Journal of Community Medicine and Primary Health Care. 36 (2): 1 – 18
https://dx.doi.org/10.4314/jcmphc.v36i2.1

JOURNAL OF COMMUNITY MEDICINE AND PRIMARY HEALTH CARE

ORIGINAL ARTICLE

Implementation of Primary Health Care in Lagos Nigeria: An Assessment of Governance and Service Availability

Wright KO,[1,2,3] Odugbemi BA,[1,2] Popoola BF,[2] Oduntan KO,[2] Fagbemi T,[3] Abdurrazaq H,[4] Adepase A,[4] Oniyire O,[4] Lajide D,[4] Ogboye O,[4] Mustafa I.[5]

[1] Department of Community Health and Primary Health Care, Lagos State University College of Medicine,
[2] Department of Community Health and Primary Health Care, Lagos State University Teaching Hospital
[3] Centre for Reproductive Health Research and Innovation (CRHRI), Lagos State University College of Medicine
[4] Lagos State Ministry of Health
[5] Lagos State Primary Health Care Board

Keywords

Primary Health Care,

Governance,

Service provision,

Health Facility Assessment,

Nigeria

ABSTRACT

Background: There is limited understanding of the role and effectiveness of community involvement and governance in enhancing primary healthcare (PHC) services. This study aims to assess governance structures and the availability of PHC services in Lagos State, Nigeria.

Methods: A cross-sectional study was conducted from November 2022 to January 2023, using a multi-stage sampling technique to select five Local Government Areas (LGAs) in Lagos State, Nigeria—Alimosho, Kosofe, Ojo, Epe, and Surulere—and four Primary Healthcare Centres (PHCs) per LGA. Data collection included health facility assessments and key informant interviews. Data analysis was conducted using SPSS and NVivo software. Ethical approval was obtained for the study.

Results: Most (84.2%) of the Primary Health Centres (PHCs) had active development committees that were involved in various activities, such as fixing service prices (100%), discussing administrative issues (42.1%), and managing facility repairs (31.6%). All PHCs offered family planning services, facility-based vaccination, and outreach-based vaccination programs. However, only 52.6% of the facilities offered essential obstetric care and labour and delivery services. Key informants emphasized their role in advocating for primary healthcare utilization and promoting community health initiatives. Challenges included low community participation due to the need for more financial incentives and unmet government promises.

Conclusion: PHC governance in Lagos State shows promising community engagement through active development committees, yet challenges persist. Improvements are needed in service availability, particularly in maternal and child health services and infrastructure. Strengthening governance structures is crucial for sustainable healthcare delivery and equitable health outcomes.

Correspondence to:
Kikelomo Ololade Wright
Lagos State University College of Medicine (LASUCOM), Lagos State,
Email: kikelomo.wright@lasucom.edu.ng

INTRODUCTION

Community participation and governance can achieve an effective community-centred primary healthcare system. By participating in healthcare decisions, communities can gain control over their health, achieve self-reliance, self-awareness, and the ability to self-examine problems and seek appropriate solutions.[1,2] Community participation offers numerous benefits, including improved acceptability, equity, improved access to healthcare services, breaking down cultural barriers to healthcare, and improved communication, sustainability and improved health outcomes.[3,4]

Community participation in the governance of health services is, therefore, a way of engaging stakeholders (patients, public, and partners) in decision-making and related activities in health care.[1,2] Governance involves the complex mechanisms, processes and institutions that enable the different actors to interact at constitutional, collaborative and operational levels to articulate their interests and exercise legal rights and obligations to ensure locally relevant services.[5–7] To achieve a community-centred PHC system, there is a need to structure governance that incorporates the roles and relations of its members. Studies have shown that countries with community-based primary health care have positive outcomes for significant health indicators, health costs, and appropriateness of care.[8,9]

Nigeria has made several attempts to implement the Alma Ata Declaration of 'Health for All' using different strategies from 1978. In 1992, PHC implementation programs started in the Local Government Areas (LGAs), which made Nigeria one of the few countries in the developing world to have systematically decentralised the delivery of basic health services through local government administration.[10–12] However, like many other low- and middle-income countries, the country's primary healthcare systems are still weak and fragmented.[13,14] The fragmented governance structure in Nigeria stems from historical, political, and administrative factors such as colonial legacy, federalism, ethno-cultural diversity, uneven resource allocation, political instability, and corruption. This fragmentation hampers effective governance and service delivery, including in healthcare. Addressing it requires comprehensive reforms focused on decentralisation, transparency, accountability, and inclusivity to serve the diverse needs of the Nigerian population.[15,16]

The country's poor health indices result from conflicting roles and responsibilities in past primary healthcare schemes and structures. To address this issue, the Primary Health Care under One Roof (PHCUOR) policy was created in May 2011.[13,17–19.] The policy is based on the principles of integration, decentralized authority, one management, one plan, and one monitoring and evaluation (M&E) system, and an effective referral system, among others, aims to integrate primary healthcare services under one authority. Additionally, the policy incorporates community involvement and governance.

