

Geospatial patterns and determinants of choice of secondary healthcare facilities among National Health Insurance enrollees in Ibadan, Nigeria

PhD Thesis

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List of Abbreviations

ACA	Affordable Care Act
AMA	American Medical Association
FCT	Federal Capital Territory
GAVI	Global Alliance for Vaccines and Immunisations
GDP	Gross Domestic Product
GIS	Geographical Information System
GPS	Global Positioning System
HMOs	Health Maintenance Organisation
IDI	In-depth interview
LGA	Local Government Area
LMIC	Low to middle income country
MoH	Medical Officer of Health
NCH	National Council on Health
NDHS	National Health and Demographic Survey
NHIS	National Health Insurance Scheme
NHS	National Health Service
NPC	National Population Commission
NPHCDA	National Primary Health Care Development Agency
OECD	Organization for Economic Co-operation and Development
PAMAPS	Postgraduate Academic Mobility for African Physician Scientists
PHC	Primary Health Care
PPP	Public Private Partnership
SDCs	Socio-demographic characteristics
SSA	Sub Saharan Africa
USA	United States of America
UCH	University College Hospital
UCT	University of Cape Town
UI	University of Ibadan
WHO	World Health Organization

Definition of terms

Stakeholders: health care providers, health maintenance organizations and the

National Health Insurance Scheme

CHAPTER ONE

1. Introduction

Access to health services has been defined as the timely use of personal health services to achieve the best health outcomes (1, 2). Access to health services requires gaining entry into the health care system, (usually through efficient health insurance funding), accessing a location where needed health care services are provided (geographic availability) and finding a health care provider whom the patient trusts and can communicate with (personal relationship), (3). Improved access to health care improves overall quality of life. Factors that constitute a barrier to accessing health care include high cost of care, inadequate or no insurance coverage, lack of availability or inadequacy of health care facilities and services and lack of culturally competent care (2). Delays in receiving needed health services, financial burdens and poverty, preventable hospitalizations, disabilities, and mortalities usually result from barriers to access to care (4).

Studies have shown that access to health care services is multi-dimensional – physical, financial, availability and acceptability (5). Furthermore, each of these dimensions have both the demand (health care consumers) and the supply (health care providers) sides (5, 6). Demand-side barriers are issues such as limited household income, non-availability of means of transportation, lack of information on availability of services and providers as well as cultural beliefs. Supply-side factors are related to cost of service, spatial relationship between health facilities and users' residence, long waiting times at health facilities, inadequate human and material resources at facilities and poor relationship between clients and health care workers (6). These dimensions of care are also linked directly and indirectly to socio-economic and cultural determinants of access to health. For instance, access to health care is more likely to be different between immigrants and legal citizens (7, 8), between the poor and the well-off (9) and in environments where especially women have limited freedom to access available health services (10-14). Access to health services also vary based on race, ethnicity, socioeconomic status, age, sex, and residential location (15). Barrier to access to health services can also be summarised into socio-demographic and cultural factors, poor public physical infrastructure and poor technical and functional qualities of care at the facilities (10, 16-18). Previous study findings have shown that there is an association between each of these dimensions and health outcomes. A study by Karra and colleagues using a data set from low

and middle income countries, averred that relatively small distances from health facilities were associated with mortality among children. It also lower the odds of facility delivery among pregnant women especially when distance to facility was greater than 10 kilometres compared with those who lived within 1 kilometre of the facility (19). This corroborates the findings of Adebowale and Odjo in a Nigeria NDHS 2013 survey which shows that access to maternal and child health care at antenatal, delivery and post-delivery services increases the chances of survival among infants (20).

As outlined in a study finding in the use of primary health care (PHC) centres by pregnant women in a rural area in Nigeria by Ntoimo and others, factors such as poor roads, difficulty with transportation, long distances, and facilities with limited opening hours were found as barriers to access to care. Also, in the same study, perceived poor quality of care include inadequate supply of drugs and other consumables, poor attitude of health care workers, and insufficient number and non-availability of health care workers in the facilities. Others were long waiting-times at the facilities, inability to pay for health services even when the cost of care was moderate and poor partner support (10). Similarly, an earlier study also conducted in Nigeria asserts that access to health facilities can be affected by shortage of vehicles and poor road infrastructure which requires individuals to use difficult modes of transportation such as the use of bicycles, mules and the likes resulting in great difficulty reaching health facilities (16). Unaffordable costs of transportation is a disincentive to accessing care. It is also compounded by a lack of medical supplies, surgical theatre rooms, drugs, blood and other medical supplies, insufficient beds, shortage of rooms, irregular supply of water and electricity, which adds to delay in service provision. This is worse in rural areas (16, 21). These findings were supported by an earlier study conducted in Nigeria (22).

Long waiting time as a barrier to access to care even when health insurance is available was reported by other similar previous studies (23, 24). It has been averred that the duo of a weak health system and poor access to available health services lowers quality of life (9).

Relative to children whose mothers reported no barrier, risks of under 5 mortality is high in children whose mothers had cultural, socio-economic, and physical barriers to health care services (22). Also, inequality in the distribution of health care facilities is a significant factor affecting access to health care services (25), as well as mortality differences in childhood

survival and mortality. This is more pronounced in rural areas of developing countries characterised by poor road infrastructure and difficulty in transportation system (21, 22, 26). Lack of or a delay in access to health services could worsen illness prognosis and negatively influence future socio-economic capabilities of children (27).

It is noteworthy that factors associated with barriers to access do not occur in isolation, they are usually interconnected. Thus, an individual with one or two known barriers to access is more likely to have other barriers to access, which may not be known but exist all the same (16, 28).

1.1 Access to health care, a key determinant of health outcomes

Access to health care is an important factor determining health outcomes. Various aspects of access to health care services influence choice, and determine the degree of, and differences in, access to health care. The magnitude and nature of determinants of access differs between and within countries, between the poorer and the wealthier, and sometimes along racial divides (19, 29-31). A conceptual framework by Peters et al. grouped these aspects of access into four main dimensions, which are inter-dependent to varying degrees based on prevailing contextual factors (5).

1.2 Dimensions of access

The dimensions discussed in this thesis - availability, geographical accessibility, acceptability and financial accessibility are the key principles of primary health care (32). Thus, when it is well implemented, PHC system could address these dimensions of access. Each of the dimensions influence both the demand and supply sides of health care (5) (Fig 1). Primary Health Care is a unique concept. It considers and efficiently harnesses the roles and benefits of other sectors outside of the mainstream health system as co-determinants of individual and population health. Different from specialized care centres, PHC system by design, especially its spatial location closer to the communities, positions health care facilities and services to be more available and accessible to people in the communities (33). In this way, it has the potential to minimize the physical barrier to access to health facilities and services and thus, facilitates easier and early entry into the health system compared with higher levels of care (32). A system

based on the principles of PHC has the potential to minimize inequity of access (34) prevalent in developing countries (35).

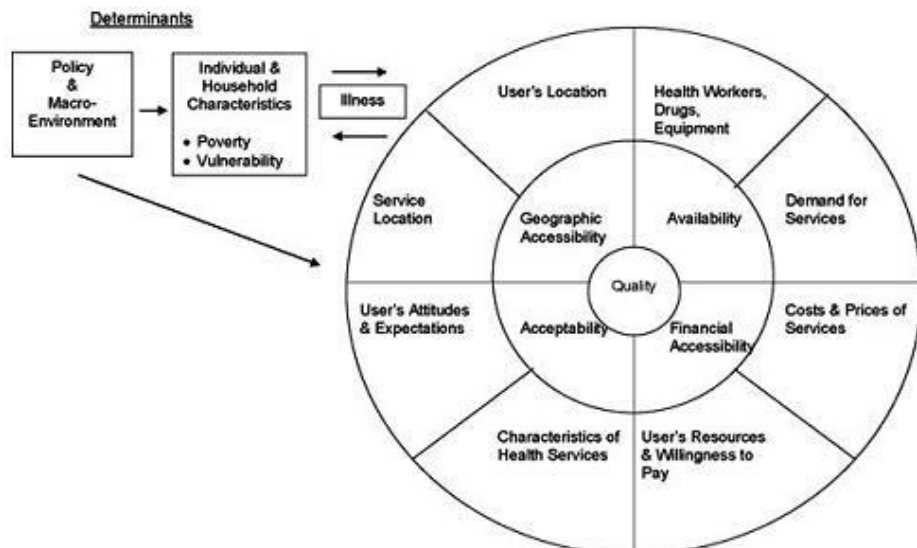


Fig 1: Conceptual framework for assessing access to health services (5)

1.2.1 Geographical accessibility

Geographical accessibility defines the extent to which distant facilities are patronized by the poor, especially in rural areas where inadequate numbers of health care facilities are more spread out. This results in greater lengths of time to seek healthcare, and associated opportunity costs and high costs of transportation, which negatively affect the poor (5, 36). These long distances also adversely affect the management of materials and drugs supplied to affected facilities. As a result, affected residents may be less likely to patronize such facilities, ultimately resulting in poorer health outcomes (19, 26, 37). In urban settings, long distances are often associated with heavy traffic and delays in getting to healthcare facilities with negative effects on outcomes of health similar to that obtained in rural areas (26, 37). These challenges with respect to spatial distribution of health facilities, health, human and material resources in the facilities and access to the facilities are more prevalent in low- and middle-income countries (LMIC) compared to high-income countries (19, 38).

1.2.2 Availability

The challenge associated with availability as a dimension of access is not limited to the physical availability of health care facilities, but also includes availability of drugs and commodities, and health care personnel. In LMIC especially, an inadequate number of health care facilities, inadequate and unfavourably skewed health care workers to population ratio, dilapidated and poorly equipped health care facilities are common. These are in addition to a poor drug and other consumables supply in the presence of a growing burden of diseases (39, 40). It is characteristic of consumers to bypass poorly equipped health facilities, or those where opening hours are short, and travel further to seek care in better-equipped facilities (39). In many low-income countries, usually characterized by high burdens of disease (41, 42), heavy workloads are not uncommon which worsens the capabilities of the available few and poorly resourced health care facilities to deliver necessary health care appropriately. This may result in long waiting times, and eventual lack of, or poor access to, available health care (23, 24). Heavy workload could result in inefficient service delivery, medical errors, which could be fatal, and poor satisfaction with rendered care among health care consumers. This affects the poor the most, since the more expensive health facilities are usually financially accessible to the well-off few (36).

1.2.3 Financial accessibility

Financial accessibility is arguably the most important of the dimensions of access to care. Public financing of health systems in the majority of the countries in low-income settings is poor. For instance, the World Health Organization (WHO) recommends that 15% of the total budget of a country should be allocated to the health sector. In many low-income countries, especially in Sub-Saharan Africa (SSA), allocation to the health sector is characteristically far below the recommended WHO target, with the exception of a few countries such as Ethiopia (16% in 2014) and Kenya (13% in 2014) (43, 44). In Nigeria, allocation to the health sector of the total government expenditure in 2016 and 2017 were 4.13% and 4.17% respectively (45, 46). The picture is different in the majority of high-income countries where allocation to the health sector is usually well above the WHO recommendation. Consequent to poor funding, the health system is weak in many low-income countries characterized by poor physical infrastructure and equipment of facilities, a poorly managed supply chain of drugs and other consumables, and a demotivated health workforce plagued by long periods of non-remuneration in wages and other benefits. Coupled with this situation, the prepayment model

of financing health care either in the form of tax-funding, social or private health insurance is limited in many low-income countries. Where they are available, they are poorly organized and unaffordable to people working in the informal sector who do not have a steady income, and thus are usually excluded (47).

As a result of poor financing of the health system by governments and an absence of prepayment schemes, people in low-income settings, the majority of whom are poorly paid (44) health care costs through out-of-pocket methods (48, 49) associated with increased morbidity and mortality due to non-use or late use of available health care services (4). In addition to the direct costs of health care, other costs such as transportation fares in the course of seeking care for the ill and their accompanied relatives, loss of income resulting from the duration of time spent seeking care adds to the costs. Sometimes, people borrow money and/or sell properties to finance health care costs, inadvertently worsening the poverty level of affected individuals even after the illness (50).

The cost of service, as a major barrier to access to care, is a recurring issue across all regions of the world (44, 51). The picture is worse in sub-Saharan African countries (50). In a recent study of United States of American (USA) patients, the cost of care as a factor of unmet health needs was reported in a cross-national population-based survey by Chou and colleagues (29). Mahmoud and colleagues, in another study of adults with diabetes in the USA, reported that health care access, utilization and health outcomes differ by race and ethnicity (30). These findings were corroborated in a recent study by Wolf et al that affirmed racial differences in cancer diagnosis and treatment between blacks and whites in the USA (31). Financial capabilities has been emphasized as a factor of access to health care services within and between countries and between the rich and the poor (52). The magnitude of this inequity of access and health outcome differs from country to country, amplified in countries with less or no form of publicly funded health care (50). Overall, affordability of care is an underlying factor responsible for the observed inequity of access to health care and therefore, health outcomes. The poor and those who do not have health insurance, have less access to health care due to financial difficulties resulting in their not seeking health care, or seeking it late (4, 47).

1.2.4 Acceptability

Study results differ on the influence of culture and religion on acceptance of available health care services. While some posit that culture and religion do influence the uptake of services (12, 53), others suggest that factors such as economic dependence on male partners, the attitude of health care workers and distance to available health care services rather than culture and religion are more influential factors in the acceptance of available services (54). However, a study in Northern Nigeria emphasised the effect of cultural and religious factors on health seeking behaviour. Where people, especially women, are constrained by prevailing cultural and religious factors in seeking care, choices are limited to custodians of decision making such as spouses, relatives and other recognised authorities in affected communities (12). This is also in line with a WHO Report on Primary Health Care (PHC) in 1978 and in a recent 2018 celebration of the 40th anniversary of the concept of PHC (33, 55) which supports the claim that culture plays a significant role in the potential acceptance of available care. Anecdotal evidence from different regions of the world especially in LMIC also supports this view. Likewise, satisfaction with the perceived quality of care, costs of care, distance and education have all been reported to influence acceptability (56, 57). Factors associated with convenience of seeking care such as flexible opening hours, and the interpersonal relationships between health care workers and clients have also been cited in other studies (58). Quality of care is an important component of all the four dimensions of access to health services; it is one major reason for the utilization or otherwise of available health services (6, 10, 59). However, it is grossly deficient in many LMICs (6).

1.3. Universal Health Coverage, WHO Health System Framework and The Building Blocks

To achieve UHC, the aforementioned principles of PHC, which are also the dimensions of access to care, are as summarized in three-pronged action areas which are outlined as, a need to extend coverage to more people, offer more quality services as a benefit package and, make cost of care affordable. Affordability of care could be achieved by countries paying a greater part of the cost of care for its people (60). Affordability could also be achieved through prepayment methods for financing health care as it is available in social health insurance schemes (50). Fig 2 below

Towards universal coverage

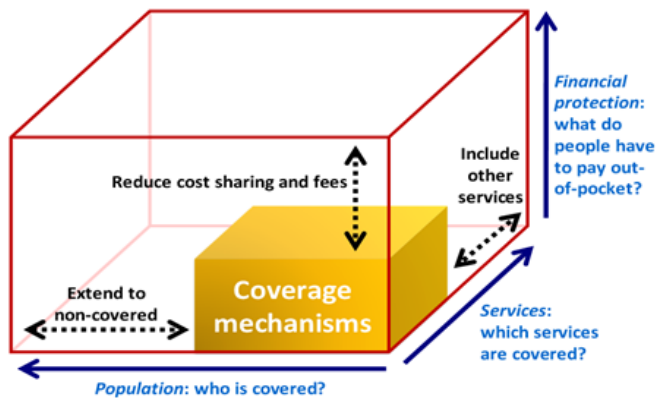


Fig 2: Three Dimensions of Universal Health Coverage

The World Health Organization (WHO) describes a health system as an entity that consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This is not limited to physical facilities designated as health care facilities in both the private and the public sectors but also includes other social determinants of health such as education, access to adequate supply of potable water, and balanced nutrition among others. It also includes individuals such as mothers taking care of sick children, organizations and actors in the health insurance industry, experts and organizations in behavioural communication change in order to enhance good health among others. Actors within the core areas of direct health services and product deliveries and those who indirectly provide services, collaborate to make the entire system function, and deliver the expected objectives (60, 61).

A key component of the health system framework is that it is people-oriented. The various areas of operation of actors such as individuals and organizations in the system has been divided into different compartments referred to as the building blocks of the health system. These blocks are service delivery, human resources, information, financing, medicines and technologies, and leadership and governance. Collectively, they are the health system building blocks (61). These building blocks comprise what is referred to as the 'hardware' of the health system (62). The dynamic architecture and interconnectedness of the health system building blocks is as shown in Fig. 3. (61).

To enable it to achieve its objectives, the health services component of the framework must be able to deliver effective, safe, quality personal and non-personal health interventions to those

who need them, with minimum waste of resources and in addition, it must also be able to provide an effective health financing system which should be able to raise adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them. The framework must of essence have a workforce that is responsive, fair and efficient to achieve the best health outcomes possible, given available resources and circumstances.

Also, the production, analysis, dissemination and use of reliable and timely information on health determinants, health systems performance and health status require a well-functioning health information system for the health system to achieve its goals. Another attribute of a strong health system that is capable of fulfilling the purpose of its establishment are access to equitable essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness that are scientifically sound and cost-effective. Coordinating all these blocks is the leadership and governance of the health system. This involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition building, the provision of appropriate regulations and incentives, attention to system-design, and accountability (61).



Fig. 3: The dynamic architecture and interconnectedness of the health system building blocks (61)

Poor funding of the health system is a major barrier to access to care (4). Financing health care by social health insurance (SHI) has the prospects of reducing barriers to access to health care services by making funding of the health system better and thus, an improved availability of medical supplies such as drugs and other consumables. It could also improve procurement and

maintenance of medical equipment, training and retraining of health care personnel, research and development, appropriate and timely remuneration of health personnel at the facilities (50).

Improved funding of the health system could also lead to an increase in the number and spatial distribution of health facilities which overall could reduce the hitherto long distance between consumers and health facilities, thereby improving physical access to health facilities and the services rendered within them. Overall, it could minimise inequity of access to care that is common in developing countries of SSA countries (63, 64).

SHI facilitates risk pooling and sharing across different socio-economic groups and thus, lessen catastrophic health expenditure among the poor especially (65). Thus, SHI has the potential to impact on the health seeking behaviour of individuals and families especially among those who are in the low socio-economic stratum and whose economic situation is a recurring barrier to access to needed health care services (50).

However, poorly or inappropriately designed health insurance schemes could also be a barrier to accessing health care. In a survey of health insurance schemes across some selected high-income countries, design of health insurance schemes was identified as a cause of the barrier to access health care services (66), the extent of these barriers varies as do the design of the schemes across study countries (66, 67). Similar findings about the potential barrier that certain design features of health insurance could constitute was reported in a study involving some selected SSA countries (68), with some of the designs queried as likely unsustainable in the long run and thus could constitute a form of barrier to access eventually (69, 70). Ironically, activities of insurers (71) as well as poor attitudes of health care workers to the insured (10, 71) could also be a barrier to access to care in some instances.

The NHIS of Nigeria was established close to two decades ago. Presently, population coverage is low (63). In addition, a previous study on the NHIS has shown a grossly skewed distribution of enrolees across health care facilities in the six (6) states of the southwest geo-political zone (72). Factors that were responsible for this observed pattern are presently unknown. It is desirable to assess the impact of some of the design features of the scheme, the influence of the stakeholders in the health insurance industry of Nigeria and health facility availability. The

factors of production and distribution of health services, with a focus on how these affects the factors of the various dimensions of access to health facilities, will also be assessed. Findings will assist in repositioning the scheme for better performance. It will also assist other countries with a plan to implement similar schemes as a guide to establishing sustainable, effective, and efficient programmes.

CHAPTER TWO

2 Literature review

Factors that determine choice of health care facilities are many and can be broadly grouped into the patient (or demand side) and provider (supply-side). These factors play different roles in the same individuals at different times and in different health need situations. In essence, they inter-play all the time. Along the spectrum, the issue of equity of access to care is the concern of global policy makers. And as such, strategies to minimize inequity of access especially in developing countries of the world is the rationale behind certain concepts such as the PHC, the MDGs and the SDGs. These concepts and their contents are related to achieving the same goal of ensuring equity of access to needed health care services. Unfortunately, many of these concepts have not been well implemented in the countries that need them most (63).

2.1 Primary Health Care, Millennium Development Goals, Sustainable Development Goals and Universal Health Coverage

Efforts of global health leaders to improve equity of access to health care is the rationale behind the emergence of different health care delivery concepts. At a global health leaders conference in 1978, at Alma Ata, the concept of primary health care (PHC) was adopted as a strategy to enable the actualization of the right to care of all people everywhere, with the slogan of ‘health for all by the year 2000’. Rather than a focus on disease entities, its focus is on individuals and communities to empower them for their wellbeing throughout live. Not only does PHC addresses the health needs of individuals and communities, it also takes into consideration the socio-determinants of health. Due to these attributes, especially the community-oriented approach, it has the potential to minimize inequity of access to care. PHC has been accepted as the most efficient and effective way to achieve UHC and the health-related SDGs. PHC as conceptualized in the 2018 Astana Declaration focuses on three critical components, namely, primary care, multi-sectoral collaboration and community engagement (33). With strong political commitment, most countries were able to make progress in achieving the goals evidenced by significant improvement in target health indicators (73).

The impact of the contributions of a PHC system is evidenced in countries that have made good progress towards attainment of universal health coverage (UHC). What is common to these countries is a responsive and effective PHC system coupled with stakeholders’ support at the

community levels. Typical example in Africa are Rwanda (74) and Ghana (75). Similar reports were made about Brazil (76), as well as Cuba, New Zealand and The Islamic Republic of Iran (32). Celebrating the 40th anniversary and revitalizing the concept of the PHC of the Alma-Ata Declaration, global health leaders and stakeholders reaffirmed primary health care as the most effective and efficient means to achieve universal health coverage. Forty years after the first conference, the potential of a PHC system to reduce inequity of access to care was re-emphasized at the Primary Health Care (PHC) Conference at Alma Ata, Kazakhstan (formerly Kazakh, Union of Soviet Socialist Republic). At the meeting, global health system actors, for the second time, renewed their commitment to the concept (of PHC) in addressing the challenges of limited access to health services and the associated poor population health outcomes (33).

