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Primary health care in Nigeria: best practices and quality of care in Nigeria

Phyllis O Ogah¹, Nkolika Uguru^{2*}, Chinyere Okeke², Nurudeen Mohammed¹, Oritseweyimi Ogbe¹, Wende G Ashiver¹ and Muyiwa Aina¹

Abstract

Introduction The significance of Primary Healthcare Centers (PHCCs) in fostering health equity and enhancing health outcomes cannot be overstated, especially in low and middle-income countries. This paper's primary area of interest is to create evidence and innovation for PHCs, with a particular emphasis on underserved groups. Thus, the study aimed to investigate the state of primary health care in Nigeria, with a particular emphasis on best practices, challenges to best practices, and quality of care.

Methodology A cross-sectional quantitative study was conducted to collect secondary data from 29 primary healthcare facilities. The data was collected using staff and facility activity indicators over a year (2022). Descriptive statistics and chi-square tests were used to analyze the collected data.

Result Our study data showed that all of the PHCCs have service rosters that can be utilized for follow-up with patients. About 85 (84.1%) respondents have reported that deliveries were taken by the reporting midwife, and 55 (54.5%) respondents indicated that their facilities provided on-the-job training to their staff. This is considered as the best practice in the facility. However, the majority of the PHCCs (71.3%) lacked assessment teams, which was found to have a negative impact on the quality of healthcare provided at these facilities ($p < 0.05$).

Conclusion Our study underscores the pressing need for primary healthcare services in Nigeria. Government authorities and healthcare providers must take action to overcome the challenges of limited capacity, service delivery, and quality of care. By adopting effective strategies and ensuring access to primary healthcare, citizens' health outcomes can be greatly enhanced. Thus, it is essential to revamp and optimize healthcare facilities to establish an efficient healthcare system that caters to the needs of all citizens.

Keywords Best practices, Quality of care, PHC, Indicator activities, Benue, Nigeria

*Correspondence:

Nkolika Uguru
nkolika.uguru@unn.edu.ng

¹National Primary Health Care Development Agency, Abuja, Nigeria

²College of Medicine, University of Nigeria Enugu Campus, Enugu, Nigeria



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Introduction

The concept of universal health coverage (UHC) in the post-2015 development agenda emphasizes the importance of equitable distribution and efficiency in health-care service delivery by providing financial and technical support to healthcare institutions at all levels of administration [1, 2]. This is closely tied to achieving the various health-related targets outlined in the Sustainable Development Goals (SDGs) [3, 4]. Despite commitments from major health policy players, such as the World Health Organization (WHO) and the World Bank, to allocate resources towards these objectives, several obstacles to service readiness need to be addressed at the national level for health planning [5], though competing political ideologies often worsen these obstacles [6, 7].

Primary healthcare (PHC) is a vital component of a healthcare delivery system and plays a crucial role in building a robust healthcare system that promotes positive health outcomes and equity [8, 9]. PHC includes three interrelated and synergistic components: (i) comprehensive, integrated health services that incorporate primary care and public health goods and functions as central elements; (ii) multi-sectoral policies and actions to address the upstream and broader determinants of health; and (iii) engaging and empowering individuals, families, and communities to increase social participation and enhance self-care and self-reliance in health [10].

The significance of PHC in fostering health equity and enhancing health outcomes cannot be overstated, especially in low and middle-income countries. By delivering essential healthcare services and addressing the broader social determinants of health, PHC can aid in reducing health disparities and enhancing overall population health [10]. Despite its potential benefits, PHC remains underfunded and undervalued in many countries, Nigeria inclusive, and efforts are required to strengthen PHCCs and ensure that it is adequately resourced and supported [10, 11]. This involves investing in healthcare infrastructure, training and retaining healthcare workers, and encouraging community engagement and participation in healthcare decision-making [10].

