surprised that actions of health care workers at a facility could ultimately affect a vaccination campaign months later. It led to vaccine hesitancy. We followed a recommended approach in handling vaccine hesitancy in communities. We have to speak with the vaccine hesitant person or people and try to resolve the issue. If unsuccessful, we bring in key community stakeholders to help resolve the issue. Key elements that made this work was:

- i. We were sent by the State Emergency Routine Immunisation Coordinating Centre (SERICC) to the community. When she was informed that a team of supervisors from the State was coming to her home, she said she thought we will be rude and authoritative but No. we chose to speak with her and address her concerns. we also spent some time to enlighten her about Polio.
- ii. The team returned to her home with the community leaders. Having them visit any home indicates that there is a serious issue that needs to be resolved.

This was the best possible approach to handling this issue and we wouldn't have handled this differently. This approach can be applied in different regions and districts in my country because community leaders are highly respected in most communities. For other countries, it will depend on the community structures that they have. On the basis of experience, we will suggest that health workers be trained on how to best relate with patients. It should be incorporated into the regular trainings they have so that it is always discussed with them. This will reduce the incidences of vaccine hesitancy from sources like bad health worker-patient relationships/bad health worker attitude. Thus, effective communication between caregivers and healthcare workers can play an important role in people's decisions to vaccinate. However, healthcare workers need the opportunity, skills as well as information to communicate better. They also need to consider the possible tension between wanting to increase vaccine uptake and wanting to support individual decisions.

**Lessons Learnt:**

- i. Listen to the views or perspective of the vaccine hesitant individual or group
- ii. Don't be quick to judge or jump to conclusions
- iii. Speak with caregivers gently and help them see reasons why they should accept the vaccine and
- iv. Involve the Community leaders because they have a way of getting through to their people

## Summary And Conclusions

The COVID-19 pandemic has reminded the world of the power of vaccines to fight disease, save lives, and create a healthier, safer and more prosperous future. Now we must rapidly and equitably deliver COVID-19 vaccines to the world. Moving forward, strong immunization systems will be needed to ensure that people everywhere are protected against COVID-19 and other diseases. Ensuring everyone receives the vaccines they need will provide exceptional return on investment and help keep the world safe from future pandemics. Thus, as at 17<sup>th</sup> of May, 2021, the WHO reported 1.26 billion doses of SARS-CoV-2 vaccines administered globally, including 637 million individuals with at least 1 dose. Only 9 African countries have reported more than 100,000 cumulative cases. While, the COVID-19 pandemic has reminded the world of the power of vaccines to fight disease, save lives, and create a healthier, safer, and more prosperous future. Now we must rapidly and equitably deliver COVID-19 vaccines to the world. As the global response to COVID-19 has pushed the boundaries on what is possible for rapid pandemic response in several areas, including advancing vaccine research and development; bolstering vaccine distribution and supply chains; reinforcing non-vaccine public health interventions and countermeasures; and encouraging global coordination, partnerships and financing. Furthermore, the global COVID-19 response has provided new data around the efficacy and best practices for pandemic planning and response. Moving forward, strong immunization systems will be needed to ensure that people everywhere are protected against COVID-19 and other diseases. Ensuring everyone receives the vaccines they need will provide exceptional return on investment and help keep the world safe from future pandemics. While, immunization has become valued and actively sought by all individuals as an essential part of primary health care and thereby contribute to universal health coverage through: (1) anticipating, preparing for, detecting and rapidly responding to vaccine-preventable and emerging disease outbreaks, and (2) ensuring immunization service delivery during acute emergencies as well as among communities affected by conflict, disaster and humanitarian crisis. While, health authorities commit to ensuring that immunization is available as a key contributor to enjoyment of the highest attainable standard of health as a fundamental right. Indeed, everyone need to be protected by full immunization, regardless of location, age, socioeconomic status or gender-related barriers. Hence, the potential health impact of improving immunization outcomes in the global south is substantial. At present, global south account for approximately 69percent of zero-dose children and 67percent of vaccine-preventable deaths. If the global IA2030 targets are to be reached, the global south must not be left behind and forgotten. As a living document, the IA2030 strategy help to extend the benefits of vaccines to everyone, everywhere and is underpinned by four core principles: it puts people in the center, is led by countries, implemented through broad partnerships, and driven by data. The IA2030 strategy systematically applies the core principles across each of the strategic priorities.