The Lagos State government has implemented several strategic initiatives to promote effective primary health care delivery and utilization through community participation. These efforts culminated in the establishment of the Primary Health Care Board (PHCB board) by the Lagos State Health Sector Reform Law in 2006. [20,21.] The board is a strategic link between the state and LGA in primary health care service improvement and delivery. It is governed by a board of management consisting of community members, health professionals, and state ministries. It allows for increased community input into service planning, delivery and evaluation. With the formation of the Local Government Health Authority (LGHA) and Ward Health Committee (WHC), the state officially institutionalized community participation in its PHC system using a bottom-top approach.[20–22]

Even though there are numerous studies on the quality of primary health services in Africa and Nigeria, more studies need to be conducted to examine the availability of essential PHC services in the southwest region using relevant health indicators.[23–26] Moreover, there is a gap in understanding the effectiveness and role of community participation and governance in improving PHC services.[2,27] Also, most research on PHC services has been limited to the assessment of single facilities and mainly focused on clients of these facilities.[10] To improve healthcare through the PHC system, there is a need to evaluate primary healthcare service delivery using health outcomes and indicators. We conducted a community-based survey that assessed barriers and facilitators of primary healthcare uptake while examining the effect of PHC governance on service availability and utilization in Lagos State, Nigeria.

METHODOLOGY

Study Area

Lagos is a bustling metropolis and a significant economic hub of Nigeria. It is also one of the most populous states in the country, with a diverse range of cultural backgrounds represented. Healthcare services are available at three levels: primary, secondary, and tertiary care facilities. PHC is the first level of the healthcare system and the closest to the people. PHC in Lagos State has multiple administrative frameworks, including the State Ministry of Health, the Ministry of Local Government, the Local Government Service Commission, and sometimes the Executive Governor's office. Support is received from the National Primary Health Care Development Agency (NPHCDA), but coordination is overseen by the Lagos State Primary Health Care Board (LSPHCB).

Study Design

This was a community-based cross-sectional study that utilized mixed methods of data collection. This paper describes the results of the health facility survey and health worker perspectives on the availability of PHC services in the state.

Sampling Technique

The study was conducted in five LGAs, four urban and one rural, using a multi-stage sampling

method. First, the LGAs were stratified into urban and rural, and then four and one LGA were selected out of 16 urban and four rural LGAs, respectively. In each LGA, two comprehensive and two basic PHCs were selected by simple random sampling by balloting from the list of PHCs in the LGA.

Study Procedure

Data was collected by trained research assistants using the following study instruments: a health facility assessment questionnaire/checklist and a key informant interview (KII) guide.

Health facility assessment: A facility assessment was conducted in selected PHCs to assess essential services available at the PHCs. Maternal, child health, community outreach and referral services were used as proxy measures. The survey also included interviews with the officers-in-charge of the PHCs or their representatives and observations made of service delivery.

Key informant interviews (KIIs): KIIs were conducted among the leadership of the PHC system in the state to get their perspectives on the effectiveness of the governance structures in terms of functions, level of engagement with government and community sense of ownership. Participants for the KII were purposively selected based on their roles in the PHCs or the community. These participants were the Medical Officer of Health, a representative of the LGHA, a representative of the WDC, a women's leader and a youth leader. Thus, five KIIs were conducted in each LGA.

Data Management

The study data were collected and managed through the LASUCOM REDCap data management software. Further, analysis was done on the facility survey questionnaire and facility observation checklist quantitative data using SPSS version 27. Univariate and bivariate analyses were conducted using means, standard deviation, proportions and the chi-test to assess factors associated with the availability and utilization of services at a level of significance of $p<0.05$.

The KIIs were transcribed verbatim, and the transcripts were read several times to get an overall picture of the content. Related content was grouped into themes and analysed using NVivo qualitative data analysis software. The qualitative findings complement the facility survey (questionnaire and observation) data.

Study Duration

Data collection took place between November 2022 and January 2023.

Ethical considerations

Ethical approval (LREC/06/10/1867) was obtained from the Lagos State University Teaching Hospital's Health Research Ethics Committee (HREC). All research participants gave informed written and verbal consent, and Confidentiality was maintained throughout the study.

Table 1: Background Information of selected PHCs

PHCs in Local Government Areas (LGAs)	Frequency (%)
Alimosho	4 (21.05)
Kosofe	4 (21.05)
Ojo	4 (21.05)
Surulere	4 (21.05)
Epe	3 (15.79)
Designations of Head of Facilities	
Nurse/Midwife	12 (66.67)
Nurse	4 (22.22)
Senior Community Health Extension Workers	1(5.56)
Medical Records Officer	1 (5.56)
Health Centre Type	
Basic Health Centre	12 (63.16)
Comprehensive Health Centre	6 (31.58)
Health Post	1 (5.26)
PHC Operating Days	
Everyday	10 (52.63)
Weekdays only	9 (47.37)
PHC Operating Hours	
Twenty-four hours (24)	10 (52.63)
Five to Eight hours daily	9 (47.37)

RESULTS

Health Facility Assessment

The study assessed the healthcare facilities in Lagos State, Nigeria, comprising twelve basic health centres, six comprehensive health centres, and one health clinic. The results indicated that the heads of facilities were predominantly Nurses/midwives (88.89%). (Table 1) Ten (52.6%) facilities provided services on every day of the week, while 9 (47.37%) provided services only on weekdays. Similarly, more than half of the facilities (52.63%) provided 24-hour services, while the remaining (47.4%) provided daytime services only.