The concept of PHC has the potential to enable individuals and communities to have access to needed health services that are effective, efficient and of good quality, delivered in such a way as to suit individuals and their cultural environments. The elements of PHC are assembled in such a way so as to address health and non-health determinants of health and wellbeing so as to take care of the physical, mental and social health of individuals and that of the communities. It has been confirmed that factors outside the health sector (such as, water and sanitation, education and economic growth are associated with profound reduction in child mortality. Achievement of health – related Sustainable Development Goals (SDGs) needs well-implemented and effective PHC programmes (77).

A properly implemented and managed PHC will ensure the attainment of UHC, described as a mechanism to ensure equity of access to quality health and devoid of catastrophic expenditure that could put individuals and families into poverty (33). Previous studies have shown that without an effective and efficient PHC system, health related component of Sustainable Development Goals and UHC would be difficult to achieve (76).

By the year 2000, United Nations member states adopted the Millennium Development Goals (MDGs) in furtherance of the efforts to minimize inequity of access to health care. The MDGs are inter-dependent, they all influence health and vice-versa. Primarily, these goals are an addition to the goals of the PHC, with consideration of emerging and re-emerging health challenges (78). At the end of its period of implementation in 2015, different countries in Africa especially had achieved the targets to varying degrees, and different goals were achieved at different levels (79). The latest strategy is the Sustainable Development Goals (SDGs). In like manner as the previous two concepts, its focus is to improve equity to meet the health care needs of especially women, children, and other vulnerable groups. Its agenda builds on the MDGs with the aim to achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all (78). Investment in the health system especially in the PHC will go a long way in achieving equitable access to health care and UHC (80, 81).

The goal of the Nigeria National Health Policy is to provide equitable access to health services at the primary, secondary and tertiary health care levels for all Nigerians. The Policy has adopted primary health care as the framework to achieve improved health for the population (82, 83). This is more appropriate to enable the country to address its inadequate health and social determinants of health. According to the latest data set available from the NDHS, the percentage of the population using an improved water source is 59.6%, while that for sanitation facility is 34.0%. In like manner, only 55.6% households have access to electricity power supply and 7% of woman have access to all the three (radio, television and newspaper) media sources, compared with 15% of men (82). Life expectancy at birth in Nigeria currently is 54 years, maternal mortality ratio is 530 per 100,000 live births and infant mortality rate was 88 per 1000 live births (63).

Nigeria operates a federal presidential system of government, with three tiers of governance of the federal, state and the local government. Characteristic of a federal system of government and arrangement, the federating units are autonomous in certain areas including the health sector (84). By constitutional arrangement, the local government authorities manage the primary health care system, the state manages secondary care, while the federal government is in charge of tertiary health care (26, 85-87). Generally, the health system in Nigeria is weak in all six building blocks of the system. The primary health care system is the weakest of the three levels of care (63, 86, 87).

2.2 Funding and managing resources in the health system

The World Bank classified Nigeria as a Lower middle income country. The current domestic general government (public) health expenditure per capita is \$10.3 per annum. This compares with the average of \$27.4, \$25.5 and \$248.2 in SSA countries, lower middle-income countries and upper middle-income countries respectively. However, the value of the same indicator for high-income countries is \$4,140.5 (44). In the same trend, the percentage of year 2020 budget allocated to the health sector out of the total for Nigeria was 4.5%. However, evidence shows that there is usually a disparity between the amount allocated and the actual amount released; the latter is usually lower than the former (88). To compound this problem, the capacity to utilize the total amount of funding released is poor resulting in unutilized funds, which is an indication of failure to implement health interventions. In addition, it is observed that the implemented tiers of governance in the country usually obtains far less of the total amount of money made available. With regard to this, available data indicates that the federal government receives about 70% of the total released, while the states and the local governments received less than 30% and 10% respectively (44, 89). Currently, more than 75% of Nigerians pay through out-of-pocket (OOP) for health care, while it is 13.7%, 36.7% and 56.2% in high income, SSA and lower middle-income countries respectively (44). The majority of the people in Nigeria are poor, living on less than \$2 per day (63).

2.3 Factors influencing choice of health facilities

The literature review on factors that influence choice of health facilities will review patient and provider characteristics as outlined in a systematic review by Victoor et al (90). Studies have shown that the choice of health care facilities by individuals and families is determined by the interplay between patient and provider characteristics (90-92). However, what influences a choice in one particular event may not do so in another event, as prevailing contextual factors play a vital role. On their own, factors that influence the choice of provider (on both the demand and the supply sides) could delay the actual delivery of care to those who need it. Studies have demonstrated delay in receiving care as an important determinant of health outcomes (4, 11, 13, 19). Currently, three phases of delay are recognized: phase I (decision to access or not to access care), phase II (delayed presentation due to factors such as travelling long distances) and phase III (Provider or health system factors that could result in service provision much later than it is appropriate even after the client has presented at the point of care) (13). All the three phases of delay negatively impact health outcomes. The literature review will, where relevant, discuss the nature of delay that results from patient and provider characteristics.

2.3.1 Patients' characteristics influencing choice of health care provider

While published study results differ on the capability of patients to choose, either actively or otherwise, what is known is that the influence of factors that determine choice of a health care facility or a provider varies depending on individual socio-demographic characteristics. Other factors are the type and severity of illnesses (including the presence or absence of co-morbidities), cost of health care (including travel costs), whether or not the affected individual is on a health insurance plan (92) and whether the country's health insurance scheme allows individuals to make a choice of provider. Nevertheless, improvement in access to health care will improve general health outcomes (24, 93).

While some studies suggest that patients actively choose health care providers evidenced by demonstrating good understanding of observable physical characteristics of facilities and other factors such as distance, cost, presence or absence of multiple morbidities among others (71, 90, 94-97), a substantial proportion of patients do not consider choice to be very important (90, 96). This is partly because they do not believe that there is any difference in quality between

providers (90) or may be influenced by a third party and thus may not choose actively (71). Those who support active choice of health facilities claimed that patients who actively choose, possess enough knowledge about the quality of available health care providers, are able to compare them, and thus use this information to match health care facilities and illness conditions (39, 95). This is also the case when they believe that there is a difference in the quality of service across providers (92). To inform decisions on the choice of a provider, patients need to be well informed about the quality of providers, as described in an adapted Donabedian Conceptual Framework of structure, process and outcomes of care (98) (Fig 11).

Many factors have been ascribed to influence the choice of health care providers. Reliance on physician advice/referrals, advice of friends and relatives and patronising the nearest health care facilities are some of the means of choosing health care providers. Socio-demographic factors such as age, sex, educational status and socio-economic status, cost of care, severity of illness, existence of multiple morbidity/co morbidity and past experiences with a provider all influence choice in different ways. Cost of care and ability to pay play a role in the active search for a provider (10). However, for those who are on a health care plan, cost of care may not necessarily be an incentive in the search for a preferred health care provider as health insurance organizations partly determine the providers that are available to patients (71, 90).

Active choice of health care providers is more likely with highly educated, younger patients and those with high socio-economic status (92, 95), as well as in those without an existing satisfactory relationship with a provider (99). A patient's previous satisfactory experience with a provider will increase the likelihood of choosing that provider in the future, while this is unlikely to be so if the experience was not satisfying. Family, education and other associated factors have a lot of influence in the choice of provider (100). Severity of illness, patient and provider characteristics among others, have also been cited as factors that influence the active choice of providers (101). Phase I delay is generally ascribed to the factors that influence choice and that, more often than not, especially in LMIC result in delays in seeking care and choosing a provider.

2.3.2 Health care system characteristics influencing choice of health care provider

Although spatial factors may influence the choice of a health care facility, non-spatial factors also play a role, and studies have shown that proximity does not necessarily favour a health facility being chosen over those that are further away (39, 95). This observation points to the importance patients attach to the responsiveness of a health system even at the micro-level of a health care facility vis-a-vis the structural and procedural aspects of care, in addition to the quality of interpersonal relationships and the level of trust and other elements of functional and technical qualities of care between health care personnel and patients in the process of administering care and the health system as a whole. These have been cited by studies as some of the most influential factors in the choice of a health care facility or a provider (95, 102-107).

Generally, patients are more likely to patronise nearby health care providers rather than to seek care further away. However, when perceived quality health care that is essential for recovery from an illness, is further away, accessing quality health care becomes a priority and distance becomes less significant (92, 95). The importance of perceived quality of care has been demonstrated by studies that have shown that health care consumers who perceived quality of care as low, tend not to choose health care facilities with the lowest time cost in favour of facilities which are further away, but perceived as being of better quality, a phenomenon referred to as 'by passing'(39).

When individuals have to travel further to receive care, delays on the road because of many factors such as unavailability of motorized vehicles, poor terrain and, in cities, traffic congestion are common. This is often the case in many LMICs (26). The implications of this on the outcome of care are usually undesirable (37). In addition, when the indirect costs of seeking care (transportation and loss of productive time) on the part of the patient and relatives outweigh the benefit, it could result in delayed care utilization or not seeking care at all with consequent poor health outcomes, poor health status and productivity (4, 12).

However, in low-income countries, where the availability of quality health care resources is limited, health care consumers either do not have a bypass option, or only have access to health facilities that are far away (26). Distance travelled to access health care services has also been shown to be influenced by the perceived severity of the illness, as patients with multi-morbidity usually require 'more complex treatment plans and medical care' (97). This may compel clients

to access such services at a considerable distance from home, and specifically in facilities that have the resources (human and material) to manage multiple ailments applying integrated management of such illnesses (108) effectively and efficiently. There is evidence that, improvement in geographical access to health care could enhance general health outcomes (93). Factors such as the spatial distribution of facilities, distance from residence to facility, the condition of the roads, availability and cost of transportation among others come into play and influence this aspect of choice in health care seeking among patients (19, 26). These are the main features of phase II delay.

Irrespective of where they are located, rural or urban, the importance placed on different provider characteristics varies with different contextual factors. Three main factors that must be considered are structural, process and outcome factors (90). Of structural factors, the first and the most important in making a choice of provider is whether the provider is available or not (26). In many LMICs, especially in the rural areas, availability of health care providers is a common challenge (86). If health care providers are available, other factors that need to be satisfied to enable patients to derive benefits include accessibility. Accessibility could be determined by costs of care, distance from the patients' residence and the health care providers' attitude (19, 24). Other provider' characteristics are usually a reflection of the responsiveness of the health care facilities. They include the availability, adequacy and functionality of medical diagnostic and therapeutic equipment, drugs and other consumables, as well as the competence of available personnel. Although by-passing a facility to go to a higher level one could be a manifestation of deficient quality factors, it could also be a result of a poor referral system in a country. Poor access at the point of care is not unusual in many LMICs. Characteristically, it comes in the form of lack of, inadequate and/ or non-functional equipment, material resources, drugs and other consumables. These are also coupled with inadequate number and skills of available health care personnel in a poorly managed micro-health facility. Facilities with long opening hours, a clean environment, ease of geographical access and a reasonable patient waiting time have been shown to increase satisfaction with the facility and a perceived high quality of care among patients (109-112).

Gronroos described service quality as consisting of both technical and functional dimensions of care (17, 18, 113). Technical quality is the value of the actual product of service provided and whether it fulfills specified standards, while functional quality describes how the service

products are delivered that is, the value of the interaction between the patient and the health personnel during health care service provision. The quality of the process of services provided is the main thrust of the process of care. This could be measured by health care personnel politeness, responsiveness to patients' needs, speed and care of service provision and professional appearance among others (114, 115).

Studies have shown that both patients and relatives place substantial value on the interpersonal relationship between them and health care workers, and the perceived attitude of health care personnel matters as an important factor that could influence the choice of providers (17, 102, 104, 105). When health care workers make efforts in establishing rapport, it positively affects other areas of care such as sharing of useful information in the course of service delivery, patient-provider joint decision-making, continuity of care and perceived or real quality of interaction (71, 116).

Efficient time management as a component of the process of care may encourage patients' commitment to follow-up appointments (117). Resource alignment, increased operational efficiency and improved process of care delivery are some of the factors that influence patient waiting times. Inability to manage these properly could lead to long waiting times especially in countries that seek to achieve UHC (118). It is known that patient satisfaction is a proxy for quality of health care (119, 120). Poorly delivered services characterized by long waiting times, perceived poor attitude of health personnel, uncomfortable waiting areas, lack of respect for patient preferences could be causes of service dissatisfaction and perceived poor quality of service among patients (118).

Influenced by socio-demographic and disease characteristics, and some other factors such as attitude, beliefs and knowledge, individuals attributes influences satisfaction differently (121-124). In resource constrained environments where there is a limited number of providers, as is often the case in low to middle income countries, people are limited to choosing among the few available health care providers. Individuals who have a health insurance plan could be compelled to choose from among a limited number of providers, (24, 71) and they are less likely to choose a particular provider especially when they have to make co-payments to enable them to use certain benefit packages from that provider (125).

More often than not, poor access to available care in the course of service delivery can result from work-overload, especially when a health facility, known for its quality of care, receives more than the number it can accommodate at a time (24, 39). Challenges with access to care can also be the experience when beneficiaries of a health insurance scheme or policy do not fully understand the benefits, and thus receive less than optimal or no health care service despite adequate financial coverage as provided in the insurance policy (24).

Choice of a health care facility and/or a provider is also influenced by the outcome of care and other benefits associated with facility delivery (126). The achievement of the desired outcome of care is the ultimate goal of patronizing health care providers. These could be measured by full social restoration/rehabilitation, disabilities or mortality (98). However, studies have shown that while choosing a provider, patients generally place high value on the structure and the process characteristics, rather than the outcome characteristics. This has been confirmed in previous studies (127, 128).

2.3.3 Geographical Information Science in health systems planning and management

There have been many studies on socio-ecological factors that determines health and health seeking behaviour including choice of health care facilities (5, 19, 26, 37, 90, 92). Most often one dimension of these factors is considered, and in a few times, a combination of them are studied to enable a better understanding of their influence on each other and how these dimensions independently and, jointly influence choice of health care facilities (5, 10). While some previous studies have investigated individual and household factors that determine health seeking behaviour and choice of health care facilities, (13, 26, 90), others have explored factors such as the distance between health care consumer residence and health care facilities (19, 37). Yet other studies were mainly about the quality of health care facilities measured by the availability and functionality of equipment, drugs and other consumables, support services, availability and competency of health human resources and as well as style of delivery of available health care services (129, 130). Others, and mainly in the developed economies, have considered the geospatial distribution of health care facilities within a defined geographical area as a factor that influences choice of health care facilities (97, 131-133) There have been attempts to combine two or more of the earlier approaches in conducting studies of determinants of choice of health care facilities; Gabrysch and colleagues in a study on the use

of skilled birth attendants among pregnant women in Zambia investigated the effect of distance between residence and health care facilities and the likelihoods of use of skilled birth attendants for delivery (132). Acharya and colleagues employed a similar approach in determining access to thrombolytic therapy among people who suffered a stroke in a particular county in Missouri, USA. While some GIS –based health systems research focused on the spatial distribution of health care facilities (133-135), a few others went further to combine this information with mapping the capacities of facilities in terms of available resources in assessing their capabilities of delivering necessary health care services (132). This is corroborated in a scoping review of geographic accessibility to maternal health care services, analysis of risk factors and their association with maternal health outcomes in Zambia by Makanga and colleagues (136).

Salehi and Ahmadian in a study in Iran not only mapped the distribution of health care facilities and their capacities to deliver appropriate maternal health care services but also mapped maternal health outcomes in each of these facilities in relation to the health service delivery capacities of each of them (133). GIS technique can also be employed to map spatial distribution of morbid states in relation to variables of interest as was done in a South African study where spatial distribution of multi-morbidity was mapped in relation with socioeconomic status in the Provinces (97). Similar studies were conducted in mainly developed countries in more recent times on spatial pattern of morbidity within different regions and level of health care funding in England by Kontopantelis and colleagues (137), and in the Netherlands, spatial distribution of pertussis in relation to age groups was carried out (138).

In Nigeria, studies that considered some dimensions of various disciplines that could affect choice and utilization of available health services and its probable impact on health outcomes are not many. Stock, in a study conducted in a Northern State of Nigeria demonstrated how increasing distance to available health care facility negatively affects uptake of health care services. In the same study, perceived severity of an illness and the quality of available services in a faraway facility might make distance of less effect (12). In like manner, a national household survey on the influence of distance, facility infrastructure, availability of health personnel and competency, availability of drugs and other consumables in the uptake of health services was conducted in Nigeria (85). Nwosu and colleagues in a study on determinants of antenatal care utilization among pregnant women in Southeast Nigeria State, considered both patient and provider characteristics as factors of influence in the choice of health care facilities

(139). In a nationwide study among women attending antenatal and post-natal clinics in selected facilities in Nigeria, Okonofua and colleagues worked on the perceived quality of care that influenced choice of health care facilities (59).

In another study conducted in 2017 in Abeokuta, in Southwest Nigeria to assess the perception of quality of care received in selected facilities, Oredola and Odusanya investigated majorly domains of structure, process and outcome of care of the provider as factors that influence choice of health care facilities among health care consumers (140), and very recently, Wojuade and Fadare worked on the proportional distribution of health care facilities as a factor of access to care in selected administrative areas in the city of Ibadan, Southwest Nigeria. The study showed a lopsided distribution of health care facilities within the city resulting in poor access to them (141). A similar study was conducted to analyse the spatial patterns of health care facilities in Akwa-Ibom State in Southsouth geo-political zone of Nigeria. Similarly, the result showed a lopsided distributional pattern of health care facilities with poor access to quality care in the state (142).

Compared to many developed countries, especially Europe and the USA, generally, the application of GIS in studies of access to, and utilization of health care services in Nigeria are few (143). Among the few that have been conducted, one and at most, two areas of disciplines that affect choice of health care facilities were considered. In a study conducted in a Northcentral State of Nigeria, spatial distribution of health care facilities as a factor of influence in access to, and choice of health care facility revealed poorly planned distribution of health facilities (144). A similar study was conducted by Abass and colleagues in a Northwest State of Nigeria that showed inequality in the distribution of facilities (145). In a study conducted by Adeyinka in a Southwest Nigeria City in 2013, spatial distribution of health care facilities, and availability of health care resources in the facilities showed that distribution of health facilities did not meet the health care need of the people (146).

Other studies in this environment have mapped distribution of health care facilities with respect to specific disease control programmes. While Babatimehin and colleagues worked on spatial distribution of health care facilities in Benue State in the Northcentral geopolitical zone of Nigeria with regard to HIV/AIDS care (147), Oluwafemi and colleagues worked on case events of malaria, spatial mapping of environmental and behavioral factors associated with malaria

transmission and distribution of health care facilities in Ile-Ife in the Southwest geo-political zone of Nigeria (148). Cadmus and colleagues applied GIS technique to model the spread of tuberculosis in a selected community in Ibadan, Nigeria (149).

Factors that determine choice of health care facility and utilization of available health care services are many and are derived from many disciplines (6, 10, 13, 39, 59, 71, 90, 96, 102, 106). Studying these factors from a single or a few disciplines will result in ignoring other important determinants and thus partial understanding with consequent misleading conclusions and incorrect health policy decisions. For instance, studies that considered just the effect of distance on the choice of health care facilities may fail to appreciate the influence of real or perceived quality of service, patient or household factors and the influence of others such as stakeholders in the health system in the choice of health care facilities. Not only are the effects of other factors neglected, the magnitude of the inter-relationship between them in moulding the pattern of choice of health care facilities is usually ignored or not apparent enough for possible health policy decision making processes. Application of GIS as a technique from the discipline of geography, and applying it to other factors from other disciplines that determines choice of health care facilities enhances a deeper understanding of the interaction of multiple dimensions of spatial and non-spatial factors as they affect choice of health care facilities, health services utilization, health outcomes/health status of individuals and population groups which ordinarily would not have been possible, and therefore afford the opportunities to have a better understanding of these relationships (136, 150).

To the best of our knowledge, the majority of the studies on determinants of choice of health care facilities and health care providers conducted in Nigeria only incorporated determinants of choice of health care facilities from one, and at most two different disciplines (140, 141). This study sought to include determinants of choice of health care facility from a number of disciplines such as geography, public health, clinical medicine, health economics, social science and psychology. Application of these multiple disciplines will assist in identifying existing gaps, and a robust understanding of the factors that determine choice of health care facilities as it currently exists among enrollees in the NHIS. This will assist in policy decision for improved service delivery in the scheme. Improved service delivery will assist the NHIS to achieve the objectives for which it was established.

2.3.4 Trust and relationship among health system actors

Trust, defined as the judgement of belief in conditions of uncertainty, matters to the performance and the 'health' of the health system (151). Trust is also described as the expectation that the health system and health system actors will act to protect the interest of individuals (actors), (116, 152) or at least not harm them especially the poorest and the least powerful (116). While the building blocks of the health systems as outlined in the WHO health system framework has been referred to as the 'hard ware', trust brought about by a delicate balance of quality of leadership, inter-personal and group power relationship, ideas, interests, traditions, values and norms of stakeholders have been referred to as the 'software' (62, 153). These intangible factors all interact differently, at different times and situations to determine the resilience of a health system. They are the 'shock absorbers' for the 'hardware' component of the health system with which the system prepares for, manages and absorbs shocks and other unfavourable contextual factors with the ultimate aim of ensuring desirable population health status (154, 155).

To a large extent, the degree to which a health system performs, is a function of the relationship between the actors at different levels of the system - health policy makers, health care institutions in both the public and the private sectors and health care consumers. On its own, the quality of the relationship between these actors depends on the level of trust that exists among them.

Studies have shown that impartiality is central to the belief in fairness, and when the decision – making process by government in a health system is understood to be fair, it engenders trust which in turn builds legitimacy. When government policy is considered to be legitimate, it ensures its acceptance and willingness to use available health services including keeping to drug prescription, clinic appointments and decision to seek care (116, 156). Trust connects and binds together the actors, content, contextual factors and all other components that are necessary for a health system to function synchronously and in harmony for optimal performance and in order for it to achieve its goals. Without trust, the health system is weakened, and its components fall apart.