In conclusion, even though the situation in many regions of the world is very different. There are regions with a tradition in gathering information on immunization since the 70's, whereas in others there are important data gaps or even no information exists for some immunization related activities. Therefore, priorities across regions may be based on facts (existing information and reported hot spots) or suspicions that environmental levels are high due to the existence of a variety of sources. While, policy objective has been the reduction or minimization of excess mortality as well as those with certain chronic debilitating conditions. The strategy called for the routine annual immunization of high-risk persons regardless of the prospects for epidemic activity in any given year. Indeed, the earliest and most striking feature that came to our attention in planning our campaign for combating the pandemic of influenza, which has ravaged this state for the past month, was the absence of uniform methods of organization in the various health care facilities upon which we were obliged to rely. It was perfectly apparent that everyone was anxious to help. But there was likewise evidence that each wanted to go along in their own accustomed groove. A short time sufficed to prove to us that. We must coordinate these forces under one administrative head to work for the common good of all.

While, the drivers of vaccination are complex, context-specific and change over time. Regular and timely data collection, analysis and use of data on the behavioural and social drivers of vaccination uptake will inform evidence-based planning and contribute to the monitoring and evaluation of interventions. Such a systematic approach to planning will also offer insights that can potentially mitigate the negative effects of any service disruptions, system shocks and vaccine-related events. Furthermore, the introduction of a new vaccine provides many opportunities as well as challenges to improve a country's overall immunization programme as well as its health services and health system. Many of the activities carried out to prepare, implement and monitor the introduction of COVID-19 vaccination will provide opportunities to improve the immunization programme and to identify best practices that could be applied to other health programmes and services. Activities that should be integrated into the national primary health care (PHC) operational framework include: microplanning, using an evidence based decision-making process to govern the introduction of the COVID-19 vaccine; strengthening human resource management; training for new vaccine introduction; establishing new contact points for vaccination across the life course; ensuring traceability systems and technologies are leveraged to ensure the integrity and efficiency of supply chains, improving and expanding integrated project management and the supply chain; enhancing integrated disease surveillance and adverse events following immunization (AEFI) monitoring and reporting systems; and conducting integrated advocacy and communications activities to promote demand for vaccination as part of increasing overall demand and acceptability of all essential PHC services. Therefore, promoting evidence-based decision-making at all levels, strengthening immunization policies and service delivery throughout the life-course, including for appropriate catch-up vaccinations and booster doses, establish and strengthen capacity at all levels to identify priorities for innovation, and to create and manage innovation while consistently building capacity for immunizations, including synergy of COVID-19 vaccine with influenza vaccination, will be remarkable.

## Declarations

**Funding:** No specific grant was received for this study.

**Competing interests:** We affirm that we have no conflict of interest that may be alleged as prejudicing the impartiality of the study reported. This researcher did not receive special assistance from government, not-for-profit sectors or commercial institutions.

**Consent:** All the authors announced that they had received written notice from the participants.

**Disclosure Statement:** The authors are not aware of any biases, affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

**Acknowledgments:** I thank Dr. Henry Olawale Sawyerr, Dr. Clinton Ifeanyichukwu Ezekwe, Dr. Adedoyin Oluwatoyin Omidiji, Dr. Tonye Vivien Odubo and Mrs Raimi Aziba-anyam Gift as well as all anonymous reviewers, for feedback and discussions that helped to substantially improve this manuscript.