Providing high-quality PHC depends on well-equipped, adequately staffed, and properly resourced health facilities with the necessary infrastructure, essential medicines, and consumables. Nigeria's Ward Minimum Health Care Package illustrates a minimum healthcare package defined by several nations [11]. As determined by the National Primary Health Care Development Agency, this package comprises a set of health interventions provided in PHCCs daily at little or no cost to clients [12], and supported by a government financial mechanism [12]. The package contains government-defined minimum criteria for PHC center personnel resources, equipment,

medication, infrastructure, and services. It includes child survival (Integrated Management of Childhood Illnesses and Routine Immunization), safe motherhood (antenatal care, facility-based delivery, postnatal care, and family planning), communicable disease control (Tuberculosis (TB), Human Immune Virus (HIV), and Malaria), health education and community mobilization, nutrition, and noncommunicable disease (NCD) prevention [13].

Other parts of Nigeria have witnessed strategic plans to improve the PHC, such as the District Health System (DHS) established in Enugu State in 2004. This system was established to provide organizational structure and improve the delivery of PHC. The policy was intended to address issues such as disagreements between the state and local governments regarding PHCC management and the unclear manner in which the federal government funds PHC [14]. However, this was not entirely successful due to implementation challenges.

The PHC was initially established in both rural and urban regions of Nigeria with the goal of achieving equitable access to healthcare for all citizens. However, the rural populations in Nigeria continue to be significantly underserved compared to their urban counterparts [15]. Highlighting prevailing issues in Nigeria's implementation of a PHC system [16]. Alenoghena identified implementation constraints related to governmental or system factors and people/client factors. Governmental constraints include a lack of political will, inadequate funding or misappropriation of funds, inadequate inter-sectoral coordination, and disputes between local and state governments. On the other hand, people's or client factors include community views of the poor quality and inadequacy of services provided in PHCC, low utilization of PHC services, and poor community participation [16–18]. Other factors include a lack of workplace motivation, such as poor remuneration, unhealthy competition among various categories of health workers, a lack of involvement of the private health sector in the planning and implementation of PHC, poor management of information systems, and heavy reliance on initiatives funded by foreign donors such as the United Nations Children's Fund (UNICEF) and the United States Agency for International Development (USAID) [16].

The World Health Organization (WHO) has identified three critical areas of focus to improve PHC globally. (i) *Providing a 'one-stop' mechanism for PHC implementation support to Member States, tailored to country context and priorities.* (ii) *Producing PHC-oriented evidence and innovation, with a sharper focus on people left behind.* (iii) *Promoting PHC renewal through policy leadership, advocacy and strategic partnerships.* The second focus area, which is to create evidence and innovation for PHC, with a particular emphasis on marginalized or underserved groups, is this paper's primary area of interest

[19]. This is based on the existing implementation evidence and global best practice guidelines, which have suggested that multiple, interconnected policies aimed at different healthcare system levels are the most effective way to improve access to best-practice PHC [19]. These policies should focus on three key areas: system-level changes, service delivery policies, and financial incentives to encourage a wider dissemination of programs. Secondly, practice-level reform should provide encouragement and support for good multidisciplinary care and develop practice systems to identify and follow up with patients who require certain aspects of care. Finally, community-level programming should increase community participation through outreach and other types of service delivery that bring services to patients, assist patients through reminder systems to follow up on their healthcare needs, and public and social education projects to improve knowledge about appropriate services or community participation. This paper will assess the PHC best practice in Benue state, Nigeria, focusing on quality care.

Table 1 Study population and sociodemographic

Local Government Area	Wards	Health Facility Names
Ado	Igumale	PHC Igumale Ado
Agatu	Ogbaulu	PHC Ogaulu
Gboko	Mbakwen	Mgbanngun PHC
Guma	Nzorov	CHC Gbajimba
Gwer_East	Ikwe__	PHC Igbor
Katsina-Ala	Ikurav-Tiev_I	PHC Jov Mbayough
	Iwar	PHC Aamaafu
	Tiir	PHC Gbor
	Township	PHC Katsina/Ala Township
	Utange	Comprehensive Health Centre (CHC) Tor-Donga
Kwande	Liev_Ii	PHC Ikyogen
	Mbaketsa	PHC Koti
	Mbayoo	PHC Ikyaior
	Tondov_I	PHC Mbakunu
	Usar	PHC Gube
Logo	Mbaduul	PHC Gondoza
Makurdi	Ankpa_Wadata	PHC Wadata
	Bar	PHC Adeke
	Modern_Market	PHC Adaka
Oju	Iyeche	PHC Akwuda
Ogbadibo	Ai-Ona I	PHC Adum Ai-Ona.
Oturkpo	Allan	PHC Allan
Ukum	Mbazun	PHC Kyado
	Ugbaam	PHC Adogo
Ushongo	Lesse_Township	MCH Akpenge
	Mbaagir	CHC Waapera
Vandeikya	Mbagbera	PHC Tsua
	Mbayongo	PHC Ageva
	Nyumagbagh	PHC Ikpoikpo
Total 15	29	29