Perception and measurement of trust is contextually based as a result of differences in values in different societies (157). Even in a particular seemingly homogeneous contextual environment, sub-cultures as entrenched in certain socio-demographic characteristics such as age, sex, socio-economic status among others tend to have varying values and thus differential measures and perception of trust with regard to different elements of trust (151, 152). This may be responsible for how and why some individuals choose to accept less satisfactory services and still trust the health system, while some others will have contrary perception about the same system. Ward and colleagues refer to this as *exchange trust norm*, a situation whereby trust in a system is based on base-level expectations of consistency and minimum standards of care and safety. In this situation government is usually excused based on the knowledge of finite (government) financial and other resources especially human resources commitment to other sectors as the cause of less than expected service quality in the health system. However, a higher level of quality service, *communal trust norm*, is expected of charity organizations, NGOs (faith-based and non-faith-based and similar others) that are expected to demonstrate a better level of functional quality of care. The latter is usually the expectation of health care consumers patronising private health care facilities (158).

Trust is the pillar that holds together all actors in the health system; it cuts through the spectrum of the system from health care consumers, to providers and the employer organization. Trust is necessary to initiate, implement and sustain health care activities needed to produce health care services. Between providers and patients, it enhances quality of interaction, facilitate disclosure by patients which enables providers to take the best possible decision in the cause of health care service provision, and for the patient, a chance to be a co-producer of health care (71). The existence of a trusting relationship between patients and providers enhances perceived quality of and, satisfaction with care. It positively affects adherence with treatment regimen, and boosts continuity of care. Affected individuals have been reported to serve as agents of change to disseminate information about the availability of such health care services and interventions to others who may need them (158, 159).

Health care workers and institutions and the roles assigned to them are held in proxies for the government. Therefore, contacts by health care consumers with the health system is taken literally as contact with the government. Thus, the government is accountable for any

experience, satisfactory or otherwise of consumers of health care at every contact with the health system.

More importantly, trust is more of a function of the patients' judgement of health providers' functional quality of care (more than technical quality) as demonstrated by providers attitudes, for example perceived courtesy, listening to patients complaints, respect for patients' opinions, perceived thoroughness during physical examination, taking time to explain and listen to patients, respect for privacy and confidentiality among others (151). Others that have been mentioned are perceived fairness, truthfulness, communication and responsiveness in care delivery.

Health care workers and institutions and the roles assigned to them in the health system are held in proxy for the government. Thus, as mentioned above, contact by health care consumers with the health system is taken literally as contact with the government. Therefore, the government is held responsible for any experience, satisfactory or otherwise of consumers of health care at every contact with the health system. Therefore, if conducted satisfactorily, the parameters of functional trust could improve the legitimacy of government and its institutions such as the health system, and health interventions, which subsequently, could enhance uptake of such (interventions). This will ultimately have a positive impact on overall population health status (160). Fig.4 below is a summary of the above narrative (151).

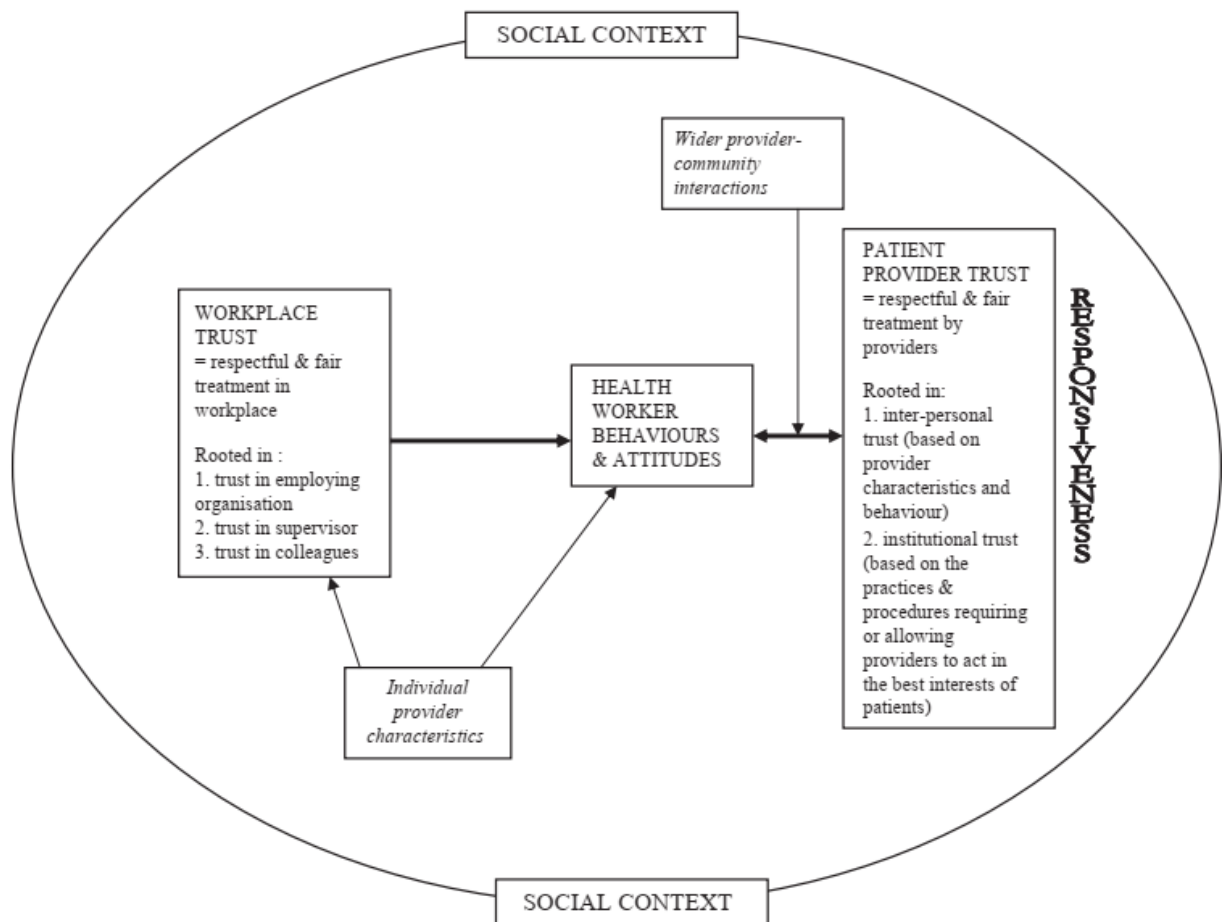


Fig 4: Trust Conceptual Framework (151).

Trust and satisfaction are strongly associated. According to Wendel and colleagues, (107), parameters of functional quality of care are a better predictor of overall satisfaction and trust in an organization; the high the level of satisfaction in health care services received, the high the trust in that organization. Thus, improving on functional quality parameters, increases the level of trust. However, technical quality is measured by availability of certain other parameters of health care services such as availability of medical equipment, cleanliness of the health facility and similar others. These have been cited as mainly affecting health care consumers' complaints or satisfaction domain of care. Thus, by focusing on either of the two types of parameters together or separately, patient satisfaction with care and trust could be improved. A breach in any one of them generally reduces trust in the health system (103).

In as much as patients' trust in providers positively impacts on the uptake of available care, it has been documented that the negative impact of diminished or absence of trust in health care providers outweighs the positive impact (161). Mistrust in the health system could have a

cascade of effects; impoverishing impacts on especially the poor, first by patronizing alternative health care characterized by low standards of care, with an eventual worsening of health status and low capacity to improve personal income, and secondly as a result of oft repeated financial commitment to a less effective (alternative) care (151).

Studies have shown that the flow of trust relationship between health care consumers and providers is not uni-directional. There is emphasis of trust of health care providers in consumers as well as vice-versa (106). In situations where there is little or no trust in consumers especially where providers do not believe the latter to be providing accurate information of their health status the needed functional and technical qualities of care are likely to be diminished or absent, inadvertently affecting the health care outcomes and the negative impact of such on the concerned individuals. This is typical of certain socio-economic status groups such as migrants or people of other races different from the dominant race in the immediate contextual environment (7, 116). Similar acts of mistrust have been reported among prisoners in the recent past (162).

In addition to the trust that patient and provider should have in each other, it is also important that for the health system to perform optimally, trust must exist among health care service providers. Trust in the health system is not limited to that which exists within and among providers alone, it transcends this to include the trust that exists between providers and the employing health organizations. This is what has been referred to as work-place trust, which has been linked to better job satisfaction among providers and an overall improved organizational performance. Work-place trust has also been associated with positive impact on patient-provider trust (106, 151). As a complex inter-connected and inter-dependent institution that involves both public and private health institutions, as well as others especially those in the financing sector, trust is essential for a healthy relationship among all partners in the health system for the attainment of its goals (116, 151). Low level or lack of trust in insurers has been found to be associated with poor uptake of health insurance policies, it has also been found to negatively affect the relationship between enrollees and the insurer on one hand and between providers and insurers on the other hand (71, 163).

Generally, negative experiences and beliefs about the intentions of health institutions and its agents tends to lead to mistrust in government establishments, and these negative perceptions

have been found to have a more profound effect such as constituting barriers to health promotion activities, than do positive perceptions (161, 164).

When government institutions, including the health system, are believed to protect the interest of health care consumers, the level of trust in the system increases, it also increases the legitimacy and uptake of interventions implemented in the health system. Previous research conducted in Mexico in Latin America (165), Tanzania in East Africa (166) and in Nigeria, West Africa (167) gives credence to this.

Real or perceived acts of injustice associated with health interventions, especially those carried out among those who have the least power to protect themselves and their interest in society, have been cited as a strong factor that erodes trust people could have in the health system and in providers. Reports of unpleasant medical interventions that resulted in mistrust have been documented in many countries and at diverse times in history (162, 164).

2.3.5 Conclusion

Access to and uptake of health care intervention are important determinants of health outcomes. Literature has shown that, compared with high-income countries, access to health care in LMIC is generally poor. The various dimensions of access to health care are broadly on both the demand and the supply sides of the health care market, and they consist of the factors that determine choice of health care providers (90). Among these factors is the perceived quality of health care (98), a major supply side factor that determines to a great extent, health outcomes and thus influences where patients choose to receive health care (102), and level of trust that exists among health system actors on both the demand and the supply sides (71, 103). Compared to developed countries, in Nigeria, few studies have been conducted using the GIS in health. The ones that have been conducted were mainly for academic purposes, and with a focus on specific disease mapping (145, 146, 148). More studies employing the use of GIS that could be used to assist health policy decision makers for planning and management are desirable.

Whilst data exists from different settings, there is limited data from Nigeria exploring factors influencing choice, particularly in the contemporary context of the National Health Insurance Scheme (NHIS). It is important that research work is carried out in order to identify likely gaps and address them appropriately. Thus, this study will explore the influence and magnitude of the various factors in the selection of providers among enrolees in the NHIS of Nigeria. Findings will be useful in efforts to reposition the NHIS, expand the scheme for UHC health coverage, and improve health outcomes.

2.4 Study Rationale

2.4.1 Nigeria: brief description of the contextual environment and health indicators

Nigeria is a West African country with a landmass of about 900,000 km². The country borders Niger Republic in the north, Chad in the northeast, Cameroon in the east and Benin Republic in the west, while the Atlantic Ocean is its southern border. The country lies 5 degrees north of the Equator and between 3 and 4 degrees east of the Greenwich Meridian (86). The political structure operates on a three-tier federal system of governance: the Federal, State and Local Government Areas (LGAs). Currently there are 36 states in the country, including the Federal Capital Territory, (FCT) which has the status of a state (36 states + FCT). In each of these states

are varying number of LGAs. In total, there are 774 LGAs in the country. To ensure that government is much closer to the people, the LGAs in each of the states are further divided into political/administrative units called wards. Division into wards includes the urban and the rural areas. The country is grouped into 6 geo-political zones, namely the North-Central, North-East, North-West, South-East, South-West and South-South zones. (Fig 5). The World Bank has classified Nigeria as lower middle-income, with an estimated population of 180 million people (44).

In a 2014 report, its Gross Domestic Product was estimated at \$568.5 million, while almost 70% of the population live on less than \$2 a day, worse in rural areas where most people live (168). Nigeria is a member of the World Trade Organization (169). Designed after well-known countries that operate federal-presidential systems of government such as the USA, the sub-national levels (states and LGAs) have semi-autonomous status in almost all areas of governance except security (territorial defence) and the economy. After many decades of military rule, the country returned to democratic rule in 1999. The country is a fairly open society, with a good enough environment that allows public opinion, freedom of the press and civil society organizations to exercise their fundamental human right under the law. The health sector is one of those that the sub-national governments have autonomy to operate (170).



Fig 5: Political Map of Nigeria showing states and the FCT

The demographic structure is that of a young and growing expansive population pyramid with a broad base and tapered end and other characteristic features (44, 171, 172). Nigeria, like many other countries in the sub-Saharan African region, has poor health indices. Life expectancy at birth in Nigeria is 53 years. Other indicators such as infant mortality rate, under 5 mortality rate and maternal mortality ratio were 69 per 1,000 live births, 109 per 1,000 live births and 814 per 100,000 live births respectively in 2017 (44, 63) (Table 1). There are more than 350 different ethnic groups with different languages and culture. The main religions are Christianity, Islam and the traditional practice. As it is common among the majority of Africans, religious and superstitious beliefs shape the attitude and everyday living of the people (173).

Table 1: Health indices: Nigeria vs Sub-Saharan Africa (44, 63)

Serial No	Indicator	Nigeria	Sub-Saharan Africa
1.	Life expectancy at birth	53	59
2.	Maternal Mortality Ratio (per 100,000 live births)	814	547
3.	Infant Mortality Rate (per 1,000 live births)	69	56
4.	Under 5 Mortality Rate (per 1,000 live births)	109	83
5.	% of 1-year old immunized against measles	54	73
6.	Incidence of Tuberculosis (per 100,000 population)	322	276
7.	Prevalence of HIV, Total (% of population ages 15-49)	3.1	4.8
8.	Total fertility rate (births per woman)	5.7	5.0
9.	Health expenditure, total (% of GDP)	3.7	5.5

The common diseases that are responsible for the majority of deaths in Nigeria are as shown below. Although non-communicable diseases are also included, the burden of infectious diseases remains greater (Table 2).

Table 2: Top 10 causes of death in Nigeria (174)

Rank	Disease	Value (%)
1.	Malaria	20
2.	Lower respiratory infection	19
3.	Human Immunodeficiency Virus	9
4.	Diarrheal diseases	5
5.	Road injuries	5
6.	Protein Energy Malnutrition	4
7.	Cancer	3
8.	Meningitis	3
9.	Stroke	3
10.	Tuberculosis	2

2.4.2 Health care systems in Nigeria

The Nigerian health system is a mix of diverse types. Broadly grouped into the orthodox (formal) and the non-orthodox systems. The orthodox are further grouped into the private and the public sector controlled. While the public is managed by the government at the three levels of the federal, state and local governments, the private are for profit and not-for-profit/faith-based types and are managed by individuals, groups of individuals and religious organizations (87).

2.4.3 Models of health care system and ownership

The Nigerian health system is grouped into three sub-divisions of traditional, alternative and modern. These are all recognized and are regulated by the Government of Nigeria.

2.4.3.1 Traditional and alternative health care systems

Traditional medical practice in Nigeria, as it is in other African countries dates back to centuries before the advent of Europeans. The practise of this system of health care is part of the culture and it has been used to fight diseases and health-related problems through the ages (175). According to a University of Cape Town research Consortium, religion forms the core value and shapes almost all decision making processes of Africans, and inability to understand this is akin to a failure to understand an average African Society (173). This underscores traditional healing practice as an important part of the Nigerian Health System.

Closely linked to this is the neo-religious (Christian and Islamic) spiritual, miracle healing homes. These centres claim to perform spiritual healing for all forms of ailments that defy management in the modern health care systems. Spiritual healing homes are usually a form of Christian sect especially the white garment worship centres. Unlike the traditional healing homes, the practice dates back to years after the coming of the European missionaries to Nigeria. Adherents of this sect have a strong belief in spiritualism in providing solutions to certain ailments, which they believe modern health care cannot solve. People also patronize spiritual homes for other health care services including maternal and child health care, healing of infectious diseases such as malaria, tuberculosis and sexually transmitted diseases. There is no distinction between the pattern of patronage of either spiritual homes or modern medical

centres, as it depends on the perception of the current ailment by the people, and this largely informs the decision of what type of care, whether modern or spiritual care (176-179).

2.4.3.2 Modern health care system

The governance of the health system is provided along the three-tier of local, state and the federal levels of governance. Private non-governmental (faith-based and non-faith-based) health institutions also exist, and they complement public (government) efforts to improve health care delivery services to the people (180). Faith-based health institutions are of the Christian and Islamic religious sects. Like it is for the public sector, private health institutions operate at three levels of primary, secondary and tertiary, depending on the health care services delivery capacity of the particular facility. However, the majority of them operate at the secondary level, many at the primary level and a handful at the tertiary care level (86, 87, 180).

In Nigeria, Primary Health Care has been adopted as the framework to implement health care programmes. At the local government level, the Supervisory Counsellor for Health, assisted by the Medical Officer of Health (MoH), usually a medical doctor with public health training administers health at the LGA level. The MoH is also the Head of the LGA Health Department. Strategic support is provided by the National Primary Health Care Development Agency (NPHCDA), a parastatal of the Federal Ministry of Health, in the implementation of programmes at this level (86).

At the state level, the state Commissioner for Health, through the state ministry of health, administers health programmes implementation. Usually, management of the health system at this level is the responsibility of the health management board in each state. The health system at the federal level is administered by the Minister of Health, who is usually a political appointee. The highest decision-making body in the country on health matters is the National Council on Health (NCH). The NCH includes the Minister of Health and the states' commissioners for health. The NCH advises the Federal Government and also takes decisions on health matters in the country (86, 181).

2.5 Service provision

The primary level of care consists of facilities such as health centres, clinics, health posts and dispensaries. The secondary level is made up of general hospitals. Teaching hospitals, specialist hospitals and federal medical centres are in the domain of the tertiary level of care. Throughout country, the number of health facilities per 100,000 population varies from state to state: highest in Nasarawa State (42 per 100,000) in the North Central zone and lowest in Rivers State (8 per 100,000) in the South-south zone (180) (Appendix V).

By design, the primary level of care is supposed to provide preventive, curative, promotive, and pre-referral care to the population. At the government level, the primary level of care is rendered in the primary health care (PHC) facilities. These facilities are staffed by nurses, community health officers, community health extension workers, and environmental health officers (86). The secondary level of care provides more advanced care such as surgeries, paediatrics, obstetrics and gynaecology. Secondary care serves as the referral centres for the primary care level, and are staffed by doctors, pharmacists, nurses, medical laboratory technologists and the other commensurate health care personnel. The teaching hospitals and specialised medical centres provide more advanced services, and they are the referral centres for lower levels of care. While the primary care facilities can handle client loads of a hundred clients per day, the secondary facilities can accommodate much more than this. Tertiary health care facilities are capable of a much higher client load per day than the other two levels of care. However, the referral system is suboptimal, as cases meant for lower levels of care are commonly managed at higher levels. Training of health professionals such as medical students, post-graduate medical training and similar other training takes place in these tertiary centres. Unlike the secondary and tertiary level facilities, the PHCs have widespread distribution throughout the country, and by government design, there should be one PHC facility per ward to ensure easy accessibility to people in both the urban and the rural areas (86, 87).

Although the majority of the private health care providers in the private sector operate at the primary and secondary care levels, there are a few that operate at the tertiary level of care. However, these are located only in big cities such as Lagos and Abuja. Overall, there are twice as many publicly owned than privately owned facilities (Table 3). However, the health system in Nigeria is weak, characterised by poorly equipped public health facilities, weak referral systems, decaying infrastructure, poorly managed health resources, unavailability of essential

drugs and a poorly motivated health workforce. Distribution of the health workforce, facilities and training institutions, and therefore access to and utilization of health care services, favours the urban and southern part of the country (87).

Table 3: Health facilities by type and ownership, 2012 (180).

Type	Ownership		Total
	Public	Private	
Primary	21808	8290	30098
Secondary	969	3023	3992
Tertiary	73	10	83
Total	22850	11323	34173

2.6 Access to health care and the NHIS (*healthcare financing mechanisms in Nigeria*)

In order to address these poor health outcomes and improve the health status of individuals and society, reforms in the health care sector informed the establishment of the NHIS, a Federal Government Agency established under Act 35 of 1999 Constitution of Nigeria. It has a mandate through various prepayment systems to design and implement a social health insurance scheme, to facilitate easier access to affordable and available quality health care services for all in Nigeria and achieve UHC health coverage. The social health insurance scheme in Nigeria is a tripartite public-private arrangement between the NHIS, NHIS accredited health care providers, and licensed health maintenance organizations (HMOs), with a mandate to establish affordable health care financing through a social health insurance scheme (182).

The three partners, the NHIS, the HMOs and the health care providers have different but complementary roles to play in the programme: while the NHIS shapes health insurance policy and also licenses the HMOs, the HMOs purchase health care services from the NHIS accredited health care providers. A particular HMO may serve to procure health care services for enrollees in more than one NHIS accredited health facility. Service provision to enrollees is through NHIS accredited health care providers from both private and public facilities. Only the secondary and tertiary level of health care facilities are engaged for service provision under the scheme, but primary health care facilities are not included. Under the scheme, both secondary and tertiary

level facilities serve as primary care providers (first contact facilities), however, tertiary level facilities double as referral centres for secondary care level facilities where necessary.

In a particular NHIS accredited health facility, there is usually a NHIS designated desk officer who is an employee and is in charge of the scheme for that particular health facility. Assessment of prospective NHIS accredited facilities is carried out with the aid of standardised guidelines to ensure quality health service is rendered to enrolees (63). Fig. 6 shows the tripartite arrangement between the NHIS, the HMOs and the NHIS accredited health care providers in relation to the enrolees. For administrative purposes, the country is divided into six (6) geo-political zones. A particular zone is made up of various numbers of states. Each of these zones has a coordinator, (Zonal coordinator) under whom are various states coordinators for the particular zone. Thus, in Oyo State, the NHIS has a state coordinator whose activities are supervised by the South-West zonal coordinator.