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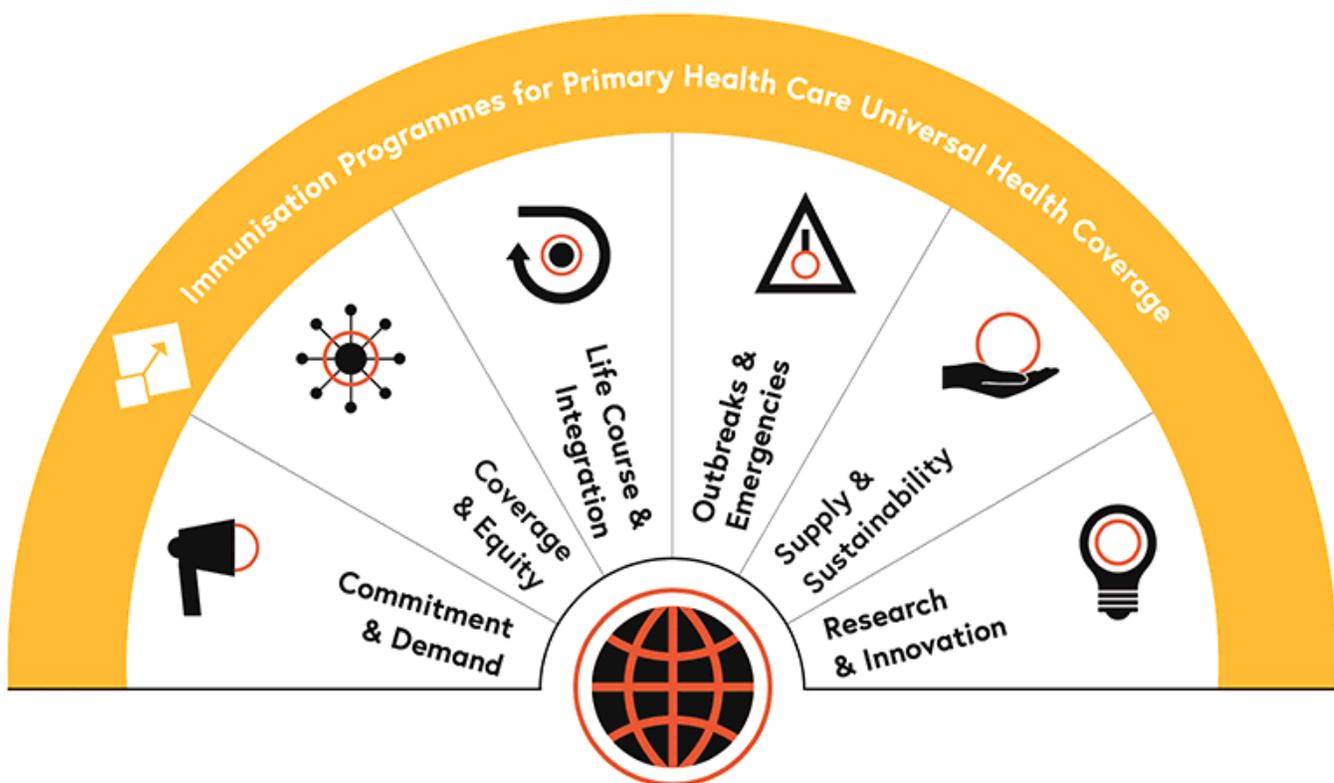
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## Figures



Figure 1

Contributions and relevance of immunization to 14 of the 17 SDGs. Source: Adapted from Semenza et al., (2019)