Family planning services were available in all facilities, while 94.7% of the facilities offered antenatal and postnatal care. However, delivery and basic emergency obstetric care were available in only 52.6% of the facilities. (Table 2) Child health services were widely available in the facilities assessed. Specifically, under-5 clinics conducted by IMCI-trained health staff were available in 89.5% of the facilities. All the facilities assessed also conducted immunization services, providing vaccinations both at the health centre and through outreaches. Child nutritional services, including food demonstrations, were available in 94.7% of the assessed facilities. (Table 2)

All the facilities that were assessed provide outreach services. However, only about two-thirds (68.5%) of the health centres conduct community-based outreach for immunization. Additionally, other health-related outreach activities include tuberculosis screening (73.7%),

mental health (21.1%), and dental services (5.1%). Furthermore, 26.3% of health centres in the LGAs conduct outreach primarily every week, while a small percentage (5.3%) organize it twice or more per week.

Most (78.9%) health centres have referral facilities within a 10km radius. However, only about one-third (36.8%) have transportation services for referrals. Regarding reasons for referral, most health facilities refer patients to general hospitals, primarily for specialized care and complicated deliveries. However, the health centres mainly handle laboratory services and uncomplicated deliveries.

Most PHCs (84.2%) reported active involvement of their Development Committees in governance activities. The committees consisted of 186 members, comprising 42.4% females and 57.6% males, as depicted in Fig 1.

All 19 PHCs implemented fixed user charges, excluding drugs. The committees routinely discussed administrative (42.1%) and medical protocol issues (31.6%), while repairs on facility structures and equipment (31.6%) were also addressed. Moreover, committees engaged in activities such as requesting more vaccines and providing drugs or fuel, albeit to a lesser extent. There was no significant difference between type of PHC and frequency of meetings or committee visits and gender composition of development committees.

Key Informant Interviews

Understanding of Role in PHC Governance

The respondents showed an understanding of the services of the PHCs and their roles in serving as a link between the PHCs and their communities.

"Our functions are between the health facility here and the community. So, me especially, I am involved in it and the planning of it." – WDC rep.

"There are times they will want to draw a map of catchment areas and I will tell them what the area looks like." - WDC rep.

"You know they know me very well in this community and so I am one of those in the community who make sure that the health centre keeps saving lives for us and even people in the community try all their best to always protect and ensure cleanliness in the PHC. So, I and other people try to make sure our pregnant women use this health centre and we encourage and advise them on the importance of using the health centre. Some women even go to churches and mosques to advise women to use the health centre." – Women's leader

"*The utilization of Ward Health Committees and regular community meetings plays a pivotal role in involving the community in improving PHCs and enhancing healthcare delivery*." -LGHA rep.

Table 2: Availability of Maternal and Child Health Services

PHC service	Frequency (n=19)	Percentage (%)
Maternal health service		
Family Planning Services	19	100
Post-Natal Services	18	94.7
Antenatal Care Services	18	94.7
Essential Obstetric Care	10	52.6
Labour and Delivery Care	10	52.6
Gender-Based Violence Counselling	1	0.05
Child Health Service		
Vaccination in the Facility	19	100
Immunisation Outreach Services	19	100
Integrated Management of Childhood Illnesses (IMCI)	19	100
Immunization Services	19	94.7
Child Nutritional Services	18	94.7
Under-5 clinics with trained IMCI	17	89.5

Community involvement and ownership

Community involvement in organizing healthcare varies across different health facilities. Some committee members actively facilitated community participation and engagement with the government to address health challenges. However, the level of community participation and sense of ownership varied and was influenced by factors like unfulfilled promises and the absence of financial incentives from the government.

"The degree of community participation in healthcare delivery varies across different facilities." - LGHA rep.

"They come together to try to know what they need. We also know the age of the people we see…or is it people with malaria that we see more? Is it pneumonia, is it tuberculosis? So, it is what people come up with…" – MOH.

"The participation of our youths in whatever we do has made an NGO come to our community..." – Youth leader.

"You know the youths are not so keen on community participation, so it is only a few of them that are helping in the health centre because the majority of them will need money to be able to participate fully in the development of the health centre" – Women's leader.

Table 3: Outreach Services

Outreach Services	Frequency	Percentage (%)
Provision of any Community-based Outreach	19	100
Tuberculosis Screening Outreach	14	73.7
Immunization Outreach	13	68.5
Mental Health Outreach	4	21.1
Dental Services Outreach	1	5.3

"We have tried…sometimes, we will mobilize our people." - WDC rep

"Our king donated several fans to the health centre..." - Youth leader

"There was a time when members of the ward health committee collaborated with the members of the community to renovate the pharmacy for drugs dispensing in the health facility." – Women's leader

Engagement with government

The committees engaged with the government in carrying out their activities. For example, some are involved in the local implementation of vaccination programmes. Through these committees, the communities also request their perceived needs from the government.

"So whenever the Ministry of Health provides, whether it's a vaccine they are bringing for us or something else, we go back home and then hold meetings with all stakeholders." - WDC rep.

"We write all these issues down and we present them to the top officials" - Youth leader.

Challenges and Recommendation

While youth leaders are actively engaged and demonstrate a strong sense of ownership, there were challenges related to the general community's participation levels and the government's responsiveness. The provision of financial incentives might improve community participation. Other solutions proffered include ensuring the availability of potable water to the communities and equipping the health facilities.

"The challenge is that when you call for a meeting, some people will not come..."