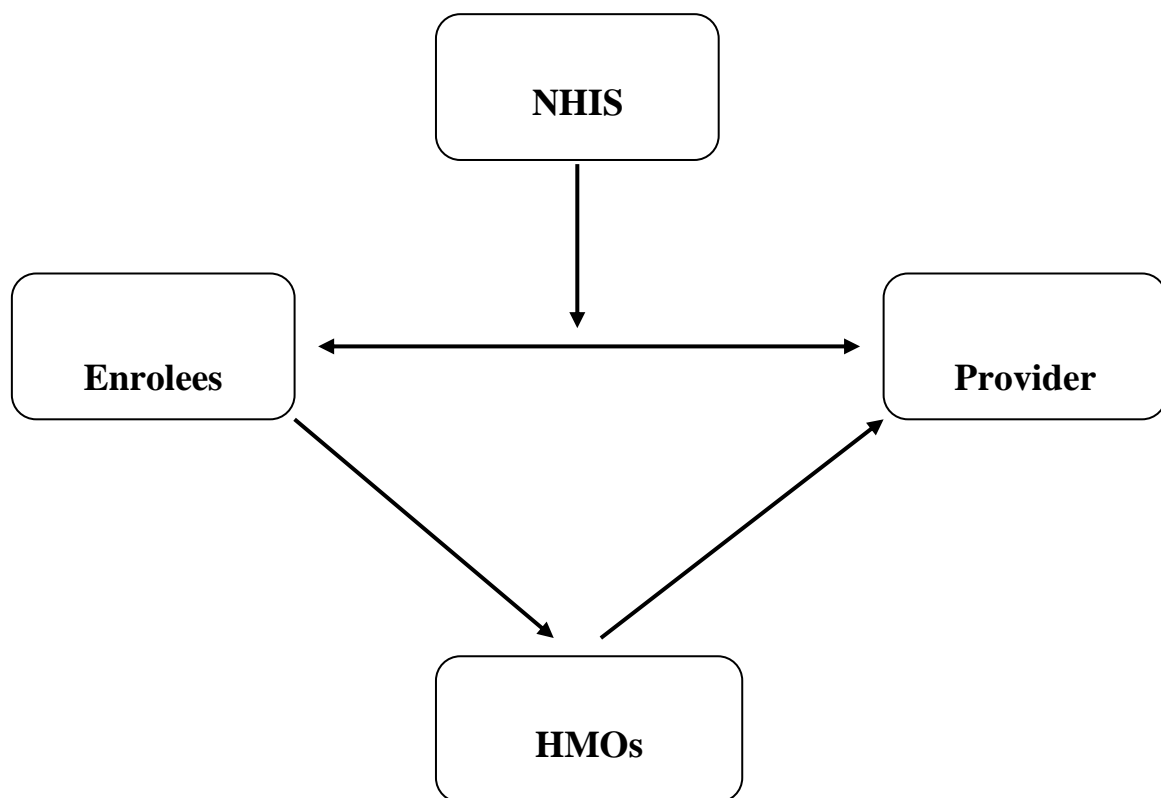


Fig 6: Inter-relationship between NHIS, HMOs, Providers and Enrolees

Adapted from: The health care triangle, Reinhardt (1990). In: Funding health care: options for Europe (183).

2.6.1 National Health Insurance Scheme: policy making process and implementation of a financing reform strategy

The 'Process' of making health intervention policy starts with issue (problem) identification and getting the issue, among many other competing issues in the same sector and across other sectors that are all competing for attention, to be on the agenda table for the attention of the political class with the possibility of translating it into a policy statement. According to Kingdon, (184), issues or challenges in the health sector get desirable attention from policy makers and are deemed fit to be tabled on the table of agenda for consideration when certain factors work synchronously to create the needed attention. However, putting an issue on the table of agenda does not necessarily ensure the issue translates into the desired policy (about that issue). Nevertheless, Kingdon named three factors termed 'streams' that independently flow on their various courses however intersected to open a window of opportunity whereby decision makers' attention is secured, and the issue is tabled for deliberation. These three streams are the problem (issue) stream, the policy (solution) stream and the politics stream (political events such as shifts in the national mood or public opinion, elections and changes in government, social uprisings, demonstrations and campaigns by interest groups).

Kingdon also identified factors that will facilitate the coming together of these three independent streams to intersect and open the desired window of opportunity. These elements are referred to as policy entrepreneurs that bring to light issues that need attention and solution. These could be bodies such as civil society organizations or pressure groups or a network of such. However, the media has been identified as the most potent of these. And once the issue comes onto the agenda table, it becomes an item for policy making. Figuratively, Kingdon illustrates the concept in the form of a diagram that shows the courses of the three streams and their intersection.

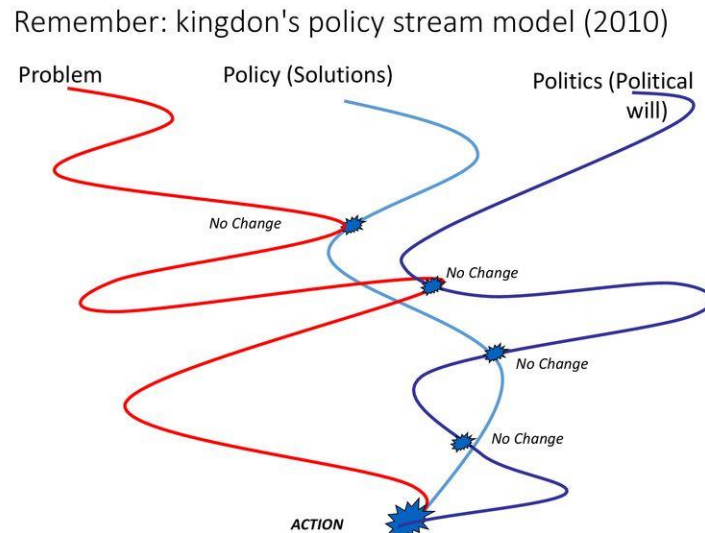


Fig 7: Kingdon's Three Streams Model of Agenda setting (184)

Spurred by the poor population health outcomes (content) in Nigeria, concerned stakeholders identified the need for reform in the health sector as a solution to the problem. Facilitated by policy entrepreneurs, and out of many other options that could solve the problem, prepayment health care financing in the form of a social health insurance scheme was adopted for the country. This ultimately led to the emergence of the National Health Insurance Scheme (NHIS).

The original guidelines and the design of the scheme was done by the NHIS. Other partners were not involved in the process. However, in the implementation of the policy (NHIS), in addition to the NHIS government officials, other stakeholders such as the HMOs and health care providers that are involved in the scheme are in the private sector. In many cases, it has been cited that non-inclusion of the front-line health care workers referred to as 'street level bureaucrats' (170, 185) who do the implementation of policy content on a daily basis, could result in failure of policy implementation (186). The role of the beneficiaries is largely to demand and consume provided health care services, and to assist in providing feedback during quality assurance activities. As of the time of the scheme implementation, there was no clearly stated review of the design of the scheme neither was there any evaluation plan or guideline to assess the performance of the scheme. Evaluation of health intervention tools before implementation and indicators to assess the objectives of the intervention are necessary to strengthening and sustaining health interventions and as well as to assess its performance (61).

Relating with some degree of trust to one another, which is necessary for the achievement of organizational goals (106); the level and exercise of power among the actors differs and may be commensurate to individual actors' positions in the hierarchical arrangement and also the prevailing circumstances. While it is true that the actors in the arrangement all have and could exercise power, the legitimate right to do so, that is authority; differ with prevailing circumstances (170). Each of these actors either possess the power to support or frustrate the functions of the others in the arrangement.

The process of issue identification up to getting it into the policy agenda for possible policymaking and implementation can take diverse routes. Sabatier and Mazmanian (187) advocated the 'top-down' approach whereby the initiation and implementation of policies is by central government decision. The input of other stakeholders such as the network of community stakeholders and frontline health workers whose roles are to implement it on a day-to-day basis was not taken into consideration in the process of issue identification, and design of the policy. It has been faulted as one of the causes of failure of policy implementation. Advocates of the 'bottom-up' approach that is the involvement of local actors and networks in the process, claimed policy implementation is likely to be more successful and not suffer the fate of the 'top-down' approach as a result of local actors' involvement in the process (185). However, the legitimacy of those who are not constitutionally empowered to make policy has been questioned (188). The two approaches were presented as an unrealistic 'heuristic' linear model of policymaking, from issue identification to policy implementation, and that policies do not evolve that way. A fusion of the two approaches and that accommodates the defects of the previous two models as a realistic one, was termed advocacy coalition framework (ACF) and was proposed by Sabatier and Jenkins-Smith (189).

Making policy and the factors that are associated with it, was captured in a framework called the 'Health Policy Triangle' to better comprehend the process of health policy making and how the factors involved relate to each other. As seen below, the most important of all the factors around which all others revolve are the actors.

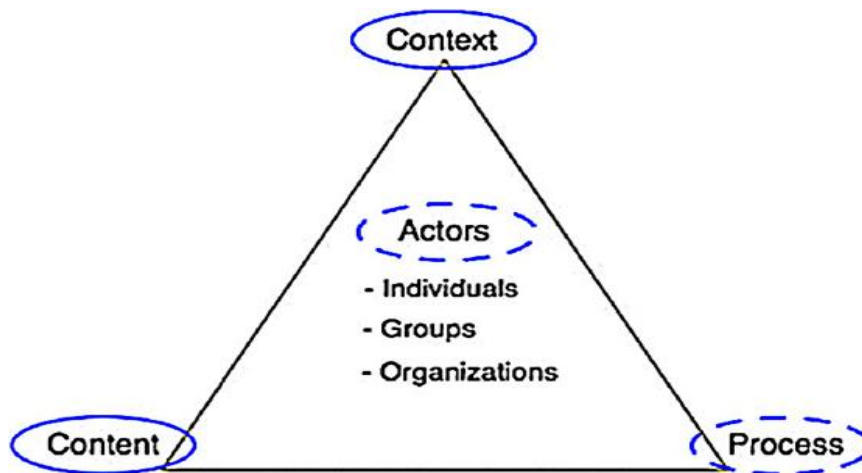


Fig. 8: Policy Triangle

Source: Walt and Gilson (190).

While the content is the prepayment scheme in the name of NHIS, the process is as explained earlier. The actors in the implementation of the scheme are the NHIS officials, the HMOs, health care providers and the beneficiary enrollees, while the contextual environment is the structural, situational, cultural and the exogenous factors.

2.6.1.1 Health Insurance under one roof

However, coverage under the scheme is low, presently less than 10% of the population. As a result, reforms in the recent past has led to decentralization of the scheme to the sub-national levels, that is, federating states of the nation have been authorised to establish state level schemes called state supported social health insurance schemes (SSHIS). This approach was to enhance enrolment of the informal sector population groups especially, as they (informal sector population at the grassroots), are closer to the state government health system. In furtherance of the capacity of the social health insurance industry in Nigeria, the NHIS plans to develop and deploy information and communication technology and as well as the use of Information, Education and Communication to drive operational and management processes in the scheme at all levels in the country. This approach has been termed 'health insurance under one roof' (191).

2.6.2 Policy entrepreneurs: influence on policy making process

Policy entrepreneurs are actors in the policy making process. They are usually insightful individuals or groups of people who make efforts to direct the attention of political elites to existent factors that could be used to bring about a change and thus the possibility of solving health challenges of interest in the society. While policy entrepreneurs are actors in the policymaking process, not all actors are policy entrepreneurs. Policy entrepreneurs are non-state actors, that is, actors outside government. Characteristically, they do not seek formal political power for themselves, nonetheless they want to influence those with formal political power (170). As described by Kingdon, notable policy entrepreneurs include bodies like civil society organizations (or pressure/interest groups), the media and similar others. These bodies in many instances, at different times, and in different countries act to project and compel the ruling class to consider health issues of public interest for consideration and implementation (184). The degree of influence of a particular group of entrepreneurs depends on the level and use of its power in the prevailing contextual arrangement.

Contributions of policy entrepreneurs in health sector reforms in many countries is well documented. Notable reforms in the health system that led to the emergence and implementation of UHC in some Latin American countries such as Argentina, Brazil, Chile, Peru and Uruguay are worthy of note (76). However, policy entrepreneurs such as CSOs' contribution to the implementation of the reform that facilitated UHC in Brazil and in Zambia is a notable in these countries (76, 192). Policy entrepreneurs such as the media, CSOs and similar others have been found useful in raising awareness about the existence of health insurance in Cameroun (193) and in Kenya (194) with a resultant increased uptake of the intervention. When constructively engaged, services of policy entrepreneurs such as the media could be used in building trust that is much needed for the implementation of health interventions (195) and the uptake and sustainability of such interventions (196).

Policy entrepreneurs are not necessarily used for the realization of beneficial social policies, they could also be used to oppose such, depending on whose side they choose to support. For example, the media could be engaged by powerful actors to divert the attention of the masses from potentially harmful products for the benefit of the producers. For example, the tobacco industry at one time used the media to divert the focus of global health bodies such as the WHO

from the harmful effects of the produce of the industry by making it focus on communicable rather than non-communicable diseases that emanate from tobacco products (197), and thus, evade scrutiny and the campaign against it that could arise from such examination.

The media as a policy entrepreneur was used by health insurance industry actors in the USA to campaign against the implementation of a form of UHC during the Clinton administration (198). As largely successful as the UHC in Brazil was, the media was used by opposing interest groups in the health system and this contributed largely to the replacement of it with market-based interventions (199). Resistance to polio vaccination among the locals in some parts of India in the recent past was largely attributed to negative media reports about the intervention (200).

2.6.3 Type of health insurance by socio-demographic characteristics in Nigeria

At present, there are 62 licensed HMOs and only 31% of available health care providers in the country are accredited by the NHIS to provide services to enrollees (63, 72). The NHIS has developed three different programmes to ensure individuals and families are covered under the scheme. These programmes are the formal sector, which is meant for those in the public sector, and the organised private sector. The second is the informal sector programme, which is meant for students in tertiary institutions and local communities. The third is the vulnerable group programme that caters for financing the health of pregnant women, children under five, prison inmates and the aged. However, of all these groups, the formal sector programme is the only organised programme, and is the largest in terms of number of enrollees (63). Under the formal sector arrangement, 15% of the basic salary of the enrollee is contributed to the scheme, whereby the employer contributes 10% of the basic salary of the insured while the employee undertakes the remainder 5%. Citing the same source, enrollees receive care from accredited secondary or tertiary health care providers of their choice, and in addition to himself/herself, an enrollee is eligible to register a spouse and four children under the age of 18 years. According to a recent NHIS Report, population coverage under the scheme is less than ten percent of the total population of Nigeria, with the majority of enrollees in the service of the federal government (63, 171). However, Nigerians who work in the informal sector are largely uncovered, while the level of awareness and knowledge of the NHIS and the various programmes under it is low (48).

Nevertheless, there is a small number of NHIS enrolees who are not enrolled under the formal sector arrangement but participate as voluntary contributors. They are individuals not covered under the other arrangements but who are willing to participate. It also includes retirees, political office holders and foreigners living in the country, as well as those who are not satisfied with the benefit package under the statutory scheme. It provides cover for extra dependents of statutory scheme enrolees. These individuals contribute a fixed amount of premium on an annual basis in order to receive health care services under the scheme (63). Apart from the present arrangement under the NHIS, other types of health insurance such as private health insurance are subscribed to by a few, largely wealthy individuals. In a country-wide National Demographic and Health Survey (NDHS) conducted by the Nigeria National Population Commission (NPC) among 38,948 people in 2013, health insurance coverage of all types, was better in South-West, South-South and the North-Central zones of Nigeria, and as well as among those living in urban areas, better educated individuals and among those in the highest wealth quintile (82) (Table 4).

Table 4: Types of health insurance coverage among people age 15 - 49 years in a surveyed sample (82)

Background Characteristics	Type of health insurance						Total No (n)	
	Employer based		Others		None		Men	Women
	Men	Women	Men	Women	Men	Women	Men	Women
Age								
15-29	3.4	3.0	1.7	1.3	94.9	95.7	9268	21722
30-44	11.4	6.2	2.3	1.6	86.3	92.2	6366	13805
45+	4.5	1.3	20.6	0.3	94.9	98.4	1724	3422
Residence								
Urban	4.1	2.7	0.9	0.7	95	96.7	7611	16414
Rural	1.1	0.5	0.4	0.3	98.5	99.3	9748	22534
Zone								
North Central	3.4	1.8	1.5	0.8	95.1	97.4	2685	5572
North East	1.6	1.5	0.9	0.3	97.5	98.3	2515	5766
North West	1.0	0.5	0.3	0.1	98.7	99.4	5185	11877
South East	2.1	1.3	0.2	0.8	97.6	97.9	1686	4476
South West	4.1	1.8	0.4	0.4	95.4	97.8	2843	6314
South South	3.5	2.5	0.5	1.0	96.0	96.6	2445	4942
Education								
No education	0.0	0.1	0.0	0.1	100	99.8	3685	14729
Primary	0.5	0.5	0.2	0.2	99.3	99.3	2907	6734
Secondary	1.8	1.4	0.4	0.6	97.8	98.1	8281	13927
Above secondary	10.1	8.6	3.1	2.0	86.8	89.4	2486	3558
Wealth quintile								
Lowest	0.0	0.0	0.0	0.0	100	100	2862	7132
Second	0.1	0.0	0.1	0.0	99.7	99.9	2992	7428
Middle	1.0	0.4	0.3	0.2	98.6	99.3	3338	7486
Fourth	1.8	1.2	0.6	0.2	97.6	98.3	3835	7992
Highest	7.1	4.6	1.6	1.3	91.3	94.1	4332	8910
Total	2.4	1.4	0.6	0.4	97.0	98.2	17,359	38,948

2.6.4 Distribution of NHIS accredited facilities across South West zone

The distribution of enrolees across accredited health care providers has been observed to be grossly lopsided. For example, examining the distribution of enrolees across the six (6) states of the South-West geo-political zone of Nigeria demonstrates that at least three-quarters of the registered enrolees in each of the states receive care in less than twenty percent of the accredited health care facilities (Table 5) (72). For example, in Oyo state, 13% of NHIS facilities have >75% of NHIS enrolees from across the state. This pattern of the patronizing of a select few facilities suggests that bypassing, a phenomenon that occurs when ill individuals do not choose the facility with the lowest time price, instead visiting one further away is an issue (201, 202).

Table 5: Pattern of enrolees' distribution in NHIS accredited health facilities across the South-West zone (72, 82)

State	2006 Population figure	2016 Population figure based on 2006 projection (2.7% annual increase)	Total no of enrolees	Total no of health facilities in state	Total no NHIS accredited facilities in the state	NHIS accredited facilities with $\geq 75\%$ of registered enrolees in the state
Ekiti	2,398,957	3,046,675.4	36,147	459	27	4(14.8)
Lagos	9,113,605	11,574,278.4	248,955	2,253	578	75(12.9)
Ogun	3,751,140	4,763,947.8	62,295	1,520	44	7(15.9)
Ondo	3,460,877	4,395,313.8	51,119	811	63	9(14.3)
Osun	3,416,959	4,339,537.9	60,684	1,095	49	5(10.2)
Oyo	5,580,894	7,087,735.4	120,814	1,237	165	20(12.1)
Total	27,722,432	35,207,488.7	580,014	7,375	926	120(12.9)

2.6.5 Distribution of enrolees across top 5% and 10% most patronized NHIS accredited facilities in the South-West zone

Further analysis shows that, ranked in descending order in volume of patronage by enrolees, four of the six states in the South-West zone have more than fifty percent of the enrolees clustered within 5% (by volume of NHIS enrolees patronage) of the NHIS accredited health care facilities, while all the states have almost three-fifths of all the enrolees registered in ten percent of the facilities. Oyo and Osun states have the largest proportion of enrolees, (more than 50%), clustered within 5% of the accredited facilities. In Oyo state, 59% and 73% of enrolees are clustered in 5% and 10% of facilities respectively (72, 203) (Fig. 9).

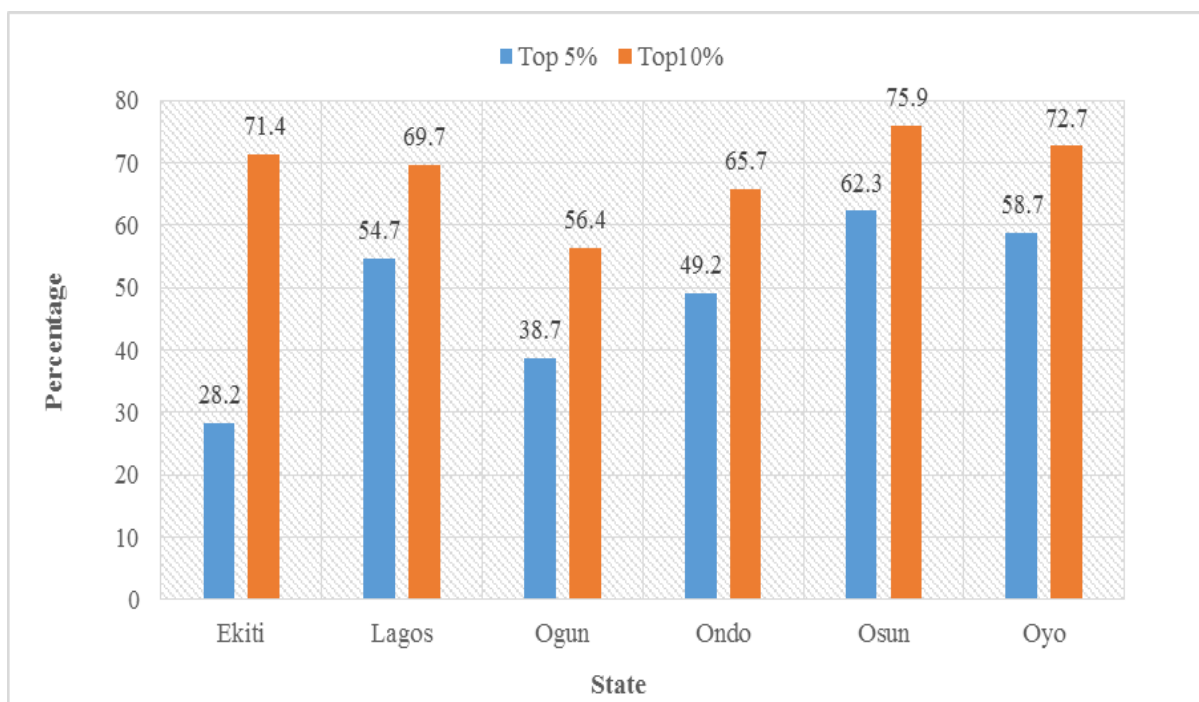


Fig. 9: Distribution of enrolees across 5% and 10% most patronized NHIS accredited facilities in the Southwest zone

2.6.6 Skewed distribution and patronage of health care facilities: implications for health outcomes

There are several implications of the observed skewed distribution of enrollees across accredited health care facilities. These include excessive workload as a result of heavier patient load, and gross under-utilization of other less patronized facilities. Excessive workload has its effects on the dimensions of quality of care; and could result in undue pressure on both the human and material resources with a negative impact on service delivery. While the experience of fatigue and likely costly medical errors is not unlikely on the part of the personnel, the wear and tear on the equipment may aggravate inaccuracies with misleading results compromising the safety of the consumers of health care services. Long waiting times are more likely in these circumstances, with less than satisfactory service experience on the part of the patients as a result of sub-optimal inter-personal relationships between health care workers and patients (23, 24). Poorly satisfied patients are less likely to abide by treatment instructions including follow-up appointments. Although long waiting times are an undesirable event in any condition of ill health, its effect is worse for disease conditions that require prompt attention at the point of service.

