

**“We have either obsolete knowledge, obsolete equipment or obsolete skills”:
Policymakers and health care providers’ views on maternal health delivery in
rural Nigeria.**

Ogochukwu Udenigwe¹, Friday E Okonofua^{2,3}, Lorretta FC Ntoimo⁴, Wilson Imongan², Brian Igboin², Sanni Yaya*^{1,5}

1. School of International Development and Global Studies, University of Ottawa, Ottawa, Ontario, Canada
2. Women’s Health and Action Research Centre, KM 11 Benin-Lagos Expressway, Igue-Iheha, Benin City, Edo State Nigeria
3. Centre of Excellence in Reproductive Health Innovation, Benin City, Nigeria
4. Federal University Oye-Ekiti, P. M. B. 373, Km 3 Oye-Are Road, Oye-Ekiti, Ekiti State, Nigeria
5. The George Institute for Global Health, Imperial College London, London, United Kingdom

*Corresponding author: Sanni Yaya, School of International Development and Global Studies, University of Ottawa, 120, University Private, Ottawa, Ontario, Canada, Tel: +1-613-562-5800; E-mail: sanni.yaya@uOttawa.ca

OU: ouden024@uottawa.ca
FO: feokonofua@yahoo.co.uk
LN: lorretta.ntoimo@fuoye.edu.ng
WI: drimongan@yahoo.com
BI: igboinbrian@gmail.com

Abstract

Background

Good service delivery is a key function of a health system and the WHO recommends that service delivery be monitored and strengthened to meet minimum quality standards. Service delivery of maternal health services in primary health centres (PHCs) in rural Nigeria has rarely been assessed through the WHO's key characteristics for monitoring the quality of service delivery. In this study, the authors interrogated policymakers' and heads of health care providers' notions of service delivery of maternal health care in PHCs in rural Edo State, Nigeria.

Methods

This cross-sectional qualitative study uses data collected in two rural Local Government Areas of Edo State in Southern Nigeria through key informant interviews with 13 key stakeholders (policy makers and health care providers) from a range of institutions. Data was analyzed using an iterative process of inductive and deductive approaches.

Results

Respondents generally depicted maternal care services in PHCs as inaccessible due to undue barriers of cost and geographic location but deemed it acceptable to women. Respondents' notion of quality of service delivery encompassed factors such as patient-provider relationships, hygienic conditions of PHC centres, availability of skilled healthcare staff, and infrastructural constraints.

Conclusion

This study revealed that while some key aspects of service delivery are inadequate in rural PHCs, there are promising policy reforms underway to address some of the issues. It is important that health officials advocate for strong policies and implementation strategies.

Keywords: Maternal and newborn health, Health system barriers, Access, Maternal healthcare, Qualitative study, Global Health, Nigeria.

Background

The emergence of the well known “Alma-Ata Declaration” occurred after decades of profound inequalities and irregularities in the provision and delivery of health service across the globe, particularly in sub-Saharan Africa. The declaration identified primary health care (PHC) as key to achieving the goal of health for all by 2000 [1]. The declaration emphasised health as a basic human right with community participation as fundamental, and the key role of governments in the provision of health care [1]. The initial vision of PHC was one where basic health care was made accessible to all through health service delivery that emphasised disease prevention and health promotion. The declaration also envisioned PHC as focussing on local needs with the participation of health, social and economic sectors [1–3].

Nigeria’s implicit principles and philosophy on primary health care emerged with the launch of the Basic Health Service Scheme in 1975, three years before the Alma-Ata declaration. The basic elements of the scheme was to avail quality health care to all through PHC particularly in the rural regions [4,5]. The scheme, which emphasised improved delivery of maternal and child health services through PHCs [6], has not been effectively implemented in the country. However, Nigeria made great strides in PHC implementation and recorded the greatest boost to primary health care delivery between 1985- 1992 through the efforts of then Minister of Health, Professor Olikoye Ransome-Kuti. Specifically, service delivery was based on the Alma-Ata declaration of 1978 with an emphasis on preventive medicine, promoting community health particularly maternal and child health, and reducing mortality [7,8]. In 1992, the National Primary Health Care Development Agency was set up to continue and scale the PHC agenda to rural areas. The Agency suffered setbacks in subsequent years, in part due to the unstable governance during the military era and weak leadership in the health sector, but started to record modest achievements in 1999 at the advent of democratic governance [8]. Nigeria’s National Health Policy was revised in 2004 and aimed to strengthen and revitalise PHC in Nigeria. In 2009, the Agency implemented a few innovative programs, notably the National Midwifery Service Scheme which was designed to increase coverage of skilled birth attendants in rural communities to reduce maternal, newborn and child mortality.