Methodology

Study design

The study used a cross-sectional, quantitative study design.

Study settings

This study was conducted in Benue State in the North-Central geo-political zone of Nigeria, with a land mass of 34,059 km². The state is bounded by Taraba State to the northeast, Cross River State and the Republic of Cameroon to the east, Enugu and Ebonyi States to the south, Kogi to the west, and Nasarawa State to the north. The State has 23 Local Government Areas, with a 2021 projected population of 6,573,445 (males: 3,201,913, females: 3,201,913) at a growth rate of 3% [20].

Study population

Health care in the state is provided by Federal, State and Local Governments, Faith-based organizations, formal and informal private providers, and traditional healers. However, these players are poorly coordinated regarding effective service delivery, and the state of primary healthcare (PHC) remains weak [21]. Currently, 1,394 healthcare facilities are distributed across the 23 LGAs in the state. Categorizing by ownership, 972 (70%) were public health facilities, and 422 (30%) were private health facilities. Out of the 1394 facilities, 1291 (93%) were primary health facilities, 101 (7%) were secondary, and 2 (0%) were tertiary health facilities. Among the 1,291 primary healthcare facilities, 944 (73%) were public PHC facilities, while 347 (27%) were private PHC facilities. Out of the 101 secondary healthcare facilities, 24 (23%) were public secondary healthcare facilities, 75 (74%) were private secondary healthcare facilities, and 2 (2%) were tertiary healthcare facilities owned by the public sector.

Sampling Technique.

A two-stage sampling technique was used to select the PHCs that would be involved in our study. In the first stage, 15 LGAs were purposively selected to be part of the study to capture both urban and rural LGAs. For the next stage, PHC centers owned by the government in Benue state were selected randomly from the 15 LGAs based on our sample size calculations using sample size calculator for health facility surveys [22]. Based on our sample size, 29 PHCs were selected by simple random sampling. This was done to ensure comprehensive coverage and provide a representative sample of the study population. (See Table 1)

Data collection

Secondary data from the Benue State Health Management Information System (HMIS) was used for this study. This data was gathered at the PHC level (by the facility staff) over the course of one year (2022). This included

the activity indicators from the facilities. The information was then compiled and uploaded to the Health Management Information System of the State Ministry of Health. (See Table 1)

Data analysis

A total of 29 health facilities were examined. SPSS version 21 was used to analyze the data, which were self-weighted [23]. Self-weighting was achieved by selecting clusters with a probability proportional to the size. Descriptive statistics were used to analyze the data and determine the best practices and challenges for best practices in the respective PHCs. Chi square was used to analyze the factors affecting the quality of healthcare provided at the health facilities.

Result

Best practices

Our findings under this theme are categorized as community- and facility-level practices.

Community-level practice

Table 2 outlines the best practices used at the community level to enhance community participation. This table summarizes data from 12 LGAs (Agatu Gwer-East, Katsina/Ala, Kwande, Logo, Makurdi, Ogbadibo, Oturkpo, Ukum, Kwande, Ushongo, and Vandeikya). Not every facility practiced community involvement, but those who did reported that providing health education (27.7%, $n=27$), community awareness, and sensitization (18.8%, $n=19$) was the most common practice. Additionally, Antenatal care (ANC), Family planning, Immunization, delivery, affordable services and free medical treatment data were collected from four LGAs (Katsina-Ala, Kwande, Makurdi and Vandeikya). In these LGAs, about 16.8% ($n=17$) of the facilities indicated providing either ANC, Family planning, Immunization, delivery, provision of affordable services or free medical treatment, and 9 (8.9%) taught sanitation procedures in the community. These practices are examples of PHCs' best practices in enhancing community participation.