"They should provide good quality of water for our people and make our health centre more equipped..." – Youth leader.

"The challenges are that people don't want to do something voluntarily and they always want to be compensated for whatever they are doing for the community. You know if we say we want to actively participate in community governance and there is no support from anywhere, we will surely not want to continue but if there is support from above, we will be very happy to do it. Three days ago, the red-cross came to our community and the people were very happy to see them because they always come to give them money. So, the youths in the community were motivated and you know there is no job in this community." – Women's leader.

"Providing monetary incentives to motivate community participation."- Youth leader

"So, they are doing all this hoping that things will be better. So, if they can be remunerated or given incentives, they only want to be recognized." – MOH.

Table 4: Governance Structures and Actions Taken by the PHC Development Committee in the Past Year

Availability of Development Committees	**Frequency (n=19)**	**Percentage (%)**
PHCs with the Development Committee	19	100
PHCs with active Development Committees	16	84.2
Activity		
Fixed User Charges (other than drugs).	19	100
Discuss Administrative Issues	8	42.1
Carried out Repairs on the Facility Structure	6	31.6
Requested More Vaccines	4	21.1
Resolved Administrative Issues	4	21.1
Made Disciplinary Recommendations on Staff	3	15.8
Provided Drugs	3	15.8
Provided Fuel or Other Current Resources	3	15.8
Repaired Equipment	3	15.8
Fixed Price of Drugs	1	0.05

DISCUSSION

This paper describes the governance structures and service provision of Primary Healthcare Centres (PHCs) in Lagos State, Nigeria. The findings presented are part of a larger study comparing the effect of PHC governance structures on service implementation across different periods. The study highlights significant aspects of community engagement, governance structures, health service availability, and service linkages in Lagos State's PHC system.

A majority (84.2%) of PHCs reported active involvement of their Development Committees in governance activities, signifying a robust participatory approach to healthcare management.[28] These committees comprised 186 members, with a relatively balanced gender distribution, reflecting inclusivity and a relatively balanced representation of stakeholders in healthcare decision-making processes. This level of engagement is crucial for the effective functioning of PHCs, as it ensures that community needs and perspectives are considered in healthcare planning and implementation.

There are various actions that PHC committees have undertaken over the past year, such as the universal implementation of fixed user charges, excluding drugs, across all 19 PHCs, highlighting a common strategy to generate revenue and sustain healthcare operations.[29] The committees demonstrated proactive engagement by routinely discussing administrative and medical protocol issues, underscoring their role in addressing operational challenges and promoting evidence-based healthcare practices.[30] Additionally, efforts towards infrastructure maintenance were evident, with repairs on facility structures and equipment undertaken in 31.6% of PHCs, indicative of a commitment to ensuring the quality and functionality of healthcare facilities. PHC committees were also involved in advocating for resource allocation, as evidenced by activities such as requesting more vaccines and providing essential supplies like drugs or fuel, albeit to a lesser extent. These actions reflect a concerted effort to address resource constraints and improve service delivery, aligning with broader objectives of enhancing access to quality healthcare at the primary level.

The World Health Organization has stressed the importance of continuous education, training, and professional development initiatives to strengthen workforce capacity and ensure quality care.[31] The prominence of Nurses/midwives as heads of healthcare facilities aligns with the staffing dynamics prevalent in the African and Nigerian healthcare landscape, where nurses occupy pivotal roles in frontline service delivery.[32–34] Therefore, for comprehensive and patient-centric care to be ensured, fostering interdisciplinary collaboration and diversification of the healthcare workforce are essential strategies that must be implemented.[32]

The roles and perceptions of community members in PHC governance were further illuminated by key informant interviews. For instance, WDC representatives clearly

understood their role as intermediaries between health facilities and the community. For example, one representative stated, "Our functions are between the health facility here and the community. So, me especially, I am involved in it and the planning of it." This highlights these committees' active role in healthcare planning and service delivery.

These findings are consistent with a study conducted in South Africa, which found that community health committees play a critical role in enhancing healthcare delivery through active participation in health facility management and decision-making processes.[35] Similarly, a study in Kenya reported that community health volunteers serve as essential links between the community and health facilities, facilitating improved health outcomes through increased community engagement.[36]

The study also examined the availability of health services and the extent of community involvement in healthcare. The findings indicate that more than half of the healthcare facilities provide 24-hour services, which shows an effort to enhance accessibility and responsiveness to community healthcare needs. This trend is consistent with the observations reported in PHCs in other parts of southern Nigeria.[37] However, staffing shortages, infrastructural deficiencies, and financial constraints impede sustained round-the-clock service delivery.[38] Innovative healthcare delivery models, such as telemedicine platforms and community health worker programs, offer potential solutions to these challenges by addressing geographical disparities in healthcare access and bolstering service accessibility.[39]

Table 5: Association between type of PHC and committee composition and functioning

	Type of PHC		
	Basic	**Comprehensive**	**Fisher's exact p-value**
Frequency of Meetings			
Every month	9 (75.0)	3 (25.0)	0.61
More than a month apart	4 (57.1)	3 (42.9)	
Frequency of Committee Visits to PHC			
Every month	8 (61.5)	5 (39.5)	0.60
More than a month apart	5 (83.3)	1 (16.7)	
Gender Composition of Committee			
<50% female	6 (54.5)	5 (45.5)	0.63
>50% female	6 (75.0)	2 (25.0)	