More recently, efforts were made to improve coordination within the health system. Under Nigeria’s National Health Policy, the three tiers of government (federal, state and local) share responsibilities for providing health services within a three-tiered health system (tertiary, secondary and primary health care) [9,10]. The federal government is mainly responsible for policy, planning, coordinating the implementation of national health policies, health management information systems, among other responsibilities. The state governments mainly manage secondary health facilities (general hospitals) and sometimes tertiary facilities. Through the State Ministries of Health and State Hospital Management Boards, the States share the responsibility of managing health facilities and programs with the Local Government Areas (LGAs). The LGAs operate primary health care facilities within their geographic areas and are responsible for providing basic health services, community health services, hygiene and sanitation, and maternal health care. The involvement of the three levels of government in PHC has meant that multiple agencies at all government levels were managing human resources, finances, and budgeting for

PHCs concurrently. This created duplication, opportunities for misappropriation of funds, and lack of accountability in planning, service provision and supervision. Against this backdrop, the Primary Health Care Under One Roof (PHCUOR) policy, approved as a national policy in 2011, was established to ensure uniformed management of PHC systems and services within states [11].

Despite these efforts towards strengthening PHC in Nigeria, challenges persist. Primary health care services remain grossly under utilized for maternal health care particularly in rural communities [12]. Current evidence suggests an inadequate PHC system in Nigeria with only 20% of its 30,000 PHC facilities operating at a functional capacity [8,13]. With respect to maternal health care, studies have examined PHC performance in Nigeria with a focus on various aspects of service delivery. Some dimensions of service delivery such as quality, accessibility, and availability have been used to examine service delivery in PHCs. For instance, quality of maternal health care services in PHC centres has been widely studied in Nigeria with indicators that are usually structural (such as lack of equipment and drugs) and process (lack of adequate policy/lack of policy implementation) in nature [14,15]. Studies in Nigeria have long gauged the accessibility of maternal health services in PHC centres using dimensions of physical and economic accessibility [16]; however, the socio-psychological considerations of people's ability to use health services is often missed. Furthermore, studies on the availability of maternal health services often consider the physical delivery of services [17], but considerations of service delivery should also include the range of services provided [18].

Arguably, these commonly used dimensions on their own do not convey a holistic picture of service delivery in PHC centres. This article aims to fill this gap by examining service delivery of maternal health through the lens of policymakers and health providers. The WHO prescribed key characteristics that give a broad understanding of appropriate service delivery mechanisms in a health system [18]. These characteristics would be attainable in an ideal health system based on primary health care and they include comprehensiveness, accessibility, coverage, continuity, quality, person centredness, coordination and accountability. This article draws on the WHO's key characteristics of good service delivery to examine maternal health services in rural Nigeria from the perspectives of policy makers and health care workers.

Methods

This study uses a cross sectional qualitative research design. Data was collected and analysed from key informant interviews in rural Edo State, Nigeria and focused on service delivery of maternal health services from the perspective of policy makers and health care providers. This study forms part of a larger initiative in Edo State by the Women's Health Action Research Centre and the University of Ottawa, funded under the Innovating for Maternal and Child Health Africa initiative (a partnership of Global Affairs Canada, Canada's International Development Research Centre and Canadian Institutes of Health Research). As part of the formative phase of the larger study, the study was designed to inform the development of interventions for improving access to, and the use of primary health care services for maternal health in rural Nigeria. Face-to-face key informant interviews (KII) were conducted using an appropriate key informant interview guide

with policy makers and heads of health care providers who were deemed key informants based on Gilchrist and Williams's description of key informants [19]. These are individuals who possess essential knowledge of the subject matter and have access to perspectives or observations that would ordinarily be inaccessible to the researcher [19]. Our findings were reported based on the Consolidated Criteria for Reporting Qualitative Research (COREQ) (See **Supplementary file 1**).

Research Setting

This study was conducted in Edo state, one of Nigeria's thirty-six States. Edo state was chosen as a study site because it is one of the lowest performing States in PHC development and maintenance in the country. Specifically, this study was conducted in Esan South East (ESE) and Etsako East (ETE), two mainly rural LGAs of Edo State with 10 political wards each. ETE is located in the northern part of Edo State and comprises of 145,996 residents, while ESE is located in the southern part with 167,721 residents. The principle source of maternal health care in the two LGAs is primary health care. ETE has 28 PHC centres and two general hospitals (secondary health facilities), while ESE has 25 PHC centres and one general hospital.

Participants and Recruitment

The study consisted of 13 purposefully selected stakeholders from different institutions in ESE and ETE in Edo State. Participants included a senior official with the State Ministry of Health, a senior official with the State Primary Healthcare Development Agency (SPHCDA), senior officials responsible for PHC at the LGAs, senior LGA officials, and Heads of health care providers in PHC centres. Table 1 shows a breakdown of the participants by region. Key informants were chosen using a purposeful criterion sampling technique whereby participants were identified because they meet or exceed a specific criterion related to the subject matter [20]. They were therefore considered knowledgeable and experienced to provide detailed information on the subject matter. The lead investigators (FO, WI, LN) purposefully recruited participants from different backgrounds and professions. The criteria for selection was that participants were in a key leadership position and possessed experience within the PHC sector. The lead investigators contacted each participant by email (or phone) with information about the study, voluntary participation, and informed consent.