Health facility-level practice

Table 3 shows the health facility-level practices. Data shows that 100 (99%) PHCs have service rosters, which can also be used for patient follow-up. About 85 (84.1%) have indicated that deliveries were taken by the reporting midwife, and staff were given on-the-job training 54.5% (55). This is evidence of the best practice in the facility.

Challenges to best practices

Table 4 presents the challenges to implementing best practices in PHCs in Benue State. The Table shows that

Table 2 Best practices at the community level

Community participation	Frequency (%)
Health Education/health talk	27 (27.7)
Sensitization/community awareness/community mobilization/outreaches/household sensitization	19 (18.8)
ANC, Family planning/Immunization/Delivery/Affordable services/free medical treatment	17 (16.8)
Sanitation procedures	9 (8.9)
Total	72 (72.7)

Table 3 Best practices at the facility-level

Practice system	Frequency (%) $n=101$
Service provision roster/follow up with patients	100 (99.0)
Presence of health worker in health facility to attend to cases/ deliveries taken by the reporting midwife	85 (84.1)
Positive health personnel/patient relationship	78 (77.2)
On-the-job-mentoring	55 (54.5)

Table 4 Challenges to best practice

Response	Frequency	Percent
no	93	92.1
yes	8	7.9
Total	101	100.0

Table 5 Quality of care at health facility

	Frequency (%)	χ^2 (P-value)
Availability of Assessment team		
No	72 (71.3)	69.624
Yes	29 (28.7)	(0.00)
Total	101 (100.0)	
Availability of Quality improvement plan		
No	80 (79.2)	73.228
Yes	21 (20.8)	(0.73)
Total	101 (100.0)	

the majority of respondents, 93 (92.1%), reported no challenges in implementing the best practices indicated.

Quality of care at health facility

In Table 5, it shows that 71.3% (72) of facilities lack quality care assessment teams, which affects healthcare quality ($p<0.05$).

Health facility supervision

Table 6 displays information about the supervision of health facilities in the study. It was found that approximately 65.3% (66) of the facilities had been supervised. The supervision was carried out at different levels, namely, national (4.5%), state (50%) and LGA (45.5%). The most common type of supervision performed was

Table 6 Health facility supervision

Facility supervision	Frequency	Percent
No	35	34.7
Yes	66	65.3
Total	101	100.0
Level of supervision	Frequency	Percent
National	3	4.5
State	33	50
LGA	30	45.5
Total	66	100
Type of supervision	Frequency	Percent
Family Planning Data Quality User Supportive Supervision (DQUSS)	1	1.5
Integrated Supportive Supervision (ISS)	27	41
Routine Immunization Supportive Supervision (RISS)	13	19.7
Reproductive, Maternal, Newborn, Child, Adolescent Health + Nutrition (RMNCAH + N)	12	18.1
Other	13	19.7
Total	66	100

Integrated Supportive Supervision (ISS), which was conducted in 41% [27] of the facilities.

Discussion

This study assessed best practices, challenges, and health facility quality of care in Benue State, Nigeria. Best practices are processes created or promoted as a standard appropriate for general adoption based on study and experience [24]. To improve primary care quality, there is a need to understand gradual and adaptive changes that provide benefits. This learning should happen in the context of healthcare delivery and through the interchange of best practices within and between communities [25].

To improve overall health outcomes, our study considered the context and explored what was working and what was not, aligning with WHO criteria for assessing best practices [26]. Our study also derived an understanding of the initiatives used at the institutional and community levels to improve health outcomes, emphasizing that no single method can be used to check best practices.

Our study revealed that best practices at the community level included community outreaches by health personnel to educate and create awareness on the importance of family planning, ANC and post-natal care (PNC), good hygiene and nutrition, and other activities to enhance uptake of primary health care services. These practices promote better health outcomes for the community and empower individuals to take control of their own healthcare. By offering a range of services in addition to health education and health promotion strategies, primary health centers are helping to create a healthier and more informed population. This focus on community participation can increase trust in the healthcare system

and ultimately improve overall health and well-being in these LGAs.