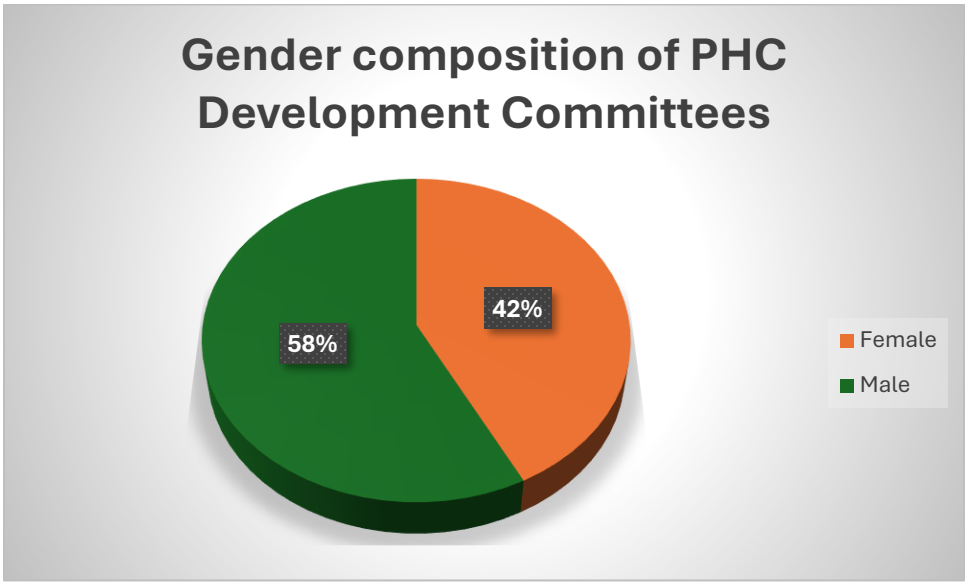

Figure 1: Gender Composition of Committees

Despite the availability of antenatal and postnatal services in 94.7% of the facilities, access to essential maternal healthcare services remains a critical challenge. Only 52.6% of facilities provided delivery care and basic emergency obstetric services, highlighting significant gaps in service provision. This issue is consistent with findings from previous studies in Nigeria and other African countries.[40–42] For instance, similar challenges were identified in Uganda, where the high availability of antenatal services did not translate into sufficient delivery and emergency obstetric care, posing a significant barrier to reducing maternal mortality.[41]

In Ethiopia, research has similarly underscored the necessity for improved infrastructure and enhanced training for healthcare providers to bridge these gaps in maternal healthcare services.[42] The shortage of delivery care and emergency obstetric services is closely associated with higher rates of maternal mortality and unsafe childbirth practices.[43–45] To address these critical gaps, targeted interventions are needed, focusing on infrastructure development, equipping facilities with essential obstetric tools, and improving healthcare providers' skills in managing obstetric complications. These measures are vital to ensure safer childbirth practices and reduce maternal mortality rates.[45–47] Regarding child health services, the high coverage of under-5 clinics conducted by Integrated Management of Childhood Illness (IMCI)-trained health staff is a positive step towards addressing child health needs comprehensively. Additionally, universal immunization and child nutritional services underscore the commitment to preventive

healthcare measures and holistic child development. However, the variability in the frequency and scope of outreach services, particularly community-based immunisation outreach, suggests the need for standardised protocols and expanded outreach efforts to reach underserved populations and address disparities in access to essential healthcare services.[48]

The study also highlights the importance of effective referral systems in ensuring timely access to specialized care. While most PHCs have facilities for referral within a 10km radius, the availability of transport services remains suboptimal. This points to significant challenges in ensuring timely access to specialized care for patients requiring referral and highlights the need for improved transportation infrastructure and coordination mechanisms to facilitate seamless patient transfers to referral centres.[49]

General hospitals are the primary referral destination for specialized care and complicated deliveries, highlighting their role in managing complex medical conditions and obstetric emergencies. However, health centres play a significant role in handling laboratory services and uncomplicated deliveries, underscoring their importance as primary points of care within the healthcare system.[50] Comparatively, inadequate referral systems and transportation barriers in rural India similarly impede access to specialized healthcare, underscoring the need for improved infrastructure and referral coordination.[51] In contrast, Rwanda's integrated health system has been praised for its effective referral networks and transportation support, significantly improving healthcare access and outcomes.[52]

The committees engage with the government in various capacities, including local implementation of vaccination programs and advocating for resources. Engagement with government entities is crucial for addressing resource constraints and improving service delivery. For example, one WDC representative mentioned, "So whenever the Ministry of Health provides, either it’s a vaccine they are bringing for us then we go back home and then hold meetings with all stakeholders."

However, community participation and government responsiveness challenges still need to be addressed. The lack of financial incentives is a significant barrier to community involvement. This underscores the need for monetary incentives to enhance participation and commitment. Additionally, ensuring the availability of essential resources such as potable water and well-equipped health facilities is critical for improving the effectiveness of PHCs. These issues align with findings from a study in Ghana, where community health volunteers reported similar challenges related to a need for more incentives and resources, which hinder their ability to fully engage in health promotion activities. [53,54] Conversely, a well-established community health volunteer program supported by adequate incentives and government resources has successfully increased community health engagement and improved health outcomes in Thailand.[55,56]

CONCLUSION

The study comprehensively assesses primary healthcare services delivery and governance structures in Lagos State, Nigeria. It underscores the critical role nurses and midwives play in providing primary healthcare services, stressing the need for interdisciplinary collaboration and workforce diversification. Despite commendable efforts to enhance service availability and community participation, significant gaps remain, particularly in maternal and child health services and infrastructure. Moving forward, sustained efforts to strengthen governance structures, address systemic barriers, and promote equitable access to quality healthcare services are crucial. These actions are essential to realizing the vision of the Alma Ata Declaration and achieving health for all in Nigeria.