Table 1. Study participants

Number of study participants			
Stakeholders	Esan South East (ESE)	Etsako East (ETE)	Total
Senior official within the State Ministry of Health			1
Senior official within the State Primary Healthcare Development Agency (SPHCDA)			1
Senior officials responsible for Primary Health Care (PHCs)	1	1	2
Senior Local Government officials	1	1	2
Heads of healthcare providers in PHCs	4	3	7
Total			13

Data collection and procedures

The lead investigators (FO, LN) and members of the technical team, who are experts in qualitative research, conducted a three-day training session for investigators who carried out this study. The training focused on the following factors: goals of the research, the art of qualitative data collection, using KII guides in qualitative research, the role of the data collector, research ethics, and data collection using electronic devices. The lead investigators developed a KII guide and on the last day of training, the trained investigators moderated the pilot of the guide in a community with similar characteristics to the study site.

Following the training, the trained investigators conducted KIIs in English. Data was collected from July 16 to August 30, 2017. As seen on Table 1, a total of 13 KIIs were conducted, with 6 in ESE and 5 in ETE and 2 at the State level. Trained investigators audio recorded the interviews and took reflective field notes to supplement the transcripts. Interviews lasted for 45 minutes on average and ended when no further issues arose. In order to achieve data saturation in interview studies, Francis et al. (2010) recommend identifying a minimum sample size for initial analysis and conducting more interviews until no new ideas emerge from the interviews. In this study, data analysis occurred after data collection was completed, however, data analysis showed that

no new themes emerged after analysing data from the first 10 interviews. The next three interviews supplemented already established themes from participants [21].

Research instruments

The KII guide consisted of open-ended questions and follow-up probes on stakeholders' perceptions of maternal health service delivery across PHCs in rural ESE and ETE communities. Questions explored opinions on key aspects of service delivery of maternal health services. A full description of the KII guide is available (See **Supplementary file 2**).

A sample of issues discussed with participants included:

1. Characteristics of maternal healthcare services delivered in PHCs in rural Edo.
2. Opinions on effective delivery of services in primary health care centres in rural Edo.
3. Challenges and opportunities for service delivery in PHCs.

Ethical considerations

The ethical clearance approval needed for the larger project was obtained from the National Health Research Ethics Committee (NHREC) on April 18, 2017 (reference number NHREC/01/01/2007–18/04/2017). All personal identifiers were removed to ensure confidentiality. Participants provided written informed consent prior to participating in this study.

Data analysis

All of the interviews were audio-taped and transcribed verbatim in the original language which was English. The primary author (OU) and corresponding author (SY) analysed the data and the co-authors validated the data. The authors compared the transcripts with the audio-recording and field-notes to ensure accuracy. In analysing the data, the authors applied an iterative process of inductive and deductive approaches to thematic coding. Following the recommendation of data analysis from Braun and Clark [22], the authors became familiar with the data, then proceeded to generate codes, then searched for themes, reviewed and defined themes. This was in line with an inductive approach to coding where themes emerged from the data not from any preconceived categories. The data was further analysed with a deductive approach whereby themes were organised based on existing literature and theories on service delivery.

Themes were generated as follows: Line-by-line reading generated words or phrases with similar meanings that were linked to the study's aim and existing literature on service delivery of maternal health care in rural Nigeria. These findings were categorised and noted and subsequently grouped into a coding scheme with the purpose of creating sub-categories. Sub-categories gave a more general description of the content. Similar sub-categories were grouped

to formulate main themes. Multiple coders (SY, OU) worked independently to analyse the transcript, code the interview data using free codes and develop the various themes. To establish inter-rater reliability and ensure trustworthiness of the study, the coders conducted frequent discussions to examine consistency during the individual process of coding. The coauthors audited the data analysis findings and reached a consensus on emerging themes.

Participants' views of maternal health care service delivery in rural Nigeria are presented in five overarching themes. These themes are in consideration of the WHO's key characteristics of good service delivery. The themes are elaborated on in the results section and are organised as follows: comprehensiveness, accessibility and coverage, quality of service, person-centredness and coordination, accountability, and efficiency.

Trustworthiness

This qualitative study utilized various strategies to ensure trustworthiness of the data. The KII guides were structured to allow for iterative questioning including the use of probes to elicit detailed data, and questions were rephrased to participants when necessary [23]. After data collection, FO and LN conducted member checks to ensure accuracy of the data. The coding process involved two coders (SY, OU) working independently to code the data and collaboratively to generate themes. The principal investigators FO, SY, and LN who have ample experience in reproductive health in sub-Saharan Africa audited the findings and provided feedback. Triangulation is important in promoting confirmability [23]. This study approached triangulation via data sources by interviewing a wide range of key informants. In writing up the manuscript, the author (OU) described the aim of the research and provided thick descriptions of participants' responses, along side relevant quotes to confirm interpretations. Quotes were also chosen to represent a typical response relative to the theme. These were necessary to ensure confirmability [24].