Thus, although quality health care service may be available and financial barriers may be almost non-existent on account of a functional NHIS prepayment scheme, beneficiaries of the scheme may still face challenges of access and quality of care due to these factors (24).

Trends in health indicators in Nigeria have shown worsening health outcomes on basic health indicators such as maternal mortality ratio, infant mortality rate and life expectancy at birth (Table 1). The present skewed distribution of enrollees across a few of the accredited facilities (72) could compromise efforts to improve access to care under the NHIS, designed to address these poor health outcomes; with a resultant poor satisfaction with rendered health care service (24). As efforts are underway to achieve UHC health coverage in Nigeria, policy makers need to know the factors responsible for the observed skewed distribution in patronage of NHIS accredited health care facilities. These findings will inform strategies to address these gaps towards improving quality of health service delivery and health outcomes.

2.6.7 Health care facilities and enrollee distribution in the 11 LGAs of Ibadan

There was a total of 1,237 health care facilities in Oyo State, of which only 227 (18.4%) are accredited by the NHIS. Of these accredited facilities, 192 (84.6%) are located within the 11 LGAs of Ibadan, the largest city in Oyo state, which has a total of 590 health care facilities (Table 6). There are fifteen (15) faith based NHIS accredited facilities in Oyo State which accounts for 6.6% (15/227) of the total of health care facilities in the State. Of this number, the 11 LGAs of Ibadan has 11(73.3%). Thus, in effect the total number of non-faith based NHIS accredited health care facilities within the study area was 181.

Table 6: Distribution of NHIS accredited health facilities and enrolees across LGAs in Ibadan

(204)

No	LGA	Rural/ Urban Classifi- ca-tion	Head- quarters	Populatio n @ 2.7% annual GR	Total Facility				NHIS Status	
					1 ⁰	2 ⁰	3 ⁰	Total facility in LGA	No of NHIS Facilities	Total enrolees in LGA
1	Akinyele	Urban	Moniya	211,359	36	10 (3)*	0	46	3	204
2	Egbeda	Urban	Egbeda	319,388	34	42 (9)*	0	76	9	6,857
3	Ibadan North	Urban	Agodi- Gate	856,988	24	63 (37)*	1 (1)*	88	38	42,429
4	Ibadan North East	Urban	Iwo-Road	330,399	13	36 (31)*	0	49	31	12,792
5	Ibadan North West	Urban	Onireke	152,834	9	27 (22)*	0	36	22	23,593
6	Ibadan South East	Urban	Mapo	266,457	15	14 (7)*	0	29	7	769
7	Ibadan South West	Urban	Ring-Road	283,098	23	79 (65)*	0	102	65	23,730
8	Ido	Semi- urban	Ido	117,129	18	27 (11)*	0	45	11	1,188
9	Lagelu	Urban	Iyana-Ofa	147,957	19	10 (6)*	0	29	6	559
10	Oluyole	Urban	Idi- Ayunre	734,377	26	12	0	37	0	0
11	Ona Ara	Rural	Akanran	118,465	29	24	0	53	0	0
	Gross Total				267	322	1	590	192	112,121

(*)* Number of facilities accredited by NHIS in each of the LGAs

2.6.8 Geospatial distribution of NHIS accredited health care facilities in Ibadan

The geo-spatial distribution of the NHIS accredited health care facilities in the 11 LGAs of Ibadan is as shown in the map below.

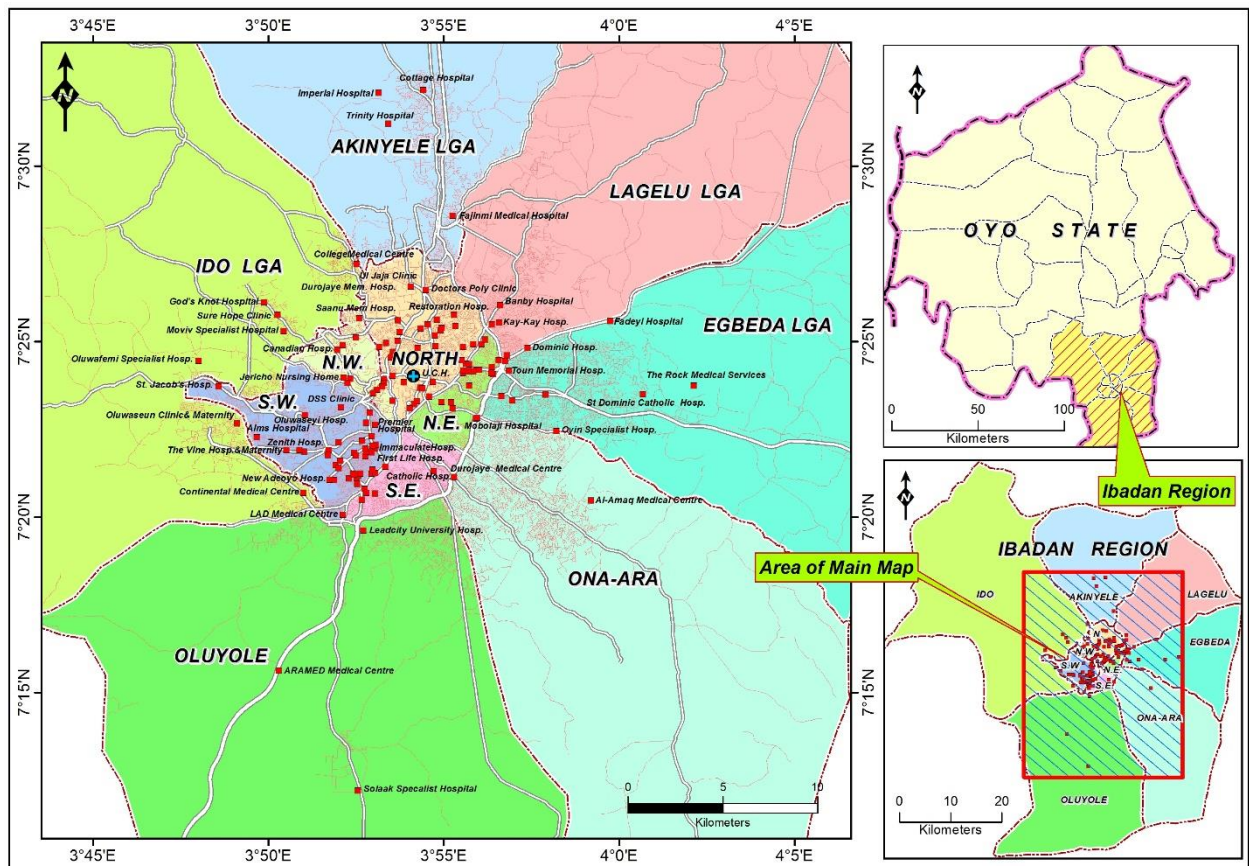


Fig 10: Geospatial distribution of NHIS accredited facilities in the 11 LGAs of Ibadan City

2.7 Research aims and objectives

Influence of consumers and suppliers on the choice of and access to health care facilities

The choice of and access to health care facilities and services are determined by many factors on the sides of the consumer and supplier of health services. Availability and spatial location of resources (human, materials and equipment) in the health facilities as well as the influence of stakeholders have been cited as some of the factors that influence choice of facilities by health care consumers (39, 92). It is important that the influence and the level that these factors have on the choice of facilities among health care consumers be assessed. Findings could shape the planning of facilities location for the purpose of reducing inequity of access to care and improving health outcomes. Thus, the following research questions were identified.

2.7.1 Research questions

The study addressed the research questions listed below.

1. What were the spatial patterns of distribution of accredited health care facilities in Ibadan?
2. What were the enrolees factors that influenced choice of accredited secondary health care facilities?
3. How available and functional were the infrastructure, equipment and commodities for service delivery as well as human resources availability and capacity in selected accredited health care facilities in Ibadan?
4. How satisfied were enrolees with the services received in the chosen health care facilities?
5. How did stakeholders influence enrolees' pattern of patronage of accredited health facilities?

2.7.2 Aim

The study aimed to assess the geographical distribution of National Health Insurance Scheme accredited health care facilities and the determinants of choice of these facilities by health insurance enrollees in Ibadan Oyo State South-West Nigeria.

2.7.3 Objectives

1. Describe the geo-spatial pattern of National Health Insurance Scheme facility patronage in relation to enrollees' places of residence
2. Investigate enrollees' (socio-demographic and health related) factors that influence choice of health care facilities
3. Assess the quality of care (physical infrastructure, human resource capacity) at selected National Health Insurance Scheme accredited health facilities
4. Determine the level of, and factors influencing satisfaction with service delivery among enrollees
5. Explore stakeholders' perceived roles in the observed enrollees' distribution pattern in selected National Health Insurance Scheme facilities.

2.7.4 Conceptual frameworks

The Institute of Medicine defines quality as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge' (205). Quality health care can be described in the following terms: effective, efficient, accessible, patient-centred, equitable and safe (206). Avedis Donabedian developed a theoretical framework with which quality health care can be assessed. This framework identifies structure, process and outcome measures. Structural measures are concerned with the assessment of the adequacy of facilities, equipment and consumables as well as the qualification and competence of health care personnel. Process measures deal with the deployment of the structural resources aforementioned to deliver needed health care services. The focus of process measures is on protection of patients from injuries during care delivery, providing beneficial, responsive and respectful health care services. It also includes services provided with minimal time and resource wastage, as well as provision of care that does not vary with quality because of personal characteristics such as socio-economic status, gender and race among others. In essence, quality health care is assessed based on how safe,

effective, patient-centered, timely, efficient and equitable the service is (205, 206). Survival of ill health or any medical condition, recovery and the restoration of function are the basic components of outcome measures. These also include clients' perception of satisfaction with health care delivery services (102). Outcome measures represent the definitive confirmation of quality of services delivered in a health system (98, 102). The above is as represented in the Donabedian Conceptual Framework (Fig.11).

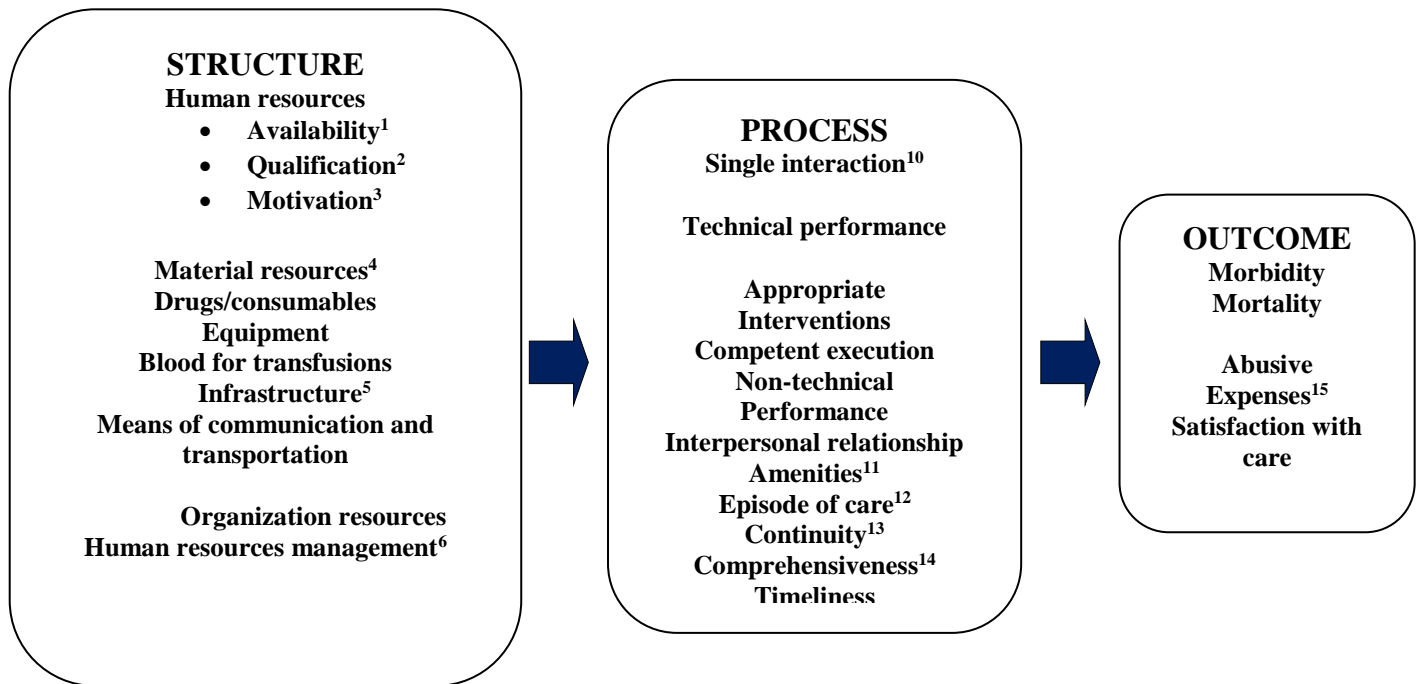


Fig 11: Donabedian Quality of care Conceptual Framework

Evaluating quality of obstetric care in low-resource setting: Building on the literature to design tailor-made evaluation instruments – an illustration in Burkina-Faso (98).

¹Number of human resources on staff and on duty 24 hrs/day, 7 days/week. ² Qualification is the fact, for example, of having a degree in medicine, midwifery, etc.; this is not to be confused with competence, which is expressed in the care process: qualification and competence are not automatically interrelated. ³ A person's interest in pursuing the objectives of the organization for which he or she works. ⁴ Should be available at all times, functional, and in sufficient quantity. ⁵ Including buildings and support services (sterilization, laundry, etc.). ⁶ E.g. team organization, job descriptions, regular payment of salaries, sanctions and rewards, etc. ⁷ Should be in user-friendly formats and well maintained. ⁸ E.g. review of cases having negative outcomes, collecting

patient's opinions on services received, etc.⁹ Such that patients are not required to pay anything before receiving obstetric services.¹⁰ Between the caregiver and the patient.¹¹ Characteristics of the setting within which care is provided that help put the patient at ease (for example, not only are there curtains—a material resource—in the delivery room, but the caregivers actually take care to close them to protect the patient's privacy).¹² All of the single interactions, and how they are interconnected, from the beginning to the end of the patient's treatment. This looks at how services are organized.¹³ Within the health facility and if the patient is referred, from one facility to another.¹⁴ All the services required are provided.¹⁵ Abusive fees charged by certain health care professionals, which are a flagrant sign of bad practices.

A related Conceptual Framework is borrowed from business studies as demonstrated by Gronroos in 1984 when the concepts of technical and functional qualities of care were identified as fundamental components of quality of care. There are two components to quality of care, technical and functional (17, 102). While technical quality (TQ) is about the actual procedure of the service delivered, functional quality (FQ) is about the process by which the service is delivered (102). Quality of care has been reported to have strong correlation with trust and satisfaction in health system (71, 106, 151, 161, 207). Availability of medical equipment, drugs and other consumables, and cleanliness of facility environment are parameters of measurement of technical quality (102). When TQ of care is perceived as good, trust of health care consumers in the system improves, likewise the level of satisfaction with care. This boosts provider-consumer co-production of health services and adherence to the prescribed line of management of care. It also improves health-seeking behaviour among consumers and has been reported to enhance the ability of consumers to serve as agents of change in important health information dissemination (71, 158, 159). The opposite is the case when there is a poor perception of care (103, 151). Non-availability and inaccessibility of quality of care because of poor infrastructure and supply of essential consumables could render financial coverage, as it is available under a social health insurance scheme useless (24). Inadequate supply of equipment and consumables is a form of inaccessibility to a form of dimensions of care (5). This is as summarised in the diagram below. Fig. 12 (17).

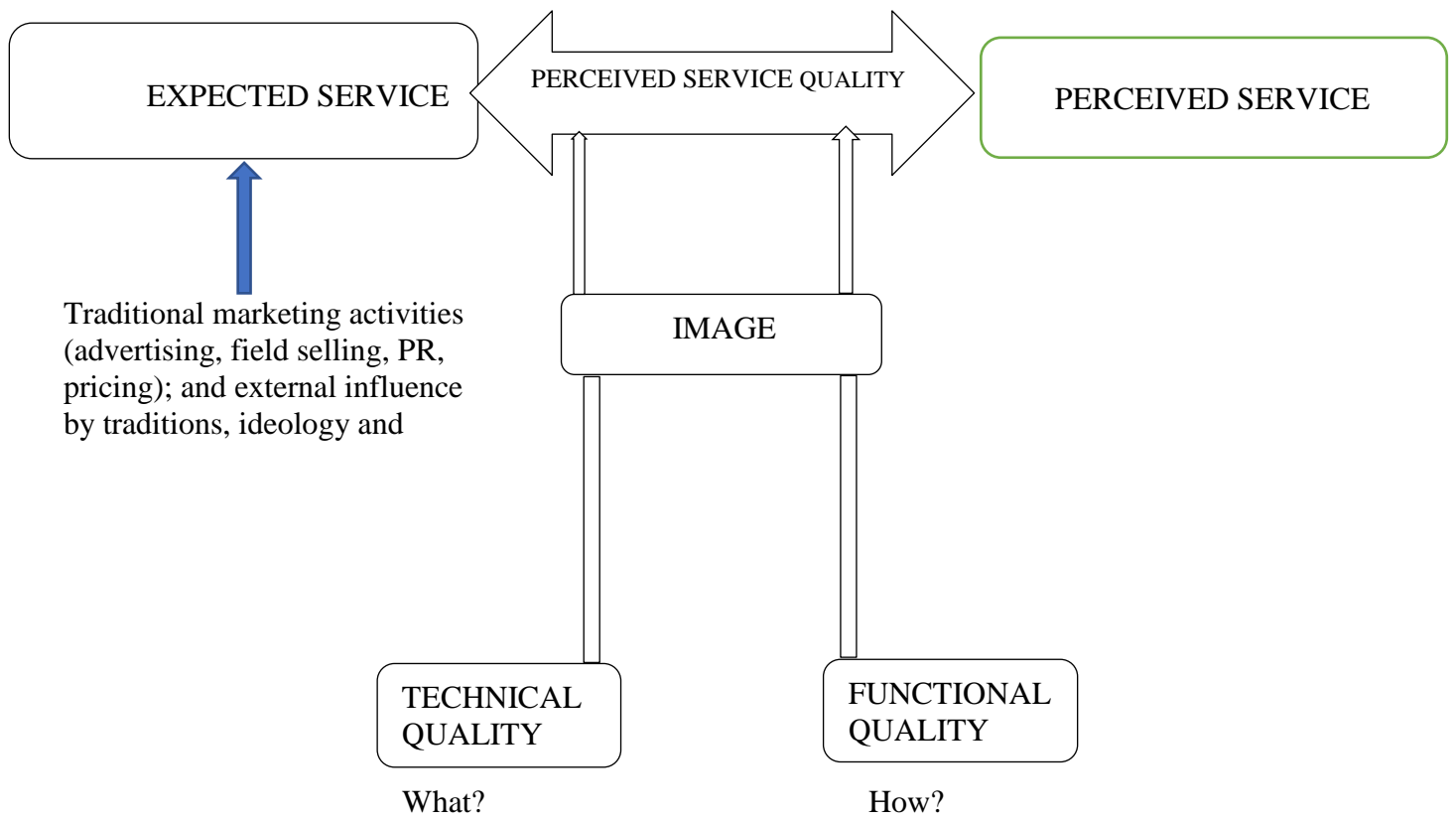


Fig. 12: The Service Quality Model

Other concepts that are relevant and used in this study are the WHO Conceptual framework of the six building blocks of health system and that of the dimensions of access to care by Peters et al. (5). A close study of these four conceptual frameworks shows that each of them uniquely projected the same information from different dimensions. While some seem to summarise, others tend to dissect the fundamental components of quality of care down to the basics.

CHAPTER THREE

3.0 Methods

Methods adopted in carrying out the study are discussed in this section. The overall method as well as the methods specific to carrying out each of the study objectives are discussed in detail.

3.1 Overall

This study was conducted using a mix-method approach of geo-spatial, quantitative and qualitative data collection methods. Appropriate methods were used in collecting data for each of the study objectives. Data analysis and narration was done accordingly.

3.1.1 Study setting

The setting of the study was Ibadan, Oyo State located in the southwest geo-political zone of Nigeria (Fig. 13). Ibadan has an estimated population of 2,559,853 (45.9% of the state population), and at a 2.7% annual growth rate, the population of the city was estimated at 3.5 million people. The city is located 128 kilometres inland northeast of Lagos (former capital of Nigeria) and 530 kilometres southwest of Abuja, the federal capital. It is located on coordinates 7°23'47"N 3°55'0"E (172). The city has 11 LGAs, of which 5 were in the inner core area while 6 were in the peripheral and outer ring of the city (Fig 7). The inner core LGAs consist predominantly of old areas which were mainly unplanned, high density slum areas with less access to basic social infrastructure, while the 6-outer ring LGAs consist of more planned areas with better housing and social infrastructure. The inhabitants are mainly Yorubas, though other ethnic nationalities within and outside of Nigeria form part of the population (208). Predominant professions include civil servants, businesspersons, artisans and farmers. Christianity, Islam and traditional religions are the major faiths adopted.