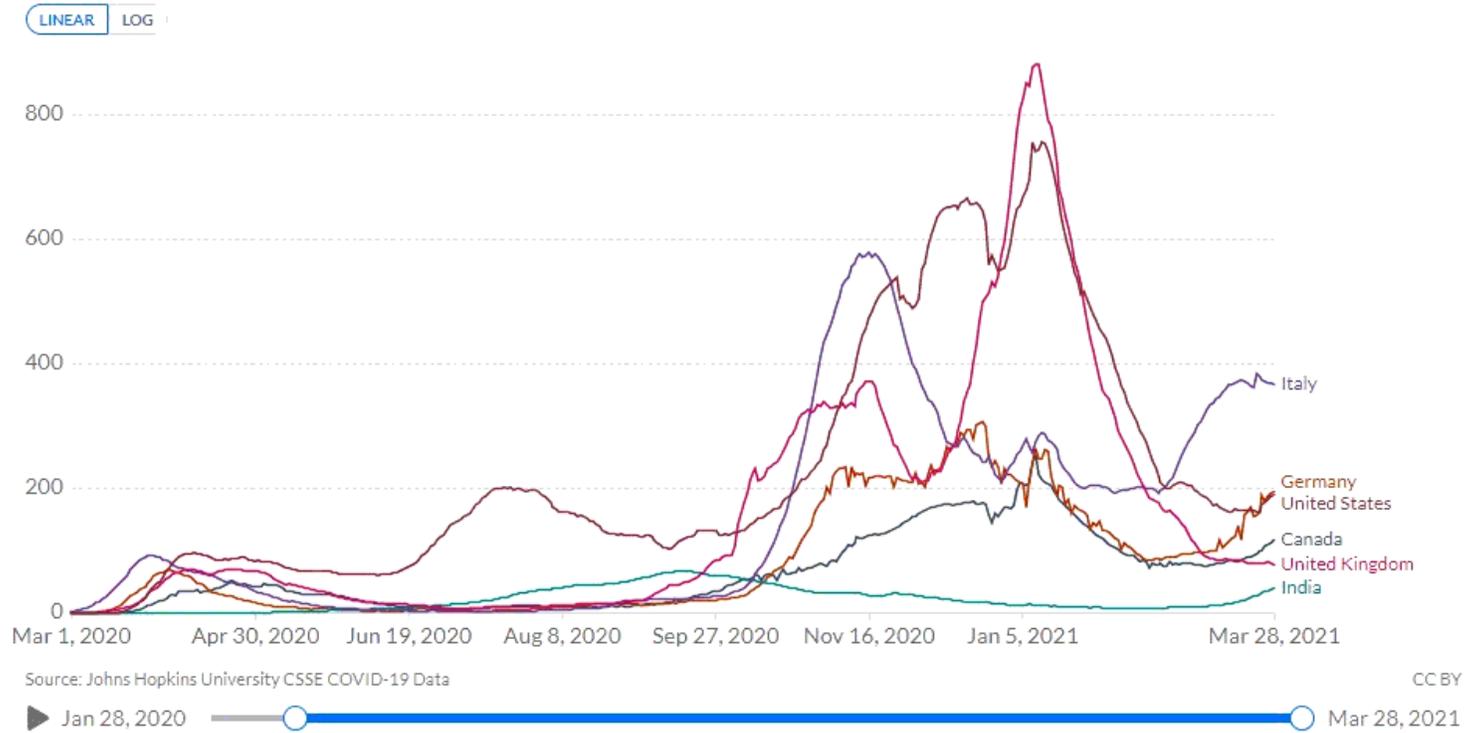


## Figure 2

Conceptual framework of Immunization Agenda 2030 (IA2030) Seven Strategic Priorities Source: Adapted from <http://www.immunizationagenda2030.org/strategic-priorities>.

### Daily new confirmed COVID-19 cases per million people

Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.