Results

Comprehensiveness: The WHO outlines a comprehensive model of service delivery as a key characteristic of good service delivery. A comprehensive PHC approach to maternal healthcare provides a range of services that are preventive, curative, and promotive. Study participants depicted PHC centres as providing a wide range of maternal healthcare services to women. For instance, as part of primary care, pregnant women received preventative services such as antenatal care and also received health promotive services focused on healthy nutrition and personal hygiene during pregnancy. Some PHC offered family planning services including a constant supply of contraceptives to women, other PHC programs enhanced women's access to family services. A participant commented on the range of services available in PHC centres:

“Nationally, we have this free malaria program for pregnant children and children under 5...You have programs to eliminate mother to child transmission of HIV... You also have programs on nutrition...programs are running on increasing access to family services.” (Senior official, Ministry of Health)

“We teach them, we encourage some women to do backyard garden”. (Head, healthcare provider, ESE)

Furthermore, participants’ comments demonstrated a strong partnership between PHC centres and the community in designing and implementing acceptable maternal health services. Beyond the provision of health services, some PHCs enhanced the efforts of communities to build tanks to provide access to clean water for the community. PHC workers and the community *“work hand in hand”* and they prioritized a good working relationship with the community. One participant commented on the relationships between PHC and the community:

“We summoned chiefs in all the quarters, they came there, we let them know what is happening here[PHC], so that it will not look like a taboo to them, they should encourage their people to accept, with that they went out to build the relationship.” (Head, healthcare providers, ESE)

These positive reports notwithstanding, some participants felt that PHC centres did not provide a range of maternal health services. Participants felt that PHC centres were ill equipped to provide basic maternal health care. For instance, pregnant women were unable to undergo routine screening and testing at PHC centres due to the shortage of equipment. Women were often referred to secondary or tertiary health facilities to receive basic maternal health care. These facilities were often outside of their communities, thereby causing delay in reaching care. Participants called on the government to improve medical-oriented services in rural PHCs:

“So we are trying to look for some basic things but [PHC] facility does not have a glucometer to instantly check the blood sugar of a patient in antenatal.” (Senior official, PHC, ESE).

“like oxygen, we need them in [primary] health facilities, at least when a patient comes, the patient is maybe unconscious, you need to use oxygen instead of maybe referring that patient to a tertiary institution or state hospital. In the community, we need something like oxygen right inside the health center there, so we want our government to please make all this things available for us, like drugs, like those beds, like the oxygen I just mentioned. There are some instruments we need at least in the labour ward, in the theatre. At least when a patient comes, you just rush to resuscitate, we don’t need to start referring because at times, by the time you refer them, some give up [die] on the way” (Head, Healthcare providers, ESE).

Accessibility and coverage: A key characteristic of good service delivery is one where services are designed to reach all patients in a defined target population without barriers of cost, geography, or culture. Participants reported that even with the range of maternal health care services currently provided in PHC centres, there were disparities in healthcare access and utilization of various services. Factors such as out-of-pocket costs for services and the physical accessibility of PHC facilities meant that women of low socioeconomic status in rural areas were less likely than their wealthier counterparts to receive maternal health care. The financial cost for

accessing maternal healthcare services in PHCs includes cost for registration, cost for routine medicines, and cost for transportation. There were discrepancies in perspectives of coverage between policy makers and healthcare providers. Some policy makers in the ESE region believed that maternal healthcare services and basic medication during pregnancy were provided free of charge to women. A policy maker commented:

“Here even delivery is free, government policy, except it is not a normal delivery, then there may be some charges, but if it is normal it is free. Malaria treatment for instance for pregnant mothers and zero to five is also free, drugs are very available and are also free, so people are aware of these incentives and they try to take advantage of it.” (Senior local government official, ESE).

Other policy makers in the same region, however, did not share this view because women were often required to pay out of pocket for basic maternal health care services which were supposed to be free to charge. For instance, some PHC centres required that pregnant women provide basic medical supplies such as surgical gloves and cord clamps, prior to assisting with deliveries. In addition, patients pay out of pocket for drugs and routine medical screening. Participants also noted that in some cases, the financial costs of primary healthcare could get so expensive that it amounted to the same as secondary healthcare costs. Participants were concerned that these factors have added up to make maternal services unaffordable for most of the rural population, particularly poor families. Policymakers and healthcare providers asserted that offering free maternal health services will improve women’s use of PHC centres for maternal health care services.