In an earlier survey conducted by the National Bureau of Statistics of Nigeria, in 2010, the South –West was reported to have the lowest poverty rate at 59.1% while the North-West Zone had the highest rate at 77.7% (168). A recent survey conducted by the NPC in 2013 stated that the South-West zone had the largest proportion, 49.8% while the Northeast and North-West each had 7.4% of the surveyed population in the highest wealth quintile. According to the same report, the South-West is one of the best zones in terms of completed primary education, 12.8%

and the largest proportion with more than secondary education, 11.0%, while the North-east zone had the smallest proportion completing primary education and the North-West zone the smallest with more than secondary education, at 5.9% and 1.4% respectively (82, 171). Ibadan is home to many higher institutions of learning, notable among them is the University of Ibadan (UI). Established in 1948, it is the first tertiary institution in Nigeria.

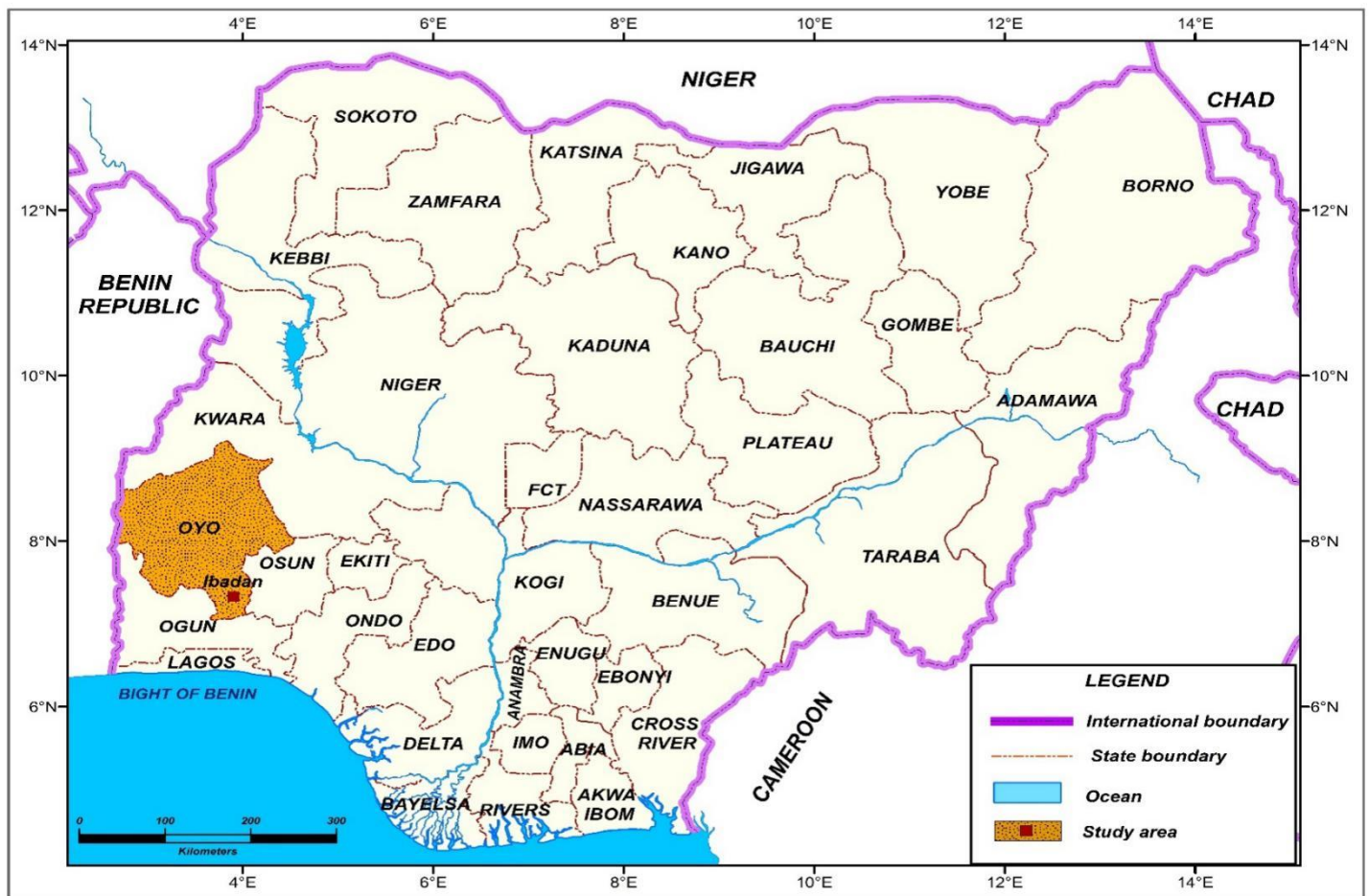


Fig. 13: Map of Nigeria showing Oyo State map (inset)

The city of Ibadan is also home to the first and the most-resourced teaching hospital in Nigeria, the University College Hospital (UCH), established in 1957. The city also has a sizeable number of small to medium scale industries such as the agro-allied, telecommunications, food and beverages, construction and real estate among others. (Fig. 14)

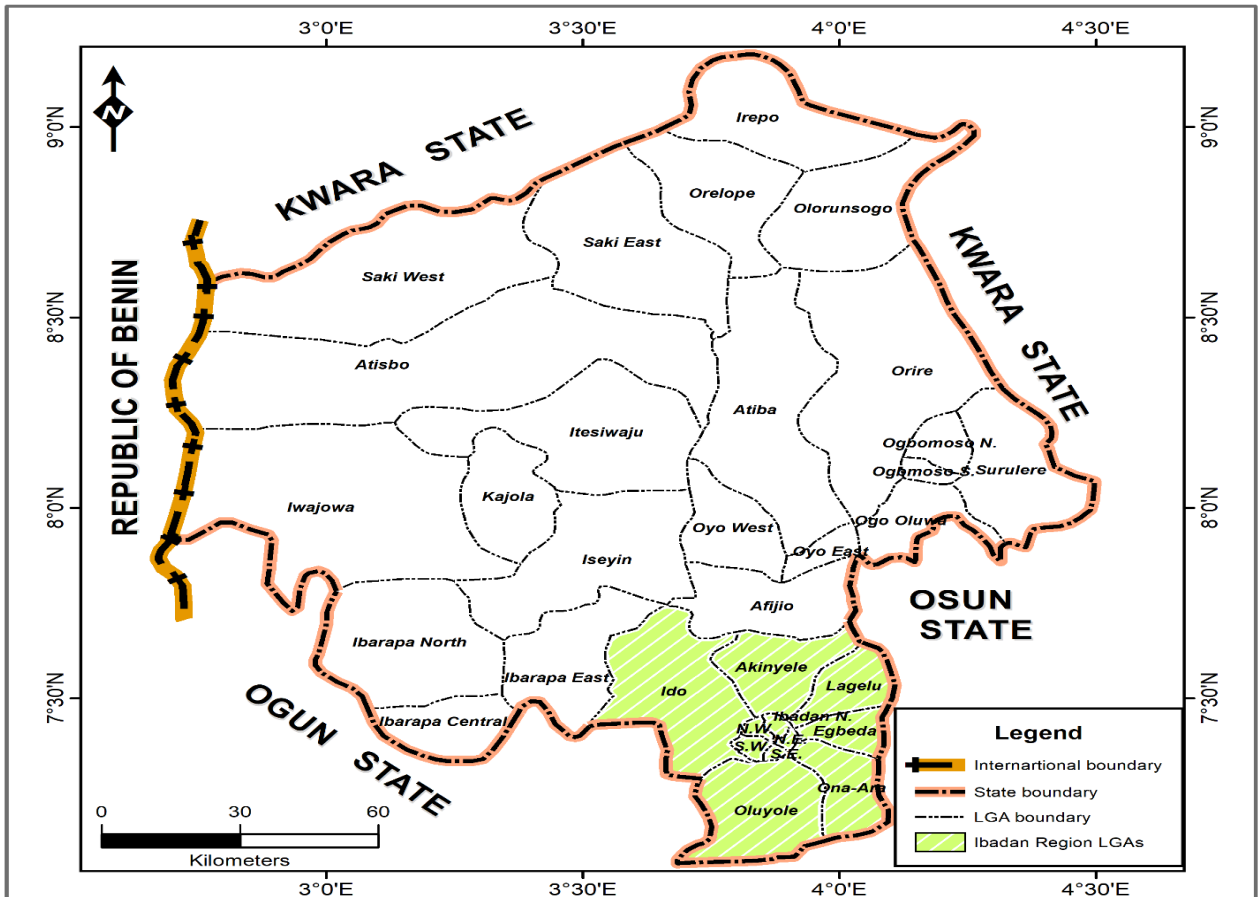


Fig. 14: Map of Oyo State showing study area

As of the time of the study, there were a total of 1,237 health care providers in Oyo State (180) out of which only 227 (18.4%) were accredited by the NHIS to provide services to its enrollees. Of these accredited health care providers, 192 (84.6%) were within the city of Ibadan. Health problems in the city were similar to those common in Nigeria (Table 2) (174). (Fig.15).

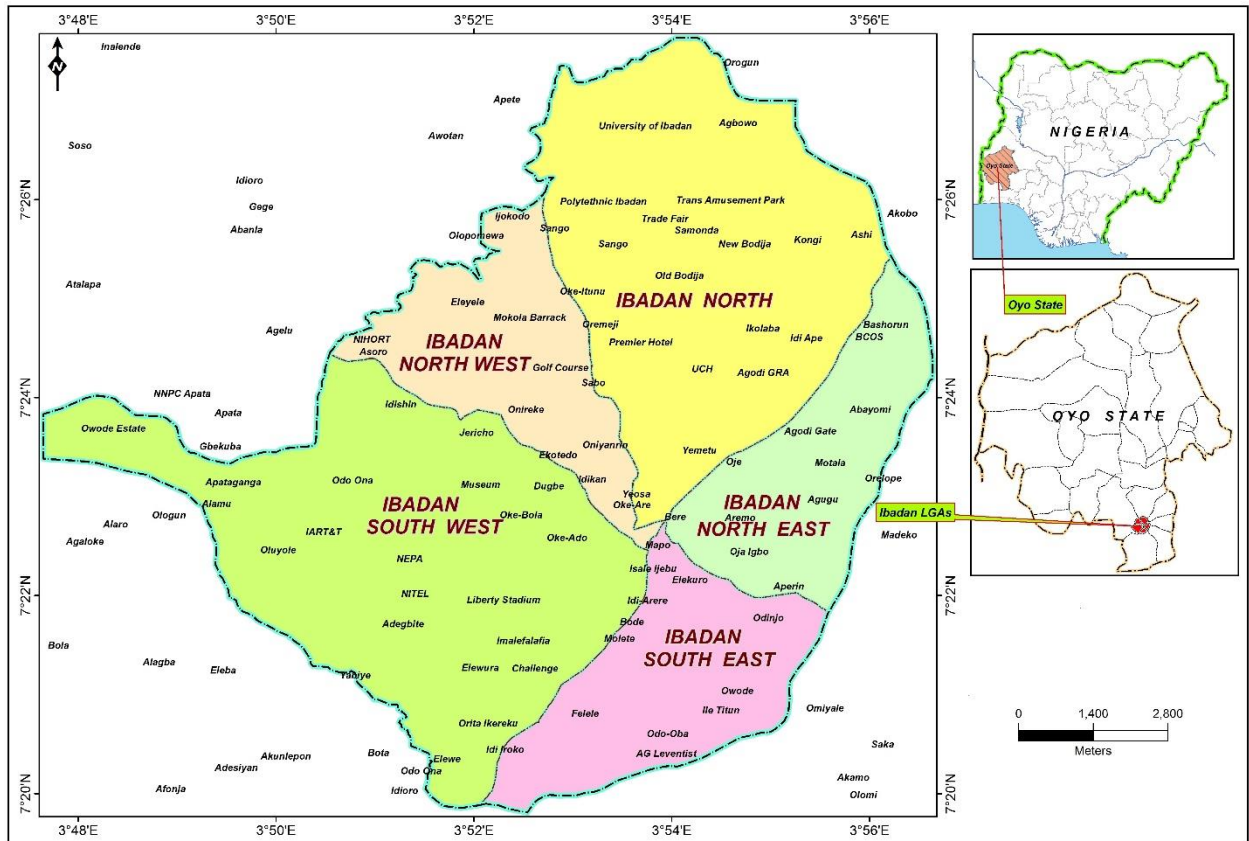


Fig. 15: Map of study area showing maps of Nigeria and Oyo State

The transportation system in the Ibadan metropolis

The intra-urban mass transit system in the study area is poorly planned, operates largely by the private sector, and is characterised by a large proportion of poorly maintained road networks. This is worse-off in the inner, high density compared to the outer better planned low - density areas of the City. As a result of the inefficient transit system, the demand by commuters outweighs the supply capacity of existing transport facilities. Thus, long queues and waiting times at terminals are a frequent experience (209, 210). See Appendix I for picture

3.1.2 Study execution plan

The study was divided into three main sections; first it considered the effect of spatial distribution of health care facilities and the impact of this on the process of facility selection by enrolees. Secondly, it considered the patient characteristics that influenced the choice of providers. This was followed by employing an adapted Donabedian Quality of Care (98) Conceptual Framework (See Fig. 11 above) as a guide to assess providers' characteristics, and the influence of these on the choice of, and satisfaction with, health care services rendered in the chosen facilities. Factors that influenced enrolees satisfaction with care were thereafter determined. Lastly, data was collected using a qualitative method, to determine the influence of stakeholders in the choice of health facilities and the distribution of facilities across these facilities. Data collection was carried out sequentially in five (5) phases as seen in Fig. 16 below.

While quantitative methods of data collection enabled the generalization of study findings and the establishment of patterns of degrees of certainty, the qualitative method was exploratory and provided an insight into the complexity of the pattern (211) that was observed in the distribution of NHIS enrolees across accredited health facilities. Thus, the use of a mix-method and, multidisciplinary approach in data collection as it was done in this study have contributed to efforts to synergize the advantages in each of the data collection and, minimized the weaknesses in each of the methods used. Thus, the findings of this study contributed to better understanding of (all) stakeholders in the health insurance industry of Nigeria factors that influenced decisions on choice of facilities, and thus could assist in improving the quality of service delivery and health outcomes under the NHIS.

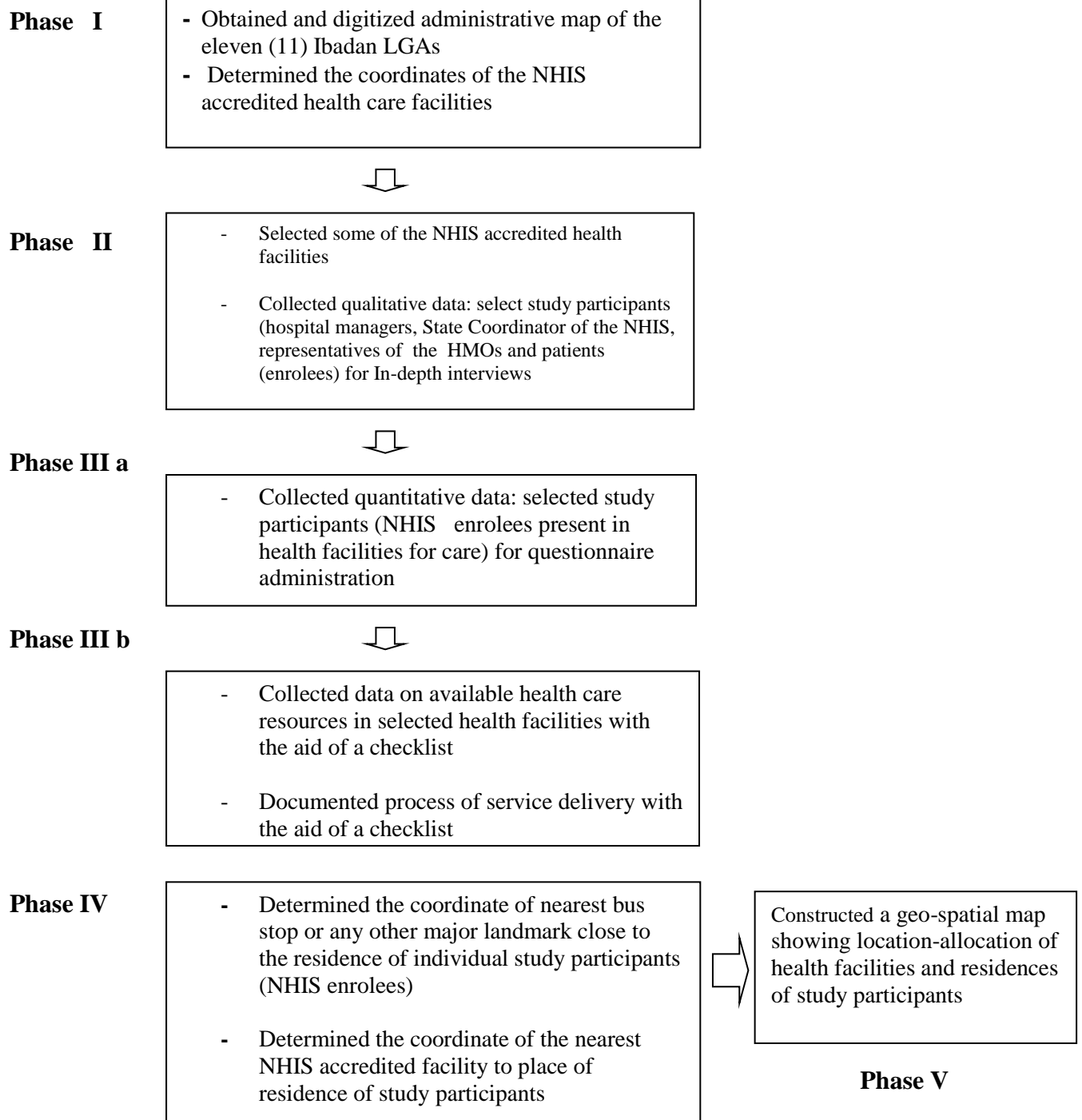


Fig. 16: Phases of data collection

Explanation of Fig. 16

The map of the eleven LGAs of Ibadan metropolis was obtained and digitized. The coordinates of NHIS accredited health care facilities within the 11 LGAs were determined. Some of these facilities were selected. Quantitative and qualitative data were collected from study participants. Data were also collected on facility infrastructure and coordinates of the nearest bus stops or any other major landmarks close to the residence of individual study participants (NHIS enrollees). The same was done for the nearest NHIS accredited facility to place of residence of study participants. These data were used to construct a geo-spatial map showing location-allocation of health facilities and residences of study participants.

3.1.3 Study design

This study was cross-sectional in design, with descriptive and analytical components. A mixed method approach was used to collect data including (1) Mapping of selected NHIS accredited secondary health care facilities in the city of Ibadan in relation to study participants' places of residence, (2) Quantitative and (3) Qualitative data collection methods. An explanatory approach to these mixed methods was used: the quantitative data are presented first, followed by the qualitative data which aimed to explain the quantitative data (212).

3.1.3.1 Mapping:

This involved mapping of all selected NHIS accredited secondary health care facilities in the city of Ibadan using the ArcGIS 10.4.1 software.

3.1.3.2 Qualitative assessment:

In-Depth Interviews (IDIs) were conducted with the Chief Medical Directors (or any other hospital personnel directly involved in the scheme), NHIS officials and representatives of HMOs and the enrolees. Observation of client-provider interactions during the process of service delivery were made.

3.1.3.3 Quantitative

The quantitative aspect involved the enrolees and was performed with a structured interviewer-administered questionnaire. It also included assessment of the physical environment of the facilities, infrastructure and equipment, using a checklist.

3.1.4 Study area and health facility selection

There was a total of 112,121 enrolees patronizing accredited facilities located within the 11 LGAs of Ibadan. Only NHIS accredited secondary health care facilities were selected for the study. Primary Health Care facilities were not accredited to provide health care services under the NHIS, and therefore were not selected for the study. Due to the small number (only one [1] in the study area) compared to NHIS accredited secondary health care facilities, and also because of better infrastructural facilities and human resources availability compared to secondary health care facilities, the only available tertiary health care facility in the study area was not selected. All faith-based health

care facilities in the study area were however purposefully selected into the study, while others (non-faith-based private) were selected using stratified systematic sampling to allow for a representation method of sampling.

3.1.5 Study population

The study population were the NHIS enrollees in selected NHIS accredited secondary health care facilities. They were employees of the Federal Government of Nigeria. The lowest level of formal education amongst them was high school. The names and the physical location of all NHIS accredited health facilities in the 11 LGAs were obtained from the Oyo State NHIS Office in Ibadan. This was corroborated with a list that was obtained from the Zonal Office of the NHIS, also located in the same City. Eligible individuals were the principal enrollees or spouses (excluding dependents under the age of 18 years) and had enrolled in the facility for at least one year prior to the commencement of the study. This was to ensure that study participants had adequate knowledge of the basics of the NHIS, and enough interaction with the health system under the scheme to enable them to respond appropriately (213). Among this population, enrollees who began using the selected facilities before the commencement of the health insurance scheme were excluded from the study as well as enrollees who were health care workers in the selected facilities. The last two categories of enrollees were excluded from the study because the choice of NHIS accredited facilities among them could not have been influenced by the factors under study because they have been receiving care in these facilities prior to commencement of the scheme and also because those who were health care workers in the facilities would by default choose the health facilities where they work to receive care. Thus, factors that influenced others could not have influenced them in the choice of health facilities.

Under the NHIS of Nigeria, as it is in the mainstream care services, patronage of health care facilities is daily. Enrollees (patients) that were recruited into the study were not in the category of those who had a long waiting time before physical presence in a health facility. Potential study participants were selected from eligible enrollees daily from the outpatient department of the facilities. Those who were on a long waiting list to access care such as the critically ill, terminally ill and those in similar other conditions were not eligible and were not recruited into the study. With a well-coordinated strategy, data collection spanned a period of twelve (12) weeks. Stakeholders such as the managers of selected NHIS facilities, NHIS officials and HMOs representatives who were in charge of selected NHIS accredited health facilities in the study area were also interviewed.

3.1.6 Sample size estimation

Sample size was calculated based on the level of satisfaction with service delivery (objective 4). The degree to which health care consumers' expectations in a health system are met is a measure of responsiveness of the system. Responsiveness influences choice of health care providers; when a health care facility is perceived to be responsive, health care consumers are more likely to be satisfied with care delivery and are more likely to choose it to receive care (90). Health system performance is measured in the following domains of responsiveness of 'prompt attention', 'dignity', 'communication', 'autonomy', 'choice' and 'quality of facilities' (213). Both technical and functional dimensions of quality of care (17, 18, 102, 113), and health care consumers' socioecological characteristics that influenced choice of health care facility are summed up in these domains.