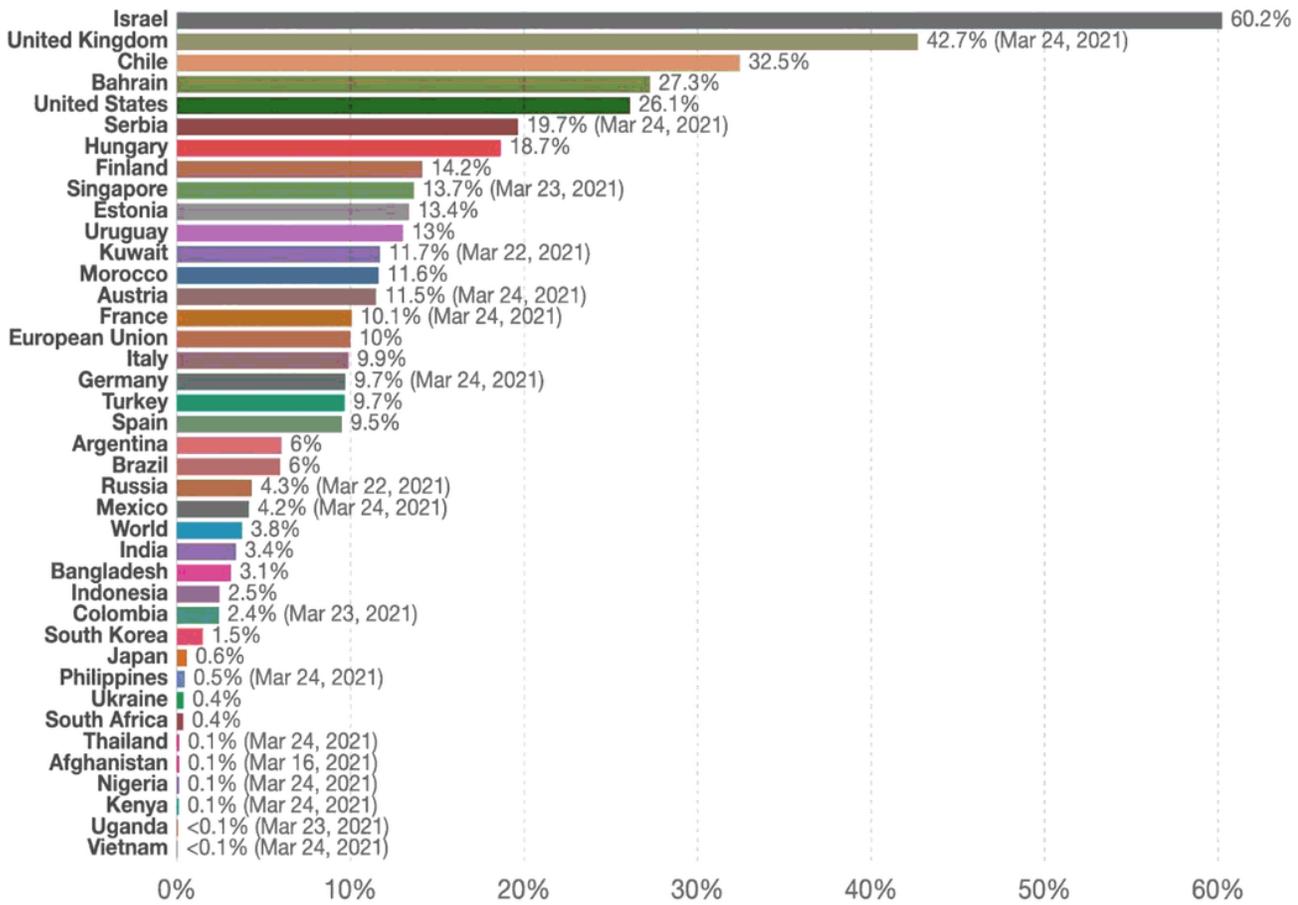
## Figure 3

COVID-19: Infections Tapering

# Share of people who received at least one dose of COVID-19 vaccine, Mar 25, 2021



Share of the total population that received at least one vaccine dose. This may not equal the share that are fully vaccinated if the vaccine requires two doses.