“It is supposed to be free to deliver, you know, but if a woman comes to deliver, provision of things like surgical gloves for you to be able to take a delivery is one of the criteria and then little things like cord clamps, but as for say you have delivered [after delivery], pay 2,000 naira” (Senior Official, PHCs, ESE)

“The minimum cost? [pregnant women] will spend close to between N 15,000 to N 20,000 on routine basic care involving the routine basic medicine... it is a huge amount for our population.” (Senior official, PHCs, ETE).

“I think government should assist us with all those things, like family planning, they should assist us with all those things...because some persons will tell you they don’t have money... by the time you tell the women we have this things they are free, they will be glad to come, but by the time you attach little money, you will scare them away” (Senior Official, Ministry of Health)

“[primary]health center is supposed to be cheaper than general (secondary healthcare), but sometimes, you see the bill being the same because of no drugs” (Head, healthcare service providers, ETE).

Furthermore, participants indicated that access to maternal care services was hampered by distance to PHC centres. Moreover, bad roads and lack of reliable transportation deterred women's access to maternal health services. Participants cited the need for more PHC centers because current centres were operating beyond capacity.

“The distance to PHCs, those that really live very far can really find it very difficult to access the PHCs. So PHCs really need to spread out more and maybe on a ratio to population. PHCs ratio shows a little lower than what it is now. We have so many people attending just one PHC or being serviced by one PHC, so we want many more PHCs so that many more people will have where to go. I think that is what has reduced their usage.” (Senior official, PHCs, ETE).

“They don't have vehicle to leave the place, before they can get vehicle, the roads are bad. That is just the major reason. The roads are bad, no transport, some are very close to the river, before they could leave the river to come to the nearby health center, those are the reasons. At least if there is transportation, the road is good, stand by vehicle, even in the health center if we have vehicle too, we will do better.” (Head, Healthcare Providers, ESE)

Another important dimension of access is the socio-psychological aspect of women's ability to use PHCs. Participants indicated that factors related to beliefs, and nature of relationship with providers plays a role in women's access to maternal health care services. Participants described efforts to make services accessible to the community. They reportedly enhanced the acceptability of services by consulting community members and encouraged their participation in designing and delivering health programs. However, participants highlighted issues related to the nature of interactions between patients and health care providers. Healthcare workers were reportedly harsh, and abusive to women and this discouraged their use of PHCs for maternal care.

“Another thing is the relationship of the nurse to the patient, do you understand, there are some people [nurses] who are harsh to them [patient] so they may change health facility.” (Head, healthcare providers, ETE)

While participants' views gave a general sense that maternal health service delivery was not always designed to cover all women seeking care, some applauded existing initiatives that aimed to increase the coverage of maternal health care services. One of such initiative is the drug revolving fund, a drug management initiative aimed at making essential medication accessible and affordable, particularly to pregnant women and children. The drug revolving fund initiative reinvests revenue from the sale of drugs in the purchase of new drugs thereby making them more accessible and affordable in PHC centres.

Quality of Service: A key characteristic of good service delivery is that services are of high quality, safe and given in a timely fashion. Quality maternal health care services particularly

during pregnancy and childbirth were reported as the exception rather than the rule in rural communities. In the case of pregnancy care, participants linked quality care with adverse pregnancy outcome. A PHC centre was reported to deliver quality skilled pregnancy care if there was an absence of adverse pregnancy outcomes such as still births, pre/postpartum hemorrhage, and maternal deaths in the past year. Participants linked the quality of maternal health services to the provision of skilled care by qualified health care personnel. An overwhelming number of participants across the different LGAs expressed displeasure over the extreme shortage of the health workforce. Participants opined that PHC centres were lacking in different cadres of healthcare workers. They believed that this resulted in unsafe and inefficient service delivery. The shortage of doctors or midwives in rural PHC centres often meant that obstetric emergencies were handled by other healthcare staff who were not qualified or experienced to handle such emergencies. There were reported instances of maternal deaths during obstetric emergencies due to the absence of qualified health care workers. A health care worker described the current situation of staff shortage in rural communities:

“Yes, for instance in all the health centers in this LGA, we just have one, one nurse per center but at least you are supposed to have four, four personnel on ground so that if one does morning, the other afternoon, the other one night at least we should have one maybe on leave but in this case we have just one staff who runs 24 hours’ duty today, tomorrow, the same thing. So, there is shortage of staff, I mean a qualified nurse midwife in this local government, we are very much short staffed.” (Head, Healthcare providers, ESE)

There are ongoing efforts to improve the quality of care provided by healthcare staff in rural PHCs. Policy makers and healthcare workers attested to various human resource training and skill enhancement opportunities in the PHC sector provided by various non- governmental organisations. They reportedly received training on a range of topics including immunisation, malaria treatment, skilled pregnancy care, healthcare management, drug revolving scheme, and legal matters. Respondents believed that opportunities for training were impactful in boosting the morale of healthcare staff and keeping them motivated while on the job. Additionally, trainings were viewed as important in expanding the knowledge base of healthcare workers, particularly lower-trained cadre of workers such as community health workers. Participants felt that training community health workers on basic skilled pregnancy care will prepare them to assist during obstetric emergencies which will go a long way in reducing maternal morbidity and mortality. However, training opportunities were not always distributed fairly as healthcare workers with relatives and friends in power were more likely to get more training and skill enhancement opportunities than other healthcare staff. Participants cautioned against the impact on quality this could have and called for a more equitable distribution of training opportunities.