In an earlier study conducted among NHIS enrollees in selected health care facilities in a Northcentral state in Nigeria, Mohammed and colleagues (2013) affirms that different domains of measures of health system performance differently influence choice of health care facility among health care consumers (213). A good knowledge of factors that influenced choice of health care facilities among NHIS enrollees and the degree to which it influences individuals and groups of individuals in the context of a defined society is necessary for policy makers and other stakeholders to appropriately channel necessary efforts and resources to reposition the NHIS and enable it achieve its objectives.

Satisfaction with care influences choice of health care facility. In this study, satisfaction with care provided in the health care facilities is the main outcome variable. In the same study by Mohammed and colleagues (2013) (see reference 213 above), the proportion of enrollees who were satisfied with choice of provider (a domain of measure of responsiveness or health system efficiency and performance) in a similar and in a recent study in Nigeria was 40.7%. Therefore, this value was used to derive a minimum sample size for the present study.

Using the Leslie-Kish (1965) (214) and supported by other research works (215) formula for cross-sectional studies, the sample size was determined as follows:

$$n = \frac{Z_{\alpha}^2 pq}{d^2}$$

Where n is minimum sample size

Z_{α} = standard normal deviate corresponding to the probability, α of making a type 1 error at

$$5 \% = 1.96$$

$p = 40.7 \%$, the proportion of those who were contented with chosen a health care provider in an insurance scheme was 40.7% (213).

$$q = 1 - p = 1 - 0.407 = 0.593$$

d = degree of precision/sampling error is set at 0.05 level of significance

$$n = \frac{(1.96)^2 \times 0.407 \times 0.593}{(0.05)^2} = 370$$

Anticipating for a 10% non-response rate, the new sample size “N” will be $N = n/1-NR$ where;

n = calculated sample size

NR = non-response rate.

$$N = n/1-10\%$$

$$N = 370/1-0.1$$

$$370/0.9$$

$$N = 412$$

A sample size of 420 was used for this study. Thus, a total of 420 interviews (questionnaires) were conducted among the enrollees.

A total of 420 interviews (questionnaires) were conducted at the cost of N1, 000 per questionnaire (approximately R40 per questionnaire).

Ten (10) research assistants (RAs) were employed for the study.

- (a) For the quantitative data, 42 questionnaires were administered by one (1) RA over a period of between 3 – 4 weeks at the rate of a minimum of two (2) questionnaires per day. Thus, a RA was paid a sum of N42, 000 (equivalent of R1, 705) for the quantitative data collection.
- (b) For the qualitative data, four (4) interviews were conducted by a RA at the rate of N1, 500 that is, N6, 000 for the qualitative data per RA (equivalent of R = 243). It was estimated that qualitative data collection would be completed within one (1) week. However, this could not

in fact be achieved within one week as earlier planned (it took a long time to secure a favourable time with some of the respondents).

- (c) For the whole data collection, a RA was paid a sum of (N42,000 + N6,000) = N48,000 equivalent is R1,949

Transportation cost was funded separately from the research fund.

3.1.6.1 Sampling strategy

A list of all NHIS accredited facilities in the 11 LGAs of Ibadan was obtained from the NHIS Oyo State Office in Ibadan. Eleven (11) facilities, one (1) facility in each LGA were selected to make a total of 11 facilities selected across 11 LGAs. The facilities were visited, and coordinates of each facility were determined. Two sampling frames, non- faith-based (public and private) and faith-based facilities were generated. Study facilities were selected from the 11 LGAs that made up the study area so as to have a fair representation of them and the enrolees in the study.

For the non-faith-based sampling frame, annual average patient load of all the NHIS accredited facilities in all the 11 LGAs was determined. The same was done for all the facilities on the frame generated for the faith-based facilities. Proportional allocation of the estimated sample size of 420 was done across the two frames (lists) generated.

In the non-faith-based frame, annual average patient load in each of the 11 LGAs was determined. Proportional allocation of the study sample size (i.e 420) apportioned to the non-faith-based frame was done across the 11 LGAs. The facility with the highest volume of enrolees was selected in each LGA into the study. This made the total number of facilities to be selected among the non-faith-based health facilities to be 11. Oluyole, Ona-Ara and Akinyele LGAs each had one (1) faith-based NHIS accredited facility. Non-faith-based facilities were not selected from any of these to make room for the three faith-based NHIS facilities to be selected into the study. Thus, in all, 8 NHIS accredited facilities were selected across 8 LGAs. Proportional allocation of the apportioned LGA study sample was done across the selected facilities.

There were three (3) NHIS accredited faith-based facilities, one facility each in three different LGAs. All the 3 were selected. This was done so as to ensure a fair representation of the faith-based facilities and the enrolees that receive care in these facilities in the study. Proportional allocation of apportioned sample size was done across the three facilities.

Study participants were selected from each of the selected health care facilities in all the facilities (faith-based and non-faith based).

For selection of study participants, a list of NHIS enrolees waiting to receive care in the outpatient section of a selected health facility was obtained from the medical records department of the facility. A sampling frame was generated, a sampling interval was determined, and systematic random sampling was used to select eligible participants. Hospital card numbers of enrolees who were interviewed were documented and kept safe. Individuals (enrolees) who had earlier been interviewed in the course of the study but came back to the clinic for care were deliberately watched out for, so that such individuals were not interviewed a second time. This was done by crosschecking the hospital number of the prospective interviewee (enrolee) in the list of hospital numbers that were earlier generated. Enrolees who were selected for the study but refused to participate were replaced during data collection to ensure the facility allocated sample size was obtained. This exercise was repeated on a daily basis until the apportioned sample was completely interviewed.

Table 7: Proportional allocation of estimated sample size across study LGAs

	LGA	Enrolees population	Selected study participants per LGA
S/N			
1.	Ibadan North	39,756	153
2.	Ibadan Southwest	22,230	85
3.	Ibadan Northwest	23,493	90
4.	Ibadan Northeast	12,392	47
5.	Ibadan Southeast	769	2
6.	Egbeda	5,927	22
7.	Oluyole	2,357	9
8.	Ido	1,188	4
9.	Akinyele	1,959	7
10.	Lagelu	693	2
11.	Ona-Ara	1,357	5
Total		112,121	432

Representatives of other stakeholders (health facility managers or the facility designated desk officer, NHIS official, and HMOs) were selected into the study as follows:

1. Coordinator of the NHIS in Oyo State was selected for interview, that is, a maximum of one (1) NHIS official.

In the non-faith-based sampling frame, interviewees were selected as follows.

2. One (1) facility designated NHIS desk officer in each of the 8 facilities selected for the study was selected and was interviewed.
3. The same process (as in 2 above) was applied in the selection of the HMOs. In instances where a particular HMO procure health services for more than one (1) facility, that HMO was not selected more than once. Eventually a total of five (5) HMOs were interviewed.
4. One (1) enrollee was selected per LGA (i.e. a total of 8 enrollees) for the qualitative interviews, using the same selection process as was used in selecting NHIS desk officers and the HMOs.

Thus, a maximum of twenty-two (22) people from across the stakeholders were selected for the qualitative interview among the non-faith based health care facilities.

In the three (3) faith-based facilities, the same approach in the selection of facility-based NHIS desk officers and HMOs was adopted. Two (2) HMOs were eligible for the interview here.

Thus, a maximum of eight (8) people from across the stakeholders was selected for the qualitative interview among the faith-based health care facilities.

In all, for both non-faith based and faith-based, a maximum of thirty (30) people were interviewed.

3.1.7 The person of the researcher and the research assistants

The person of the Researcher

The researcher is a medical doctor with specialization in health policy and financing of public health medicine. He graduated from the Obafemi Awolowo University in Ile-Ife, Nigeria. He had a master's degree in public health from the University of Ibadan, Nigeria. He attended the London School of Economics and Political Science/London School of Hygiene and Tropical Medicine for a Master of Science degree in Health Policy, Planning and Financing. Much earlier, he successfully completed a residency training in public health from the National Postgraduate Medical College of Nigeria. He has certificates in short courses in health economics from the Royal Tropical Institute, Amsterdam, The Netherlands, the World Bank and a certificate in improving the Quality of Health Services from Harvard University School of Public Health, USA.

He worked as a house officer at the Obafemi Awolowo University Teaching Hospital Complex, after which he had a compulsory one-year National Youth Service when he worked as a medical officer. Thereafter, he worked in private hospitals for some years before taking up a job with a local government as a Medical Officer of Health for a period of three years. He also worked with a NGO, fhi360 NGO for a period of three years in the capacity of a public health expert. Currently, he is a lecturer in the College of Medicine, University of Ibadan, Nigeria and a consultant public health physician to the University College Hospital, also in Ibadan. He had no role outside of the UCH, therefore there was no opportunity for him to influence the respondents' responses. University College Hospital Ibadan is not one of the study sites.

3.1.7.1 Researcher's roles in the study

The PhD Candidate owns the study idea and developed it. He took the lead in contacting necessary stakeholders such as the NHIS, HMOs and the hospital managers to explain the purpose of the study, obtained permission to collect data and introduced trained research assistants (RAs). Qualitative data analysis which included coding and thematic analysis were done by the PhD Candidate. Overall supervision of the data collection and management were undertaken by him.

Researcher's reflexivity

This research work was brought about following findings of a published study of previous research work conducted in the health insurance industry of Nigeria by Adewole and Osungbade (72). In the study, it was discovered that three-quarters of enrollees under the present NHIS accessed care from about one-tenth of available accredited health care facilities. This pattern was similar in all the six (6) states of the southwest of Nigeria. These findings brought about the question of what the factors were that were responsible for the skewed distribution of enrollees across NHIS accredited health care facilities in the southwest of Nigeria? The assumption was that choice of health care facilities and possibly the engagement and partnership of the NHIS with these providers was as a result of quality of care, especially the technical aspect of quality available in these facilities. That is, enrollees patronised facilities that were deemed to have better quality of care. This also suggested that the majority of the available health care facilities were of poor quality and thus, the few that were good enough had a high volume of enrollees unlike facilities with poor or low quality of health care services.

Trustworthiness of the data

Research Assistants were carefully selected for the study by the PhD Candidate. Eligibility criteria for a RA were considered and outlined. This was also strictly adhered to. An individual RA had a graduate degree in public health, and experience in both quantitative and qualitative data collection. RAs were re-trained in communication skills, attention to detail, critical thinking, ability to maintain quality, personal safety in the field, including prevention of physical assaults, food and personal hygiene and technical skills including statistical and graphical analysis of data. The training also included ability to maintain quality, planning and scheduling of appointments with study participants, interviewing techniques and data collection and transcription, challenges and how to overcome them. RAs were trained on basic principles of research ethics with an emphasis on confidentiality of shared information, benevolence, benefits, and risks among others (216). Training was conducted by the PhD Candidate.

Hard copies of both quantitative and qualitative data for this study were printed and distributed to the RAs. An explanation of the purpose and objective were given to them. After this, the content and the meaning of the questionnaire and IDI guide were explained to them and discussed. Questions and comments were entertained, and useful amendments were made to the data collection tools as appropriate.

RAs were instructed to do role play using the same data collection tools. Comments were entertained and appropriate amendments made. After this, field pretest of the data collection tools was carried out in other LGAs outside of the study sites. A review of the pretest results was made where individual RAs shared his or her experience. Challenges experienced and how they were solved or how best to solve such in future were shared so that all could learn. Appropriate amendments were made to the data collection instruments before a final version of the instruments were printed out.

During this period, financial remuneration, logistics including transportation and safekeeping of collected data were discussed and agreed upon. The PhD Candidate provided food and drinks as appropriate throughout the period of the training. The exercise lasted a period of five (5) working days.

Research assistants

Research Assistants (RAs) with background in geography and who have experience in the use of GPS were employed to obtain the coordinates of selected NHIS accredited facilities. The PhD Candidate carried out mapping to construct appropriate geo-spatial pattern of variables of interest. Graduates who were experienced in quantitative and qualitative data collection were recruited. Recruited RAs transcribed audiotaped interviews. Quantitative data analysis was done by two data analysts recruited for that purpose.

3.1.8 Data collection methods

GIS

3.1.8.1 Mapping

Understanding the distributional pattern of accredited NHIS facilities involved mapping the locations of these facilities. The mapping was accomplished with the aid of GPS devices using the ArcGIS Software. The list of all accredited NHIS providers within the 11 LGAs of Ibadan (5 urban, 6 semi-urban) was obtained, each of them was visited and their locations mapped using the GPS. Graduates with a geography background were recruited and trained in the use of the GPS. They helped with the collection of the coordinates, that is, latitude and longitude, of all accredited NHIS providers in the study area. The coordinates obtained were plotted using GIS software (ArcGIS). Information about individual enrollee's places of residence were obtained. The name of the nearest NHIS facility to place

of residence was also obtained; this was corroborated with the name of the nearest NHIS facility to the place of residence obtained from the list made available by the NHIS office. The name of the bus stop or a major landmark or street closest to places of residence of enrolees was obtained during the interview. The nearest bus stop to the residence of a particular enrolee was mapped rather than the actual residential building for purposes of maintaining confidentiality.

3.1.8.2 Observation of facilities, equipment and infrastructure

A checklist was used to assess the health human resources capacity, clinical and laboratory services available and rendered, availability and functionality of infrastructure, equipment, drugs and other consumables. All data collected were used to assess the gap between the expected services as prescribed by the NHIS and the actual services rendered under the Scheme.

3.1.8.3 Observation of client-provider interaction

A standardized validated checklist was used to observe and assess provider-client interaction in selected outpatient clinics to evaluate the process of service delivery. Information on the extent and quality of client-providers' interaction, adherence to standard diagnosis and treatment protocol, waiting area and time were also assessed.

3.1.8.4 Stakeholders' interviews

Face to face interviews were conducted with key health personnel in selected health facilities. Research assistants who were experienced in quantitative and qualitative research data collection were employed and trained specifically for this study. Interviews were conducted in the English Language. The possibility of an occurrence of conflict of interest was acknowledged. However, certain steps were taken to minimize this as much as possible and as follows:

1. Research assistants were trained and made to realize this possibility.
2. Feedback from study participants during qualitative and quantitative interviews
3. During the conduct of qualitative interviews for the NHIS desk officers and the HMOs, body language that might serve as clues to the true quality of care situation were watched out for and recorded accordingly.
4. A checklist for facility infrastructural assessment, including an observation checklist for provider-client interaction, revealed more about the true situation of quality of care in the facilities. The

study triangulated data from all these sources to draw a reasonable conclusion about the quality of care in the facilities.

5. Before all the above steps, NHIS desk officers and the HMOs were adequately sensitized about the importance of the need to be honest with their responses and that the data collected from them would not be used to penalize them in any way.

Transcription and recording of the interviews on audio tape were done with the consent of the interviewees. Backup of the audio interviews was done through note taking by assigned research assistants. Interviews were conducted at a venue and time suggested by the study participants.

Stakeholders that were interviewed were as follows;

3.1.8.5 Health providers' interview

The manager (or NHIS focal person) of a selected facility was interviewed using a structured in-depth interview guide to assess the availability of material, equipment, drugs and other necessary infrastructure. The categories, competencies of, and motivations of available health personnel were assessed.

3.1.8.6 Client interview

Client Exit Interviews were conducted to assess enrolees' satisfaction with care. A semi-structured, interviewer-administered questionnaire was used to collect the quantitative data. The questionnaire was designed to obtain information about the knowledge of the enrolees on some basics about the NHIS, methods and the process of choice of provider/facility, and assessment of service provision at the facility under the scheme. The content of the Client Exit Interview Questionnaire was modified with the findings from the qualitative interviews that were conducted earlier in the study. One (1) IDI was conducted per LGA with one consenting enrolee chosen from among those who were earlier interviewed for IDI. A consenting, eligible enrolee was purposively selected for this. This tool was to assess the clients' perceptions of waiting time, quality of care including client-provider interaction and other aspects.

3.1.8.7 Health managers, NHIS and HMOs interviews

IDIs were conducted with managers/NHIS programme desk officers of selected health facilities, the HMOs responsible for the purchase of services for the enrolees in the selected facilities and the state NHIS official. Method of enrolees' allocation, effect of skewed distribution of enrolees on efficient service delivery, and roles of stakeholders in the distribution of enrolees were explored. Availability and functionality of physical infrastructure, equipment and consumables such as drugs and other support systems were investigated. The state of information management and other logistics system were requested. Findings from these interviews and the IDIs conducted on the enrolees were used to modify the content of the Client Exit Interview Questionnaire.

Except for the IDIs guides to be used for qualitative data collection, all tools including Facility infrastructure checklist, Client-provider interaction observation checklist and the Client Exit Interview Questionnaire were developed from a review of relevant literature and an adaptation of the joint Demographic and Health Survey (DHS) Service Provision Assessment (SPA) of the United States Agency for Development (USAID) and the World Health Organization (WHO) (217).

3.1.8.8 Pre-test of data collection instruments

The tools were pre-tested among NHIS enrolees in other facilities in another city/town of a contiguous state.

3.1.9 Data analysis

3.1.9.1 Geospatial data analysis

The Geographic Information System (GIS) technique was employed to determine the coordinates and plot the spatial distribution of all the accredited NHIS care providers in Ibadan City (11 LGAs). The distance between the place of residence of study participants and the chosen accredited NHIS care providers was determined. The distance between the place of residence of study participants, their chosen NHIS provider, and the nearest accredited NHIS providers was also determined. The differences in the cost of transportation from one point to the other was also determined.

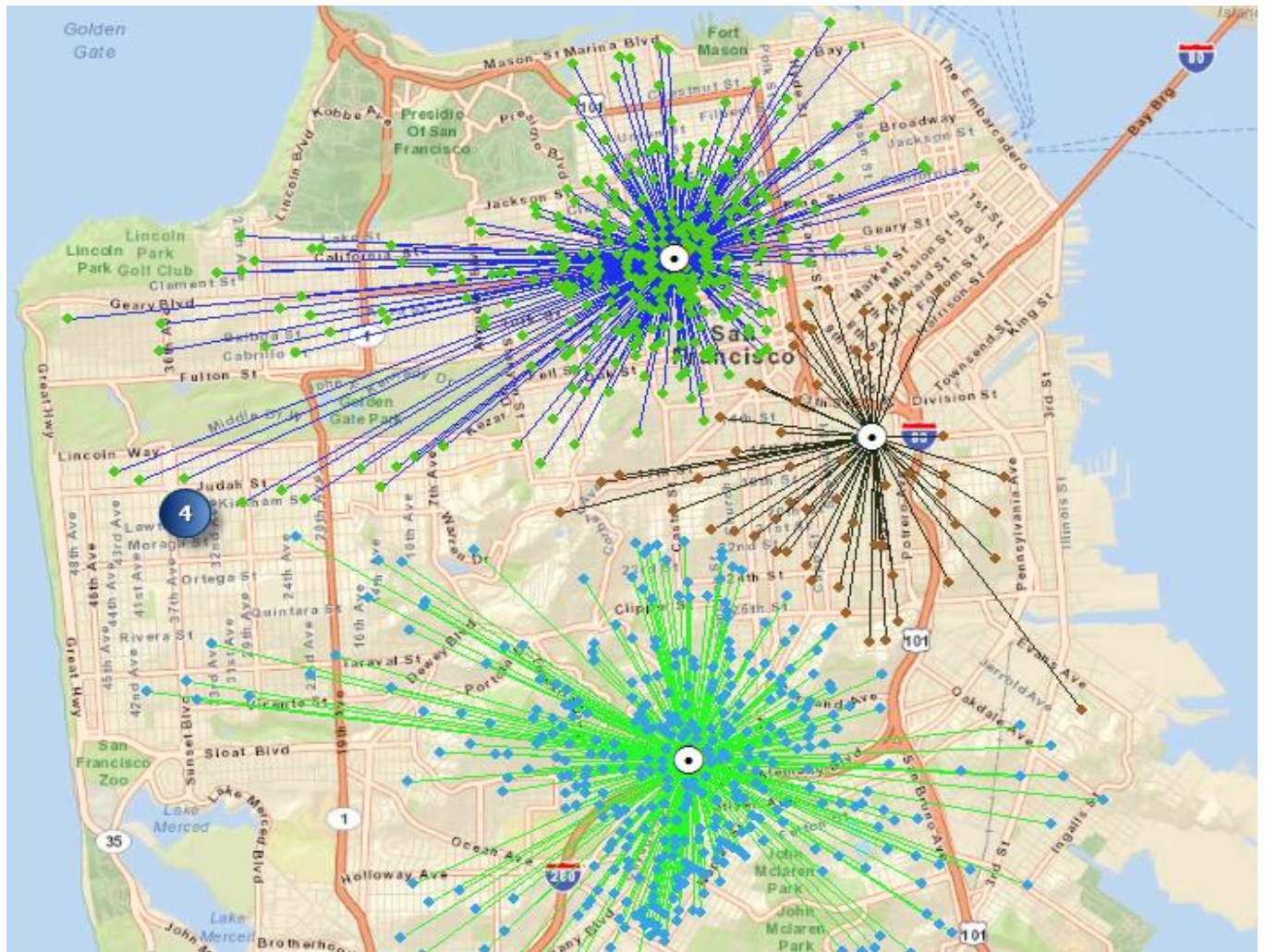


Fig. 17: A model of geo-spatial location-allocation map of health care facilities and residence of health care consumers

3.1.9.2 Quantitative data analysis

Quantitative data were analysed using STATA. Frequency tables were generated. Chi-square test was used for categorical variables, while the logistic regression model was used to determine predictors of variables of interest. Only variables associated with a p value of <0.10 in bivariate analyses were considered eligible for inclusion in multiple logistic regression analyses. The level of statistical significance was set at $p < 0.05$.

3.1.9.3 Qualitative data analysis

Transcribed data were stored in a password-protected computer. The password was known only to the researchers. NVivo version 10 software was used to analyse the data. Data analysis was done using an inductive thematic approach (218). Audio-taped interviews were transcribed, data analysts became familiarised with the data by reading through it many times during which initial codes were generated. Themes were thereafter searched for and generated from the codes (219). The generated themes were reviewed first at the level of the coded data, then in relation to the entire data set. Key themes were identified, while coding of a number of transcripts was done by two people (the lead researcher and his research supervisor), independently to develop a thematic framework. A consensus was reached about coding decisions and themes generated. Where there were disagreements between the two analysts, consensus was reached through debate. Emerging themes were documented and analysed accordingly. Output and reports were generated for specific codes, themes and sub-themes. Themes and narratives were interpreted within the context of the study. Themes were thereafter defined and named, after which the report was written.