By fostering a more inclusive and participatory healthcare governance model, Lagos State can improve health outcomes and ensure that primary healthcare services are responsive to the needs of its diverse population.

Acknowledgements: We thankfully acknowledge the hard work of the field workers.

Funding: The Bill and Melinda Gates Foundation funded this work through a grant to the Lagos State Ministry of Health.

Conflicts of interest: None to declare

REFERENCES

1. National Collaborating Centre for Determinants of Health. A Guide to Community Engagement Frameworks for Action on the Social Determinants of Health and Health Equity. Antigonish, NS: National Collaborating Centre for Determinants of Health, St. Francis Xavier University; 2013.
2. Rifkin SB. Paradigms lost: Toward a New Understanding of Community Participation In Health Programmes. Acta Trop [Internet]. 1996;61(2):79–92. Available from: http://dx.doi.org/10.1016/0001-706x(95)00105-n
3. Organization WH. Twenty Steps for Developing Healthy Cities Project. 1997 [Cited 2024 Mar 15]; Available from: https://apps.who.int/iris/bitstream/handle/10665/107961/E56270.pdf
4. O'Mara-Eves A, Brunton G, McDaid D, Oliver S, Kavanagh J, Jamal F, et al. Community Engagement to Reduce Inequalities in Health: A Systematic Review, Meta-Analysis and Economic Analysis. Public Health Research [Internet]. 2013;1(4):1–526. Available from: http://dx.doi.org/10.3310/phr01040
5. Pyone T, Smith H, van den Broek N. Frameworks to Assess Health Systems Governance: A Systematic Review. Health Policy Plan [Internet]. 2017 Jun 1;32(5):710–22. Available from: https://pubmed.ncbi.nlm.nih.gov/28334991
6. Who. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action. Production [Internet]. 2007 [cited 2024 Jul 14];1–56. Available from:

http://www.who.int/healthsystems/strategy/everybodys_business.pdf

7. Siddiqi S, Masud TI, Nishtar S, Peters DH, Sabri B, Bile KM, et al. Framework for Assessing Governance of the Health System in Developing Countries: Gateway to Good Governance. Health Policy (New York) [Internet]. 2009;90(1):13–25. Available from: http://dx.doi.org/10.1016/j.healthpol.2008.08.005
8. Forrest CB, Starfield B. The Effect of First-Contact Care with Primary Care Clinicians on Ambulatory Health Care Expenditures. Journal of Family Practice. 1996;43(1):40–8.
9. Macinko J, Starfield B. The Utility of Social Capital in Research on Health Determinants. Milbank Q [Internet]. 2001;79(3):387–IV. Available from: https://pubmed.ncbi.nlm.nih.gov/11565162
10. Obionu CN. Primary health care for developing countries. Publishers Institute for Development Studies, University of Nigerian Enugu Campus, Enugu. 2007;183–284.
11. Nigeria Federal Ministry of Health. National Primary Health Care Development Agency (Establishment) Act, 1992. Federal Republic of Nigeria Official Gazette. 1992;79(79): B7–27.
12. Oladapo OT, Osiberu MO. Do Sociodemographic Characteristics of Pregnant Women Determine their Perception of Antenatal Care Quality? Matern Child Health J [Internet]. 2009 Jul 16 [cited 2024 Mar 24];13(4):505–11. Available from: https://link.springer.com/article/10.1007/s10995-008-0389-2
13. National Primary Health Care Development Agency (NPHCDA). Integrating Primary Health Care Governance (PHC Under One Roof): Implementation Manual. NPHCDA, editor. Abuja; 2013.
14. Saif-Ur-Rahman KM, Mamun R, Nowrin I, Hossain S, Islam K, Rumman T, et al. Primary Healthcare Policy and Governance in Low-Income and Middle-Income Countries: An Evidence Gap Map. BMJ Glob Health [Internet]. 2019 Aug 16;4(Suppl 8): e001453–e001453. Available from: https://pubmed.ncbi.nlm.nih.gov/31478021
15. Efe I. Health Care Problem and Management in Nigeria. Journal of Geography and Regional Planning. 2013; 6: 244–54.
16. Adeloye D, David RA, Olaogun AA, Auta A, Adesokan A, Gadanya M, et al. Health Workforce and Governance: The Crisis in Nigeria. Hum Resour Health [Internet]. 2017 May 12 [cited 2024 Mar 24];15(1). Available from: https://pubmed.ncbi.nlm.nih.gov/28494782/
17. Adejoh FO, Ali MM, Ismail MT. Performance Assessment of Primary Healthcare Centres in Lagos State, Nigeria, Using Stackelberg Game Approach. In: AIP Conference Proceedings. AIP Publishing; 2024.