“The issue is that sometimes they organize trainings and it is the same set of people that keep going because they are connected. So, we need to organize trainings in such a way that it goes round, everybody has an opportunity to be trained not just the same people just because they are connected in one way or the other. So there is issue of training” (Senior Official, SPHCDA)

Respondents also considered quality of care in the context of cleanliness of the health centres. Quality indicated the capacity of PHCs to offer clean and hygienic care to women. Most health facilities were reportedly lacking consistent water supply and adequate toilet facilities. Policymakers and heads of healthcare providers did not consider PHC facilities to be clean and hygienic. They emphasized the importance of a clean and hygienic facility. Furthermore, participants expressed negative views related to apathy, abusive practices of healthcare providers, and the lack of basic and life-saving equipment. Women were mistreated when seeking care in PHCs and services were delayed. In some instances, women in labour were not attended to promptly either due to lack of commitment from providers or because there was no health care worker available. Most PHC facilities were not adequately equipped with basic supplies such as beds or surgical gloves or life-saving equipment such as devices for administering oxygen. This often meant that patients who were receiving sub-par care were discouraged from continuing to seek or even returning to the health facilities. Narratives linked the quality of service provided in equipped facilities to death rates with a wide belief that more maternal deaths occur in underfunded, under-equipped, and understaffed PHCs compared to equipped facilities. One respondent commented:

“We have either obsolete knowledge, obsolete equipment and obsolete skills and all these things affect the overall effectiveness of health services and the satisfaction we get from it in our health facilities.” (Senior official, PHCs, ETE)

Person-centredness and Coordination: This dimension of service delivery considers if services are organised around the individual with participation from them and their community in their own health care. While participants agreed that PHCs were lacking in infrastructure and quality service, they believed that maternal health services were person centred. They viewed services provided to patients as acceptable and responsive. Health care providers attested to being truthful and open in communicating with pregnant women, about their state of health. They made pregnant women aware of any pregnancy complications when detected and swiftly referred them to secondary healthcare facilities when necessary.

Heads of healthcare providers across different PHCs reported that they worked collaboratively with their teams of health care workers to discuss appropriate care plans and procedures for patients and to generally provide quality care for patients. Healthcare providers would, on occasion, refer women to better equipped private facilities when they were not equipped to provide quality care. A participant commented on services provided in PHC centres:

“So, there are a host of advises you can give to the woman if they come to the hospital [PHC] which TBA will not be able to offer. I have a host of colleagues, either in private or Irrua specialist hospital, around this place that I can call, so we can refer them to such people. Even the general hospital at Ewohimi, at Uhaikphen, the Doctor there is even a Gynaecologist. We have been collaborating in that area recently and we discuss a lot.” (Senior official, PHCs, ESE)

Coordinated service delivery is represented by an actively coordinated service network across different levels of care and involving multisectoral collaboration. Narratives of participants indicated some level of coordination of care which involved collaboration with other levels of care and other types of health providers. Participants commented on having an effective referral system, but there was no mention of provision for transportation to facilitate referrals.

“I don't think we have a lot of people dying in the PHC. The reason being that the referral system is working so when they get cases that are serious, they usually will refer. Most of those death will occur on the secondary facility and not in the Primary Health Care Centres.” (Senior official, Ministry of Health)

Accountability and efficiency: A key aspect of good service delivery is the effective and efficient management of health services. Participants expressed their discontent over the lack of cohesive and efficient management of health services in PHC centres. Various aspects of PHC such as infrastructure, health programming and staff wages were coordinated by different government bodies leading to a fragmented system. A fragmented system has resulted in uncoordinated governance which has amplified gaps in PHC infrastructure, human resources management, and access to basic medical equipment. Participants explained that these factors have implications for service delivery. For instance, health care staff are not deployed to PHCs based on need, therefore PHCs end up with far too many administrative staff while lacking key health care workers. Furthermore, health care workers are not adequately supported, supervised, and held accountable in ensuring that they carry out their duties safely and effectively. Participant believed that PHC management generally lacks transparency and accountability. A participant spoke to the issue of accountability in PHCs:

“There is so much fragmentation. So right now, we are trying to get it to be under one management, under one authority. So that there is one body regularizing everything, there will be one body in charge of discipline. So, somebody does not come to work, he is going to be disciplined. Somebody ensures that things are in place, there is security, there is equipment, there is manpower, there is funding. By the time there is a body in charge of all that, less interference from politicians, I think this PHC will actually work.” (Senior Official, SPHCDA)

Discussion

Service delivery is a key function of a health system and the WHO argues that it is crucial that service delivery is monitored and strengthened to meet minimum quality standards [18]. Service delivery of maternal health care services in rural Nigerian PHC centres has rarely been assessed through the WHO's key characteristics of good service delivery which provide a bedrock to examine and monitor service delivery. In this study, the authors interrogated policymakers' and heads of healthcare providers' notions of service delivery of maternal health care in PHCs.