Our findings showed that best practices at the health facility level were considered to be the availability and utilization of service rosters for patient follow-up, availability of adequate skilled staff and regular training and capacity building. This is a limited perspective because the minimum standard of care document also highlights the training of health workers on patient referral, HIV screening and counselling services, and proper administration of medication, etc. However, the implementation of these practices is often hindered by a range of obstacles, including the complexity of practice settings, [27] inadequate support from management and stakeholders, resistance to change, and a shortage of personnel with the required skills. Additionally, insufficient infrastructure and a lack of essential equipment can pose significant challenges [28]. The report underscores the need for effective strategies to address these obstacles and ensure that best practices are consistently implemented in healthcare facilities.

Our study also reveals that despite the supervision of the facility by the Local Government Authority (LGA) and the state, the absence of an assessment team and quality improvement plan in the facility hinders the improvement of care quality. The absence of these two factors poses a significant challenge to the enhancement of care quality [30]. Furthermore, Nigeria's low scores for provider ability raise concerns about the quality of primary care [29].

Healthcare reformers have made efforts to address accountability gaps within the healthcare system. However, these initiatives have been mainly rendered ineffective due to the lack of investment from high-ranking politicians in ensuring essential institutional improvements [30]. Low- and middle-income countries face significant gaps in the capacity and delivery of basic medical care, including inadequate and abusive care by healthcare providers [31, 32]. Consequently, primary healthcare facilities, particularly those in the public sector, are underutilized [33]. This issue is particularly apparent in Nigeria, where primary healthcare centers (PHCs) remain underutilized, and the objective of achieving universal primary care has not been successfully realized [34].

Strengths and limitations

The State HMIS data is representative of the state, which strengthens the applicability of the findings from this study in Benue state as a whole and in similar contexts. However, the study was limited in scope because the authors had to rely on secondary data, which did not sufficiently explore other related variables of interest. Also, many of the data was missing.

Conclusion

Our study highlights the pressing need for improvement in the primary healthcare system in Nigeria, especially in Benue State. It is crucial for policymakers and healthcare providers to address the gaps in the capacity and delivery of basic medical care and the quality of care provided. By implementing best practices and ensuring universal access to primary healthcare, the overall health outcomes of the population can be greatly improved. Efforts must be made to reinvigorate and optimize the utilization of primary healthcare facilities in order to create a sustainable and effective healthcare system for all Nigerians. The findings of this study will contribute to the existing literature on PHC, best practices, and Quality of Care in Nigeria.

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Author contributions

Conceptualization: [UN, OP, CO], Methodology: [UN, OP, CO, NB], Formal analysis and investigation: [UN, CO], Writing-original draft preparation: [UN, CO, OP], Writing - review and editing: [UN, OP, CO, NB, OO, WG, AM], Resources: [NB, OO, WG, AM, OP].

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Data availability

Dataset available from the lead author and the corresponding author.

Declarations

Ethics approval and consent to participate

This study was reviewed and approved by the Health Research Ethics Committee of the University of Nigeria Teaching Hospital, Ituku-ozalla Enugu state, Nigeria. (UNTH.HREC/2022/04/422). Data for the study was obtained from the Benue State Health Management Information System and selected PHCs in Benue. There were no identifiers linking the respondents/facilities to the data. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not Applicable.

Competing interests

The authors declare no competing interests.