Source: Official data collated by Our World in Data – Last updated 26 March, 08:40 (London time)

OurWorldInData.org/coronavirus • CC BY

**Figure 4**

Vaccination Continues to Accelerate in Key Countries – Sharp Disparities

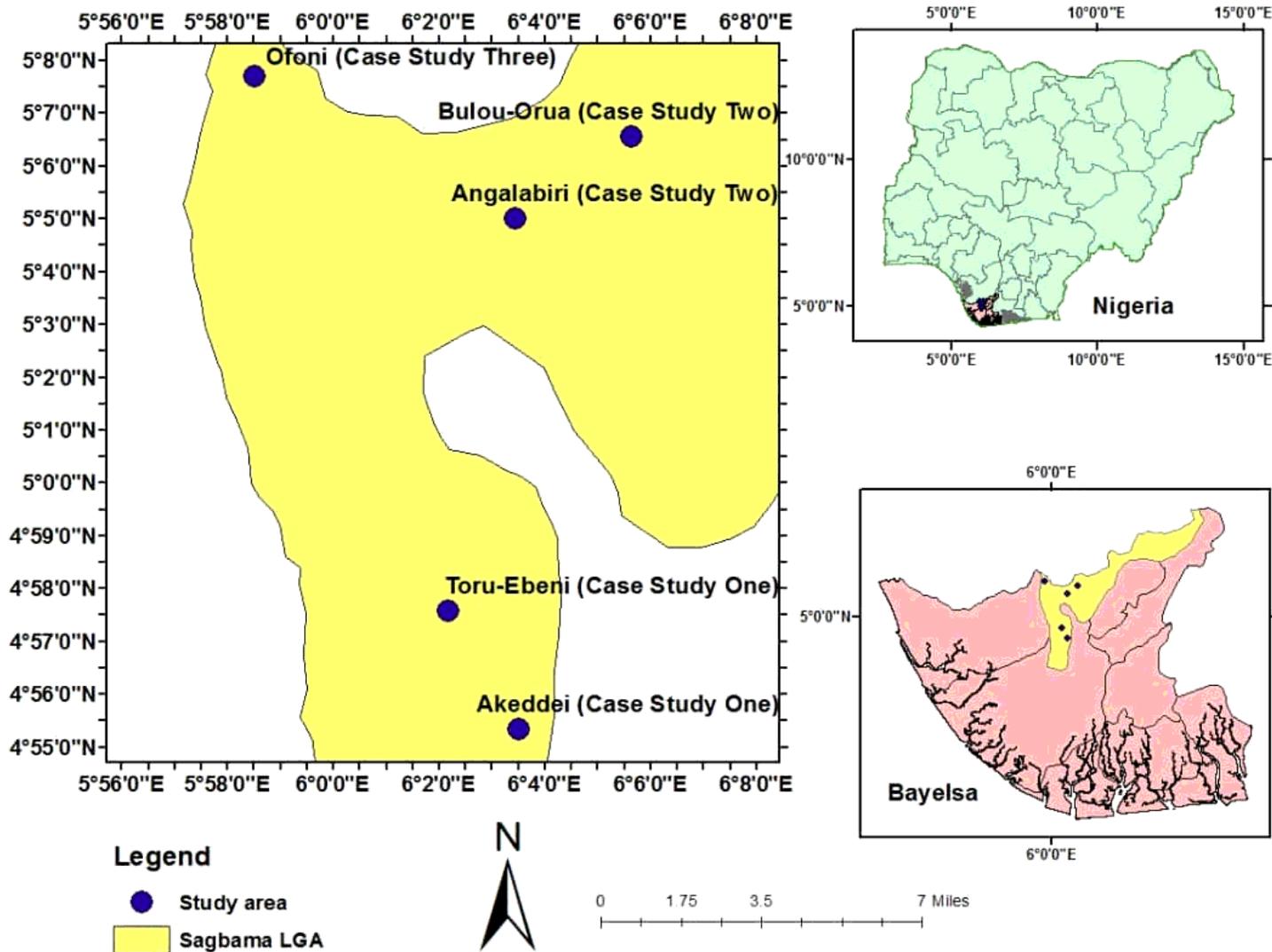


Figure 5

Showing the various study area