Findings were organised in the context of WHO's key characteristics of good service delivery [18].

Maternal health service delivery connoted elements of a comprehensive yet selective model of service delivery. The significance of the model of service delivery is key. As Baum, Freeman, Lawless, Labonte, & Sanders, 2017; and Obimbo, 2003 describe, a comprehensive model of service delivery in PHC is holistic, acceptable, and operates beyond a biomedical understanding of health by considering social determinants of health. As a contrast, a selective model of PHC focuses mainly on curative services to fight diseases through medical intervention and not other factors such as social determinants of health [3,25]. Participants' narratives indicated that rural PHC centres went beyond disease treatment and management but also focused on other determinants of maternal health through services such as health promotion services, supporting community initiatives, and family and community involvement. Participants also considered services to be person-centred in the sense that PHC centres worked collaboratively with local communities to implement acceptable and appropriate services, albeit medically oriented.

However, PHC centres were lacking the resource capacity to provide basic medical care, while other tiered health facilities (secondary and tertiary health facilities) were better equipped. Responses suggest that even though PHC centres provide a range of services, PHCs operate within a selective approach to primary health care. These findings closely mirror existing findings from Abuja, Nigeria where PHC services were found to be adequate for services such as health and nutrition education and promotion and also home visits but was lacking in other services such as mental health services [26]. As Omuta et al., [8] explained, the Nigerian health system has long favoured curative and medical-oriented services (often the mandate of secondary and tertiary health facilities) over preventive services (the mandate of PHC). The vast proportion of expenditure on the nation's health care system is allocated to curative services, therefore PHCs remain largely underfunded to adopt a multisectoral, multidisciplinary and holistic approach to service delivery [8,27].

Participants generally depicted maternal care services in PHCs as inaccessible due to barriers of cost and geographic location. They agreed that despite claims of free maternal health services by the government, payment was required for delivery and other maternal health care services including costs for drugs and basic medical supplies. Participants were concerned that PHC maternal health services were unaffordable for poor women in rural communities. Indeed, Nigeria's Federal Ministry of Health in 2007 recommended that States implement free maternal and child health policies, however, the implementation of free healthcare policies in health facilities has been hampered by several pre-existing challenges including weak decentralization, inadequate funding of health facilities, inadequate physical infrastructure, poor governance and accountability, and shortage of healthcare staff [28,29]. While participants believed that eliminating user fees for PHC will increase women's use of PHC centres for maternal care, the experience of States in Nigeria have been contrary to this view [28]. Enugu State, one of Nigeria's 36 State, adopted free maternal health care in 2007 but has not recorded a sustained improvement in the use of PHC over time [28]. Results in Kenya, however, were consistent with participants' beliefs. Health facilities in Kenya observed that demand for health facility delivery

increased with the removal of user fees. The country's reduction in rural maternal mortality ratios was attributed to the high use of free delivery services among the poorer population in rural areas [30]. The authors stressed the importance of addressing pre-existing healthcare challenges prior to implementing free maternal care policies.

Additionally, respondents drew attention to issues of physical accessibility as a deterrent to women's use of PHC services, this issue has been identified in rural communities in Nigeria [12,31]. Service delivery can be made more accessible by either establishing viable transportation options to improve the accessibility of women in remote communities in rural areas or building more PHC facilities with a better coverage and within walking distance of the population of the catchment area. Also emerging from this study is the recognition of the role of socio-psychological factors such as beliefs, degree of participation in the healthcare process, and nature of patient-provider interaction, in people's ability to seek healthcare. This finding is corroborated by research that recognises that an individual's health outcomes can be determined by various factors including the degree of participation in the health care process, the degree of understanding of illnesses, and the nature of the interactions between patients and health care providers [32].

The WHO links the quality of service delivery to the effectiveness, safety, and person centredness of services [18]. Similarly, respondents' notion of quality of service delivery encompassed factors such as patient-provider relationships, hygienic conditions of PHC centres, availability of skilled health care staff, and infrastructural constraints. These findings reassert various views on the quality of service delivery in PHCs across Nigeria [33,34]. Respondents were generally displeased with the poor quality of maternal care services delivered in PHCs. They identified the massive shortage of skilled health professionals as a major deterrent to service delivery. In some cases, lack of a skilled health professional to assist a delivery has led to maternal deaths. This experiences were reflected in a similar study that concluded that the number of skilled health personnel present in a rural PHC facility determined its quality and consequently determined its rate of use for maternal health care [35].