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References

1. Sengupta A. Univers Health Coverage Beyond Rhetor. 2013;20:1–25.
2. Norheim OF. Ethical Perspective: Five Unacceptable Trade-offs on the Path to Universal Health Coverage. *International J of Heal Policy Management*. 2015 [cited 2023 May 12];4(11):711. Available from: [PMC/articles/PMC4629695/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4629695/).
3. Evans DB, Hsu J, Boerma T. Universal health coverage and universal access. *Bull World Health Organ*. 2013;91(8):546–A546.
4. Vega J. Universal health coverage: The post-2015 development agenda. *Lancet* [Internet]. 2013 Jan 19 [cited 2023 May 12];381(9862):179–80. <http://www.thelancet.com/article/S0140673613600628/fulltext>
5. Fusheini A, Eyles J. Achieving universal health coverage in South Africa through a district health system approach: Conflicting ideologies of health-care provision. *BMC Health Serv Res*. [Internet]. 2016 Oct 7 [cited 2023 May 12];16(1):1–11. <https://link.springer.com/articles/https://doi.org/10.1186/s12913-016-1797-4>
6. Savedoff WD, De Ferranti D, Smith AL, Fan V. Political and economic aspects of the transition to universal health coverage. *Lancet*. 2012;380(9845):924–32.
7. Marmor T, Wendt C. Conceptual Framework for comparing Healthcare politics and Policy. *Health Policy* (New York). 2012;107(1):11–20.
8. Behera BK, Prasad R, Shyambhatee (no date) Primary health-care goal and principles, *Healthcare Strategies and Planning for Social Inclusion and Development*. U.S. National Library of Medicine. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8607883/> Accessed 15 Aug 2024.
9. Shi L, Masís DP, Guanais FC. Measurement of Primary Care: Report on the Johns Hopkins Primary Care Assessment Tool [Internet]. Inter-American Development Bank; 2013 [cited May 12, 2023]. <http://www.iadb.org>
10. World Health Organisation. Primary healthcare [Internet], WHO. 2021 [cited 2023 May 12]. <https://www.int/news-room/fact-sheets/detail/primary-health-care>
11. Ekenna A, Itanyi IU et al. How ready is the system to deliver primary health care? Results of a primary health facility assessment in Enugu State, Nigeria. *Health Policy Plan* [Internet]. 2020 Nov 1 [cited 2021 Mar 19];35(Supplement_1):97–106. https://academic.oup.com/heapol/article/35/Supplement_1/97/5960442
12. Federal Ministry of Health. National guidelines for the development of primary health care systems in Nigeria. National Prim Heal Care Dev Agency [Internet]. 4th ed. 2012; Available from: National Guidelines for the Development of Primary Health Care System in Nigeria.
13. National Primary Healthcare Development Agency. Minimum standards for Primary Health Care in Nigeria. National Primary Health Care Development Agency. Abuja, Nigeria; 2010.
14. Uzochukwu Bs O, Oe EN. The District Health System In Enugu State, Nigeria: An analysis of Policy Development and Implementation. *African J Heal Econ* [Internet]. 2014 [cited 2023 May 24];Volume 3 Issue 2(02):1–14. http://www.ajhe.org/in/abstract.php?article_id=3065
15. Abdulraheem I. Primary health care services in Nigeria: critical issues and strategies for enhancing the use by the rural communities. *J Public Health Epidemiol*. 2012;4. <https://doi.org/10.5897/JPH11.133>
16. Alenoghena I, Aigbiremolen A, Abejegah C, Eboreime E. Primary Health Care in Nigeria: Strategies and constraints in implementation. *Int J Community Res* [Internet]. 2014 Sep 12 [cited 2023 May 24];3(3):74–9. Available from: Oyekale AS. Assessment of primary health care facilities' service readiness in Nigeria. *Health Serv Res*. 2017;17(172):1–12. <https://www.ajol.info/index.php/ijcr/article/view/107665>
17. Ezumah N, Manzano A, Ezenwaka U, Obi U, Ensor T, Etiaba E et al. Role of trust in sustaining provision and uptake of maternal and child healthcare: Evidence from a national programme in Nigeria. *Soc Sci Med* [Internet]. 2022 Jan 1 [cited 2022 Jul 4];293. <https://pubmed.ncbi.nlm.nih.gov/34923352/>
18. Mbachu C, Etiaba E, Ekenso B, Ogu U, Onwujekwe O, Uzochukwu B et al. Village health worker motivation for better performance in a maternal and child health programme in Nigeria: A realist evaluation: <https://doi.org/10.1177/13558196211055323> [Internet]. 2022 Jan 28 [cited 2022 Feb 4];135581962110553. Available from: Oyekale AS. Assessment of primary health care facilities' service readiness in Nigeria. *Health Serv Res*. 2017;17(172):1–12. <https://doi.org/10.1177/13558196211055323>
19. Comino EJ, Davies GP, Krastev Y, Haas M, Christl B, Furler J et al. A systematic review of interventions to enhance access to best practice primary health care for chronic disease management, prevention and episodic care. *BMC Health Serv Res*. [Internet]. 2012 Nov 21 [cited 2023 May 24];12(1):1–9. <https://link.springer.com/articles/https://doi.org/10.1186/1472-6963-12-415>
20. National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF). August, 2022. Multiple Indicator Cluster Survey 2021, Survey findings Report. Abuja, Nigeria: National Bureau of Statistics and United Nations Children's Fund.
21. Ogu UU, Ekenso B, Mirzoev T, Uguru N, Etiaba E, Uzochukwu B et al. Demand and supply analysis for maternal and child health services at the primary healthcare level in Nigeria. *BMC Health Serv Res* [Internet]. 2023 Dec 1 [cited 2024 Feb 27];23(1):1–9. <https://bmchealthservres.biomedcentral.com/articles/https://doi.org/10.1186/s12913-023-10210-6>
22. SP, Kane P. (2021) Sample Size Calculator. <https://clinical.com/stats/sample-size.aspx> (Accessed: 20 July 2024).
23. United Nations Economic Commission for Europe. Sample guidelines. <https://unece.org/unece-content/documents?legacy=All&keyword=&page=13967> Accessed 22/7/2024.