18. Nigeria Federal Ministry of Health. National Health Act 2014. Abuja: Federal Ministry of Health; 2014.
19. Primary Health Care Under One Roof (PHCUOR) Minimum Standards Handbook. Abuja: National Primary Health Care Development Agency; 2014.
20. Abosede OA, Sholeye OF. Strengthening the Foundation for Sustainable Primary Health Care Services in Nigeria. Prim Health Care. 2014;4(3).
21. Lagos State Government. Lagos State Health Sector Reform Law No. 4 of 2006. Lagos: Lagos State Government; 2006.
22. Odutolu O, Ihebuzor N, Tilley-Gyado R, Martufi V, Ajuluchukwu M, Olubajo O, et al. Putting Institutions at the Centre of Primary Health Care Reforms: Experience from Implementation in Three States in Nigeria. Health Syst Reform. 2016;2(4):290–301.
23. Ejughemre UJ. Accelerated reforms in healthcare financing: the need to scale up private sector participation in Nigeria. Int J Health Policy Manag. 2014;2(1):13–9.
24. Oyekale AS. Assessment of Primary Health Care Facilities' Service Readiness in Nigeria. BMC Health Serv Res [Internet]. 2017;17(1). Available from: http://dx.doi.org/10.1186/s12913-017-2112-8
25. Otovwe A, Elizabeth S. Utilization of Primary Health Care Services in Jaba Local Government Area of Kaduna State Nigeria. Ethiop J Health Sci [Internet]. 2017 Jul 1 [cited 2024 Mar 24];27(4):339. Available from: /pmc/articles/PMC5615023/
26. Oku A, Oyo-Ita A, Glenton C, Fretheim A, Eteng G, Ames H, et al. Factors Affecting the Implementation of Childhood Vaccination Communication Strategies in Nigeria: A Qualitative Study. BMC Public Health. 2017; 17: 1–12.
27. Kickbusch I, Gleicher DE. Governance for Health in the 21st Century. 2012.
28. Adeyemo DO. Local Government and Health Care Delivery in Nigeria: A Case Study. Journal of Human Ecology. 2005 Oct;18(2):149–60.
29. Oleribe OO, Momoh J, Uzochukwu BS, Mbofana F, Adebiyi A, Barbera T, et al. Identifying Key Challenges Facing Healthcare Systems in Africa and Potential Solutions. Int J Gen Med [Internet]. 2019; 12: 395–403. Available from: https://pubmed.ncbi.nlm.nih.gov/31819592
30. Folajimi-Senjobi O, Akinyemi O. Our Chairman Is Very Efficient: Community Participation in the Delivery of Primary Health Care in Ibadan, Southwest Nigeria. Pan African Medical Journal. 2017 Aug 7;27.
31. World Health Organization. Report of the Seventh Global Forum for Government Chief Nurses and Midwives: The Future of Nursing and Midwifery Workforce in the Context of The Sustainable Development Goals and Universal Health Coverage. Geneva; 2017.
32. Nawagi F, Kneafsey R, Modber M, Mukeshimana M, Ndungu C, Bayliss-Pratt L.

An Overview of Nursing and Midwifery Leadership, Governance Structures, and Instruments in Africa. BMC Nurs. 2023;22(1):168.

33. Badejo O, Sagay H, Abimbola S, Van Belle S. Confronting Power in Low Places: Historical Analysis of Medical Dominance and Role-Boundary Negotiation Between Health Professions in Nigeria. BMJ Glob Health. 2020;5(9): e003349.
34. Ezeonwu C. Nursing education and workforce development: Implications for Maternal Health in Anambra State, Nigeria. International Journal of Nursing and Midwifery [Internet]. 2013;5(3):35–45. Available from: http://dx.doi.org/10.5897/ijnm12.014
35. Schneider H, Hlophe H, van Rensburg D. Community Health Workers and the Response to HIV/AIDS In South Africa: Tensions and Prospects. Health Policy Plan [Internet]. 2008;23(3):179–87. Available from: http://dx.doi.org/10.1093/heapol/czn006
36. Mijwanga SO, Cheptum JJ. Role Of Community Health Volunteers in Education and Promotion of Birth Preparedness to Support Maternal Healthcare Services in the Dadaab Refugee Camp, Kenya. Afr J Midwifery Womens Health [Internet]. 2022;16(2):1–12. Available from: http://dx.doi.org/10.12968/ajmw.2021.0010
37. Ajisegiri WS, Abimbola S, Tesema AG, Odusanya OO, Peiris D, Joshi R. The Organisation of Primary Health Care Service Delivery for Non-Communicable Diseases in Nigeria: A Case-Study Analysis. PLOS Global Public Health. 2022;2(7): e0000566.
38. Alsoufi A, Alsuyihili A, Msherghi A, Elhadi A, Atiyah H, Ashini A, et al. Impact of the COVID-19 Pandemic on Medical Education: Medical Students' Knowledge, Attitudes, and Practices Regarding Electronic Learning. PLoS One [Internet]. 2020 Nov 1 [cited 2024 Mar 26];15(11). Available from: https://pubmed.ncbi.nlm.nih.gov/33237962/
39. World Bank. Health Service Delivery Indicators: Utilization. 2019 [cited 2024 Mar 18]; Available from: https://datacatalog.worldbank.org/dataset/health-service-delivery-indicators-utilization
40. Ozumba BC, Onyeneho NG, Chalupowski M, Subramanian S V. Inequities in Access to Maternal Health Care in Enugu State: Implications for Universal Health Coverage to Meet Vision 2030 in Nigeria. Int Q Community Health Educ. 2019;39(3):163–73.
41. Waiswa P, Kallander K, Peterson S, Tomson G, Pariyo GW. Using the Three Delays Model to Understand Why Newborn Babies Die in Eastern Uganda. Tropical Medicine & International Health [Internet]. 2010;15(8):964–72. Available from: http://dx.doi.org/10.1111/j.1365-3156.2010.02557.x
42. Austin A, Gulema H, Belizan M, Colaci DS, Kendall T, Tebeka M, et al. Barriers to