Also emerging from this study are the optimistic views of participants on the potential for the drug revolving fund mechanism to improve service delivery of essential drugs in rural PHCs. The drug revolving funds were established in Nigeria in 1987 as part of the Bamako Initiative, this initiative was adopted by African ministries of health with the goal of revitalizing primary health care centres through organizing and sustaining efficient supply of essential drugs, among other things [36]. Policy makers in this study mentioned embarking on this cost recovery mechanism to improve access to drugs. While implementation of this initiatives may look different across countries, in theory, the initiative works by governments (or donor agencies) making an initial investment of capital to aid PHCs in the purchase of drugs, then PHCs fund future purchases of drugs through user fees [37]. Without intermediaries, drugs are expected to be cheaper for patients. However, faulty implementation strategies of this policy in some Nigerian States have shifted the burden of health care financing onto the poor thereby making essential drugs unaffordable and inaccessible. Moreover, internally generated revenues are not often regulated or tracked, thereby limiting transparency on spending patterns of PHCs [37].

Lack of accountability and efficiency of the PHC system, as participants indicated, stems from a highly fragmented governance structure of PHCs. A policy reform underway in Nigeria is designed to address issues of fragmentation by integrating primary health care under one authority. The Primary Health Care Under One Roof (PHCUOR) policy emphasises “one management, one plan, and one monitoring and evaluation” [38]. Under this initiative, the State PHC Development Agency (SPHCDA), a state level management agency, governs all aspects of PHCs and enhances access to funds for PHCs. Through respective SPHCDA, States can access the Basic Health Care Provision fund for allocation of funds towards the provision of essential drugs, maintaining health facilities, health care transportation, and the development of human resources for PHCs [37,39]. Studies in Nigeria have reflected on the constraints of implementing the PHCUOR policy in some States [40]. National policies do not automatically translate into policies at the State level as state governments are encouraged but not obligated to adhere to national policies regarding health. This has led to the partial implementation of functional aspects of the PHCUOR policy in some states resulting in an even more complicated governance structure [40].

Conclusion

Service delivery of maternal health care services in rural Nigerian PHC centres has rarely been assessed through the WHO’s key characteristics of good service delivery which provide a bedrock to examine and monitor service delivery. This paper sheds light on maternal health care service delivery in rural PHCs in Edo state through the views of policy makers and healthcare providers. Narratives suggest that even though PHC facilities provide a range of services, PHCs operate within a selective approach to primary health care. Participants generally depicted maternal care services in PHCs as acceptable yet inaccessible due to undue barriers of cost and geographic location and poor quality. This study revealed that while some key aspects of service delivery is found wanting in rural PHCs, there are promising policy reforms underway to address some of the issues. While a lot of these policies are works in progress, reflections from similar studies have noted that state governments are not obligated to adhere to national decisions regarding health, therefore there is likelihood for gaps in policies due to implementation strategies. It is important that health officials advocate for strong policies and implementation strategies. This also highlights the importance of active participation from intended beneficiaries of these policies who have a role in enhancing accountability of service quality and financial expenditure.

There are important limitation to this article. This study compares outcomes from similar policies in other African countries without accounting for confounding factors that contributed to the seemingly successful implementation of policies elsewhere, however, the authors presented relevant information to explain successes. Furthermore, the data from this study did not capture all aspects of a good service delivery due to the lack of relevant data, however, the authors thoroughly described the available data to contribute to a strong description of service delivery in rural PHCs in Edo State. The study aimed to capture views from a diverse group of stakeholders in Edo State, however, findings may not be generalizable to all of rural Nigeria as stakeholders’

knowledge of service delivery within communities might differ, so will each community's priorities and experiences with PHC service delivery.

Abbreviations

ESE	Esan South East
ETE	Etsako East
KII	Key Informant Interview
LGA	Local Government Area
PHC	Primary Health Care
PHCUOR	Primary Health Care Under One Roof
SPHCDA	State PHC Development Agency

Declarations

Ethics approval and consent to participate

The ethical clearance approval needed for the larger project was obtained from the National Health Research Ethics Committee (NHREC) on April 18, 2017 (reference number NHREC/01/01/2007–18/04/2017). All personal identifiers were removed to ensure confidentiality. Participants provided written informed consent prior to participating in this study.

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated and/or analyzed during the current study are not publicly available due analysis being underway for subsequent publications. They are available from the corresponding author on reasonable request.

Competing interests

We have no conflict of interest.

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Authors' contributions

FO and LN conceived and designed the study and coordinated the data collection phase in Nigeria. WI supervised the study and contributed to the study design. Qualitative data analysis and coding were carried out by OU and SY. OU drafted the manuscript, with input from SY, FO and LN. SY had the final responsibility to submit for publication. All authors read and approved the final manuscript.

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Additional files

Supplementary file 1. Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist which covers the reporting of studies using interviews and focus groups.

Supplementary file 2. Key informant interview guide.