24. Best practice Definition & Meaning - Merriam-Webster [Internet]. [cited 2023 May 25]. <https://www.merriam-webster.com/dictionary/bestpractice>
25. World Health Organisation. Quality in primary health care. Tech Ser Prim Health care [Internet]. 2018; <https://www.who.int/docs/default-source/primary-health-care-conference/quality.pdf>
26. World Health Organisation. Handbook for national quality policy and strategy: a practical approach for developing policy and strategy to improve quality of care. Geneva; 2018.
27. Fitzgerald S, Geaney F, Kelly C, McHugh S, Perry JJ. Barriers to and facilitators of implementing complex workplace dietary interventions: Process evaluation results of a cluster controlled trial. *BMC Health Serv Res* [Internet]. 2016 Apr 21 [cited 2024 Feb 27];16(1):1–13. <https://bmchealthservres.biomedcentral.com/articles/https://doi.org/10.1186/s12913-016-1413-7>
28. Etiaba E, Manzano A, Agbawodikeizu U, Ogu U, Ebenso B, Uzochukwu B et al. If you are on duty, you may be afraid to come out to attend to a person: fear of crime and security challenges in maternal acute care in Nigeria from a realist perspective. *BMC Health Serv Res* [Internet]. 2020;20(1):903. <https://doi.org/10.1186/s12913-020-05747-9>
29. Kress DH, Su Y, Wang H. Assessment of primary health care system performance in Nigeria: using the primary health care performance indicator conceptual framework. *Heal Syst Reform*. 2016;2(4):302–18.
30. Croke K, Ogbuonji O. Health reform in Nigeria: the politics of primary health care and universal health coverage, *Health Policy and Planning*, 39, issue 1, January 2024, Pages 22–31, <https://doi.org/10.1093/heapol/czad107>
31. Ntoimo LFC, Okonofua FE, Igboin B, Ekwo C, Imongan W, Yaya S. Why rural women do not use primary health centres for pregnancy care: evidence from a qualitative study in Nigeria. *BMC Pregnancy Childbirth*. 2019;19:1–13.
32. Okonofua F, Ntoimo L, Ogungbangbe J, Anjorin S, Imongan W, Yaya S. Predictors of women's utilization of primary health care for skilled pregnancy care in rural Nigeria. *BMC Pregnancy Childbirth* [Internet]. 2018 Apr 18 [cited 2023 May 24];18(1):1–15. <https://bmcpregnancychildbirth.biomedcentral.com/articles/https://doi.org/10.1186/s12884-018-1730-4>
33. Ali M, Farron M, Dilip TR, Folz R. Assessment of family planning service availability and readiness in 10 African countries. *Glob Heal Sci Pract* [Internet]. 2018 Oct 1 [cited 2023 May 24];6(3):473–83. <https://www.ghsjournal.org/content/6/3/473>
34. Oyekale AS. Assessment of primary health care facilities' service readiness in Nigeria. *Health Serv Res*. 2017;17(172):1–12.

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