providing quality emergency obstetric care in Addis Ababa, Ethiopia: Healthcare Providers' Perspectives on Training, Referrals and Supervision, a Mixed-Methods Study. BMC Pregnancy Childbirth [Internet]. 2015 Mar 29 [cited 2024 Jun 21];15(1):1–10. Available from: https://link.springer.com/articles/10.1186/s12884-015-0493-4

43. Ope BW. Reducing Maternal Mortality in Nigeria: Addressing Maternal Health Services' Perception and Experience. J Glob Health Rep. 2020;4: e2020028.
44. Sidze EM, Mutua MK, Donfouet HP. Towards Achieving Equity in Utilisation of Maternal Health Services in Selected Sub-Saharan African Countries: Progress and Remaining Challenges in Priority Countries. Women and Sustainable Human Development: Empowering Women in Africa. 2020;111–24.
45. World Health Organization. Maternal health. 2019 [cited 2024 Mar 18]; Available from: https://www.who.int/health-topics/maternal-health#tab=tab_1
46. Jolivet RR, Gausman J, Langer A. Recommendations for Refining Key Maternal Health Policy and Finance Indicators to Strengthen a Framework for Monitoring the Strategies toward Ending Preventable Maternal Mortality (EPMM). J Glob Health [Internet]. 2021 Oct 23; 11: 2004. Available from: https://pubmed.ncbi.nlm.nih.gov/34737853
47. Kruk ME, Porignon D, Rockers PC, Van Lerberghe W. The Contribution of Primary Care to Health and Health Systems in Low- And Middle-Income Countries: A Critical Review of Major Primary Care Initiatives. Soc Sci Med. 2010 Mar;70(6):904–11.
48. Organization WH. The Global Vaccine Action Plan 2011-2020: Review and Lessons Learned: Strategic Advisory Group of Experts on Immunization. 2019.
49. Busayo S. Assessment of the Emergency Preparedness, Responses and Attitudes of Primary Health Care Workers Towards COVID-19 Pandemic in Alimosho Local Government Area, Lagos State, Nigeria. Academia Letters [Internet]. 2021; Available from: http://dx.doi.org/10.20935/al4062
50. Allen LN, Pettigrew LM, Exley J, Nugent R, Balabanova D, Villar-Uribe M, et al. The Role of Primary Health Care, Primary Care and Hospitals in Advancing Universal Health Coverage. BMJ Glob Health [Internet]. 2023 Dec 7 [cited 2024 Mar 26];8(12):14442. Available from: /pmc/articles/PMC10711840/
51. Prinja S, Jeet G, Kaur M, Aggarwal AK, Manchanda N, Kumar R. Impact of Referral Transport System on Institutional Deliveries in Haryana, India. Indian Journal of Medical Research. 2014;139(6):883–91.
52. Condo J, Mugeni C, Naughton B, Hall K, Tuazon MA, Omwega A, et al. Rwanda's Evolving Community Health Worker System: A Qualitative Assessment of Client

and Provider Perspectives. Hum Resour Health [Internet]. 2014;12(1). Available from: http://dx.doi.org/10.1186/1478-4491-12-71

53. Kweku M, Manu E, Amu H, Aku FY, Adjuik M, Tarkang EE, et al. Volunteer Responsibilities, Motivations and Challenges in Implementation of the Community-Based Health Planning and Services (CHPS) Initiative in Ghana: Qualitative Evidence from Two Systems Learning Districts of the CHPS+ Project. BMC Health Serv Res [Internet]. 2020 May 29 [cited 2024 Jun 21];20(1):1–13. Available from: https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-020-05348-6
54. Ndu M, Andoniou E, McNally S, Olea Popelka F, Tippett M, Nouvet E. The Experiences and Challenges of Community Health Volunteers as Agents for Behaviour Change Programming in Africa: A Scoping Review. Glob Health Action [Internet]. 2022 [cited 2024 Jun 21];15(1). Available from: /pmc/articles/PMC9629118/
55. Krassanairawiwong T, Suvannit C, Pongpirul K, Tungsanga K. Roles of Subdistrict Health Office Personnel and Village Health Volunteers in Thailand During the COVID-19 Pandemic. BMJ Case Reports CP [Internet]. 2021 Sep 1 [cited 2024 Jun 22];14(9): e244765. Available from: https://casereports.bmj.com/content/14/9/e244765
56. Suvarnathong P, Chai-Aroon T, Jiawiwatkul U, Intoo-Marn P. Systems and Mechanisms to Develop Health Volunteers for The Health of Immigrant Workforce in Ubon Ratchathani, Thailand. Int J Migr Health Soc Care. 2021;17(3):372–8.