Table 8: Study objectives and corresponding implementation plan - a

Objectives	Variables of interest	Data collection strategy	Data analysis plan
<p>1. To describe the geo-spatial distribution of National Health Insurance Scheme facilities in relation to enrolees places of residence</p>	<p>Enrolees volume per facility, coordinates of the health facilities, distance between the clients' place of residence and the patronized health facility (A). Distance between the clients' place of residence and the nearest NHIS accredited health facility (B).</p>	<p>GIS Mapping to assess location – allocation of the places of residence of study participants and the chosen health care facilities. Interviews of selected enrolees to obtain residential locations/nearest bus stop. Distance between enrolees' place of residence and the chosen health facility and nearest health facility were determined using best straight line</p>	<p>ArcGIS software was used to analyse spatial distribution of the health facilities and the volume of enrolees in each of the facilities. Spider diagrams were constructed to display the spatial distribution of chosen health facilities and nearest health facilities to place of residence.</p>

Table 9: Study objectives and corresponding implementation plan - b

Objectives	Variables of interest	Data collection strategy	Data analysis plan
<p>2. To investigate enrolees' (socio-demographic and health related) factors that influence choice of health care facilities</p>	<p>Age, sex, education, socio-economic status, place of residence, type of ailment, and presence or absence of multiple morbidities.</p>	<p>Semi-structured interviewer-administered questionnaire applied on patients</p>	<p>Test of association using Chi square were employed to examine the association between relevant socio-demographic characteristics (SDC)/health related factors and choice of health care facilities.</p> <p>At the level of bivariate analysis, the variables were categorized into Personal decision and Others. Bivariate analysis were used to test association between independent SDC and dependent variable, personal decision (of choice) of health facility.</p> <p>Multivariate analysis were used to identify the predictors of personal choice of health facility</p> <p>However, the unadjusted and adjusted logistic regression were used to accomplish this objective</p>

Table 10: Study objectives and corresponding implementation plan - c

Objectives	Variables of interest	Data collection strategy	Data analysis plan
<p>3. To assess the quality of care (physical infrastructure, human resource capacity, at selected National Health Insurance Scheme accredited health facilities</p>	<p>This involves the observation of the processes involved in service delivery at the facilities such as;</p> <ul style="list-style-type: none"> - client-providers’ interaction in the process of care delivery - adherence to standard diagnostics and treatment protocol - waiting area and waiting time - availability of functional diagnostic and therapeutic equipment - availability of drugs and other consumables -supportive mechanisms /services in the selected facilities e.g. power generators, ambulances, water supply, functional and clean toilets/bathrooms, conducive sitting areas, operating theatre rooms, blood banks, laboratories, pharmacies/drug stores 	<p>Observation checklist to score itemised process of service delivery, availability and functionality of machines and equipment.</p>	<p>Percentage and frequency distributions of the available resources in each of the selected health facilities were determined.</p>

	<ul style="list-style-type: none">- Number and skill mix/competence of available health care workers- types of services available and rendered to patients. Selected National Health Insurance Scheme health care facilities were scored and ranked by availability and functionality of machines and equipment, and quality of service delivery.		
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Table 11: Study objectives and corresponding implementation plan - d

Objectives	Variables of interest	Data collection strategy	Data analysis plan
<p>4. To determine the level of, and factors influencing, satisfaction with service delivery among enrolees</p>	<p>Age, sex, education, socio-economic status, place of residence, type of ailment, satisfaction with availability and functionality of physical infrastructure, health care workers attitude and conduct, time waited to receive care</p>	<p>Semi-structured interviewer-administered questionnaire applied on enrolees</p>	<p>Test of association using chi square between levels of satisfaction and relevant socio-demographic characteristics. If satisfaction is used as a categorical variable (i.e High and Low), logistic regression model will be used when the outcome variables has 2 categories e.g. high and low. Bivariate analysis will be used to test association between independent SDC and dependent variable (High level of satisfaction).</p> <p>Multivariate analysis will be used to identify the predictors of High level of satisfaction.</p> <p>Unadjusted and adjusted logistic regression will be used to accomplish this objective.</p>

Table 12: Study objectives and corresponding implementation plan - e

Objectives	Variables of interest	Data collection strategy	Data analysis plan
<p>5. Explore stakeholders' perceived roles in the observed enrolees' distribution pattern in selected National Health Insurance Scheme facilities</p>	<p>Gain better understanding of the influence of the National Health Insurance Scheme, Health Maintenance Organizations, providers and the enrolees in the choice of care providers</p>	<p>In-depth Interviews guides to interview stakeholders about the process of choice of facilities among enrolees.</p> <p>In-depth Interviews were also conducted among selected patients other than those who were interviewed with quantitative questionnaire.</p>	<p>Data were analysed using NVivo qualitative data analysis software version 11. Data were analysed along thematic areas. Emerging themes were identified and taken note of appropriately.</p>

3.2 Objective specific methods: data collection and management

3.2.1 Objective 1

To describe the geo-spatial distribution of NHIS facilities in relation to enrolees' place of residence.

Data sources

A list of accredited facilities was obtained from the NHIS Oyo State Office, Ibadan. This was corroborated with the list that was obtained from the NHIS zonal office to ensure reliability. Selected enrolees in the 11 LGAs were interviewed with the aid of a semi-structured interviewer-administered questionnaire. During the interview, the name of the nearest bus stop or a major landmark to place of residence was obtained from the enrolees.

Data collection method

Mapping the NHIS accredited facilities:

This is as stated earlier above (Mapping, page 90-91).

Analysis of distributional pattern of NHIS facilities in Ibadan: All the NHIS facilities location were recorded using GPS and subsequently mapped using ArcGIS software. To determine their distributional pattern, the Nearest Neighbour (Rn) Statistic was algorithmically implemented in ArcGIS software (220). The algorithm provides an objective mathematical description of spatial point events in space. In this regard, it describes the spatial arrangement of the NHIS accredited facilities in Ibadan metropolis in terms of whether they are clustered, random or regular. The analysis was computed at 0.05% significance level. Whatever distribution pattern emerges from the analysis has implications for enrolee accessibility and utilization of services provided by NHIS facilities.

Identification of Enrolees Nearest NHIS Facility: The identification of the enrolees nearest NHIS facility was accomplished using the GPS locations of all accredited NHIS facilities in the metropolis. In addition, the approximate coordinates of all the respondents interviewed in this study were also obtained. Residential coordinates of the respondents could not be directly obtained through the ODK because most of the respondents were interviewed outside of their residence. Hence, an accurate description of their residence was requested, with a view to using other methods to estimate their residential coordinates. Each enrolee's street address was searched for on Google Earth satellite

image and the search was enhanced by field knowledge of the name of the bus stops, major landmarks and streets closest to the places of residence of enrollees (obtained during the interview). Such locations were extracted from Google Earth as a single x and y coordinate. Similarly, the locations of health care facilities utilised by respondents (NHIS enrollee as indicated in the questionnaire) were extracted from the list of NHIS accredited facility in the metropolis. Therefore, these three data layers - enrollee's location, locations of NHIS facilities and location of health care facilities typically used by enrollees, were used in the spatial analysis to identify the closest NHIS accredited health care facility to each enrollee's residence and also estimate the distance between the enrollee's location and the NHIS facility being utilised. The *Distance to the Nearest Hub (points)* function in Quantum GIS 3.10 was used to automatically assign enrollees to the nearest NHIS facility while the *Join by lines (Hub Lines)* functions was used to assign enrollees to the NHIS facility they use. These two functions in the QGIS 3.10 provides not only the maps showing the connectivity, but also provide information about the distance between enrollees and the nearest NHIS facility as well as the distance between enrollees and the NHIS facility they have been using. Spider web diagrams that depicts geo-spatial relationship between enrollees residence, patronised health care and closest facilities to the residence were constructed.

Sample size calculation: This is as stated above (page 82 - 84).

Sampling strategy: This was carried out as earlier outlined under sampling strategy above.

Variables of interest

Choice of health facility

The physical location, volume of enrollees and coordinates of all NHIS accredited facilities within the 11 LGAs in Ibadan. Distance between enrollees' places of residence and the patronized health facility (A). Distance between enrollees' places of residence and the nearest NHIS accredited facility (B). Determine transport cost differences between A and B.

3.2.2 Objective 2

To investigate enrolees' (socio-demographic and health related) factors that influence choice of health care facilities.

Data sources

Enrolees were selected as earlier outlined under the sampling strategy above. Principal NHIS enrolees who have been receiving care in these facilities under the scheme for not less than a year were recruited into the study. NHIS enrolees who work in a selected hospital, and those who have been using the facility before the commencement of the scheme were excluded.

Data collection method

Data were collected with the aid of a semi-structured interviewer-administered questionnaire.

- **Sample size calculation:** Sample size is as earlier stated under sample size estimation above. This was proportionately allocated to the selected facilities as outlined above.

- **Sampling strategy:** This is as outlined under the sampling strategy above. This exercise was repeated on a daily basis until the apportioned sample size was completely interviewed.

Variables of interest

Dependent variable: Choice of health facility

Choice of health facility was measured using information on whether the facility patronised had been personally chosen by the enrolee or choice had been determined for the enrolee by someone else. However, at the level of data analysis the choice options were dichotomised as “personal choice” = 1 and 0 if otherwise.

Independent variables

Studies have shown that patient socio-demographic characteristics such as age, sex, education and socio-economic status influence the choice of facility to receive care. Others such as place of residence, type and severity of illness, and presence (or absence) of multiple morbidities have all been mentioned to affect choice of health care facility. Health facility characteristics that influence

the choice of where to receive care are the physical infrastructural facilities, drugs and commodities, health personnel attitude and competence and distance of the health care facility from the health care consumer's residence. The direct cost of care such as paying for health care services may not be an incentive in the choice of health care facility in health insurance schemes, and therefore will not be included as a variable to consider in this study.

Data analysis plan

Quantitative data were analysed using SPSS and STATA Software. Chi-square test was used to determine the association between socio-demographic characteristics and the choice of health care facility. Following this, bivariate logistic regression model was used to examine the relationship between choice of health facility and each independent variable. Thereafter, statistically significant variables at 10% level of significance were entered into multiple logistic regression models to determine the strength of association between choice of health facility and independent variables (predictors). However, the predictors of choice of health facilities were identified at 5% level of significance.

3.2.3 Objective 3

To assess the quality of care (physical infrastructure, human resource capacity) at selected NHIS accredited health facilities.

Data sources

This involved an assessment of the availability and competency of available health human resources, availability and functionality of available machines and equipment, drugs and other consumables. It also involved an observation of provider-client interactions during service delivery, and other processes involved in service delivery in selected NHIS accredited facilities.

The following are the areas of focus:

- number and skill mix/competence of available health care workers
- types of services available and rendered to patients. Selected NHIS health care facilities were scored and ranked by availability of health human resources, availability and functionality of machines and equipment

- client-providers' interaction in the process of care delivery
- adherence to standard diagnostics and treatment protocol
- waiting area and waiting time
- availability and functionality of diagnostic and therapeutic equipment
- availability of drugs and other consumables
- availability and functionality of support mechanisms/services in the selected facilities e.g. power generators, ambulances, water supply, functional and clean toilets/bathrooms, conducive sitting areas, operating theatre rooms, blood banks, laboratories, pharmacies/drug stores

Data collection method

Observation checklist to score and itemise availability and competency of available health human resources, process of service delivery, availability and functionality of machines and equipment, drugs and other consumables.

- **Sample size calculation:** All selected NHIS facilities in the study area (11 LGAs of Ibadan) were assessed.
- **Sampling strategy:** Information about availability and functionality (or non-availability, non-functionality) of health human and material resources were obtained from managers of health facilities and appropriate individuals in these health facilities such as designated desk officers, heads of units or departments and sections. With the aid of a checklist, verification of claims made about these items and human resources were made by physical assessment of these facility resources.

Variables of interest

- Availability and competency of health human resources.
- Availability and functionality of drugs and other consumables, machines and equipment.
- Availability of necessary health care services.
- Socio-demographic characteristics such as age, sex, socio-economic factors that influence satisfaction with rendered health care service.

Data analysis plan

Selected facilities were scored based on a standard criteria using availability of resources. Percentage frequency distributions of the available resources in each of the selected health facilities were determined.

3.2.4 Objective 4

To determine the level of, and factors influencing, satisfaction with service delivery among enrolees.

Data sources

Data were obtained from the enrolees in selected NHIS accredited facilities.

Data collection method

Enrolees in selected NHIS accredited facilities were interviewed with the aid of an interviewer-administered semi-structured questionnaire. Information on socio-demographic characteristics, physical infrastructure, conveniences of the service area, time waiting to receive care and other factors associated with satisfaction with process of service delivery were obtained.

- **Sample size calculation:** This is as stated in sample size estimation above.
- **Sampling strategy:** same as outlined in sampling strategy above.

Variables of interest

Dependent variable: Satisfaction

Satisfaction was measured with 22 questions adapted from a Demographic and Health Surveys (217). The questions were based on services received at the health facilities as contained in the attached questionnaire (Appendix XVI). Test of association between socio-demographic characteristics and level of satisfaction was done. Thereafter, statistically significant variables ($\alpha = 5\%$) were entered into multiple logistic regression to determine the predictor of a high level of satisfaction.

Independent variables

These includes socio-demographic factors such as age, sex, socio-economic status that determine level of satisfaction with care among clients.

Data analysis

Description and measurement of the outcome variable

Satisfaction with health care services in this study was measured with a set of 22 questions.

Principal components analysis (PCA) was used to generate satisfaction index by the use of factor analysis procedure on SPSS. This was based on 22 questions used in the questionnaire for satisfaction assessment. Each of the question was assigned a weight generated through PCA. Thereafter, the satisfaction scores were standardized in relation to a standard normal distribution ($\mu = 0, \sigma^2 = 1$). In the process, 7 components were generated and the first component which had the highest percentage of total variance explained by initial Eigen values (24.513%), extraction sums of squared loadings (24.513%) and rotation of sums of squared loading (20.165) was selected and disaggregated into two categories based on the median (50 percentiles = 0.3323433) index since the distribution of the satisfaction index was skewed (Figure 1). Thus, scores of at least 0.3323433 were rated as satisfactory and unsatisfactory if otherwise.

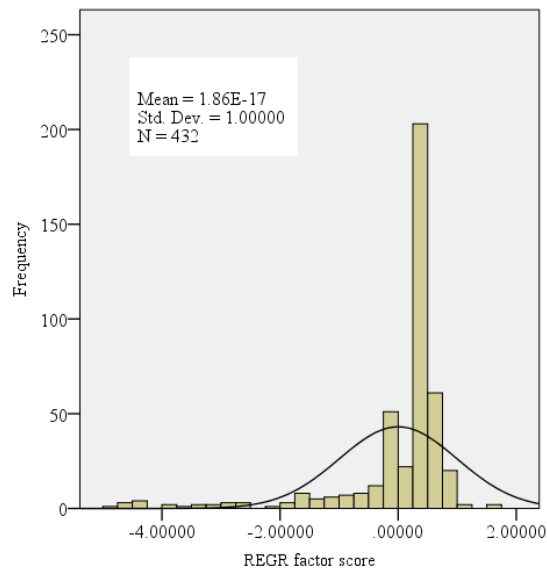


Fig. 18: The regression factor scores from Principal Component Analysis output

Test of association between socio-demographic characteristics and level of satisfaction was done. Thereafter, statistically significant variables ($\alpha = 5\%$) were entered into multiple logistic regression to determine the predictor of high level of satisfaction.

Data analysis

Data were analysed using STATA version 2.0 software. Chi-square test was used to examine the association between socio-demographic characteristics and satisfaction with the health care facility. Following this, variables that were significant at 10% level were entered into multiple logistic regression models to determine the strength of association between satisfaction and independent variables (predictors). However, at this level of analysis, statistical significance was obtained at $p < 0.05$.

3.2.5 Objective 5

Explore stakeholders' perspectives on the perceived roles they played in the observed enrolees' distribution pattern in the selected NHIS facilities.

Data sources

Interviews conducted among stakeholders such as the NHIS and HMOs representatives and the selected NHIS facility managers.

Data collection method

In-depth interviews conducted among selected stakeholders such as enrolees, NHIS and HMOs representatives and NHIS accredited facility managers.

- **Sample size calculation:** This is as outlined under sampling strategy above.

Table 13: Distribution of in-depth interviews by stakeholders in the scheme

The distribution of in-depth interview participants by LGA is as shown in Table 13 below.

LGA	Enrolees population	Allocated enrolees	NHIS desk officers/Health facility Managers	HMOs Representative	Enrolees per facility
Ibadan North	39,756	585	1	1	1
Ibadan Southwest	22,230	327	1	01	1
Ibadan Northwest	23,493	345	1	1	1
Ibadan Northeast	12,392	182	1	1	1
Ibadan Southeast	769	11	1	0	1
Egbeda	5,927	87	1	1	1
Oluyole	2,357	34	1	0	1
Ido	1,188	17	1	1	1
Akinyele	1959	28	1	1	1
Lagelu	693	10	1	1	1
Ona-Ara	1357	19	1	1	1
Faith-based facilities					0
Total	112,121	1650	11	8	11

NB: One (1) NHIS official, who was also the coordinator of the scheme in Oyo State, was interviewed.

Sampling strategy:

- This is as outlined in the sampling strategy above. For enrolees' selection, when a man was interviewed, the next enrolee interviewed was a woman to ensure gender balance in the selection of interviewees.

Variables of interest

Gain better understanding of the likely influence of the NHIS, HMOs, providers and the enrollees in the choice of facilities.

Data analysis plan

Data were analysed using NVivo software as earlier stated above for qualitative data.

Data analysis plan

This is as explained above.

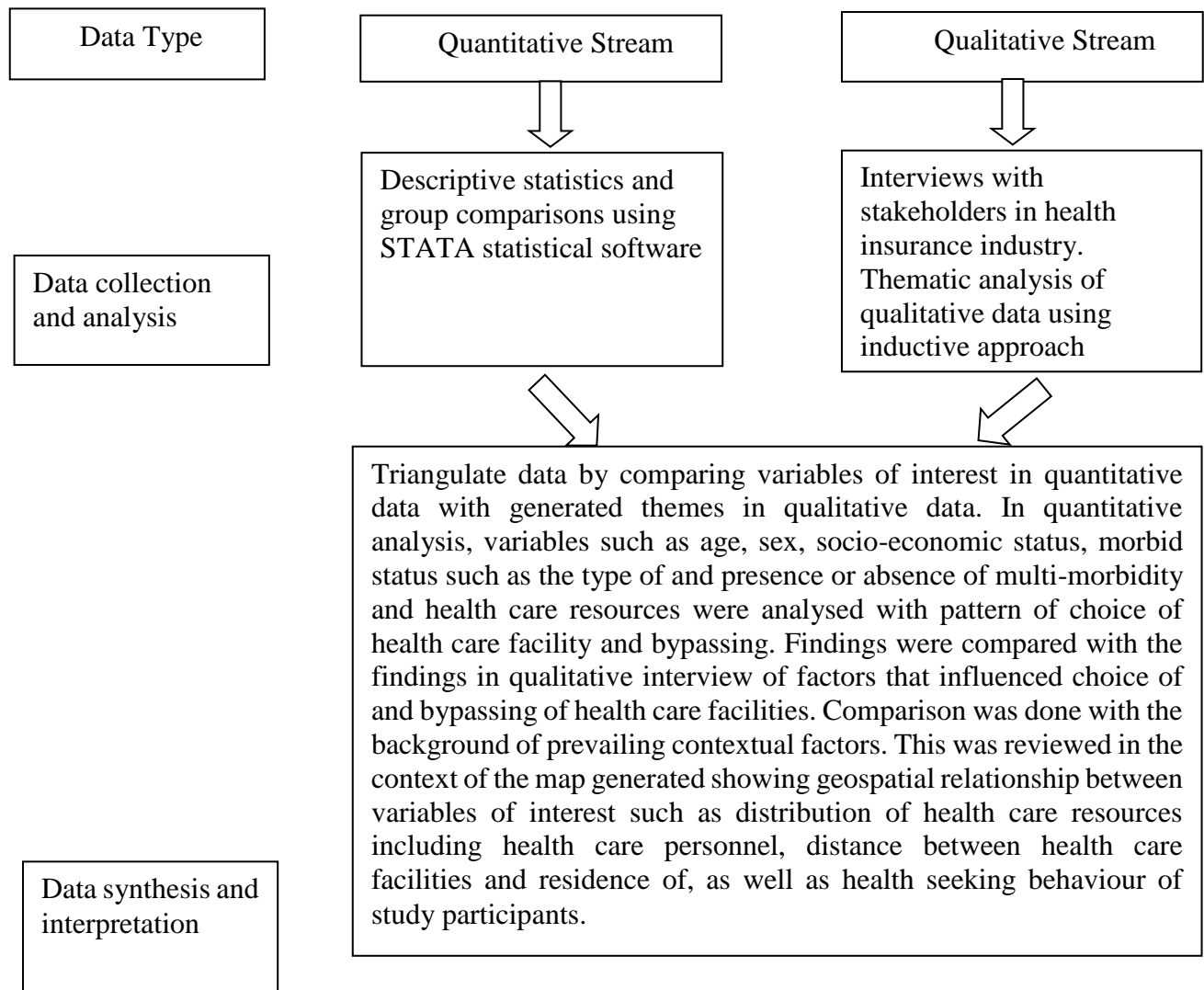


Fig. 19: Synthesis of quantitative, qualitative and geo-spatial data

3.3 Study limitation

Generalization of study findings will be more or less limited to Oyo State as there are some differences in the contextual factors from state to state and from zone to zone. Thus, extrapolating the study findings to the whole country in Nigeria should be done with appropriate level of reservation. There was selection bias since only those who received care in the selected health facilities for the study had the opportunity of being interviewed. Other enrolees who received care at some other health care facilities were left out. In studies that involve GIS technique especially in resource constraint environments like Nigeria, the absence of a central data registry for good quality maps of buildings and other objects of interest is usually a problem. Also misinterpretation of information on geo-spatial maps is a possibility as well as there often being a lack of specificity to differentiate spatial objects from one another. In developing countries especially, dearth of skilled personnel to handle GIS equipment is a common challenge; this is in addition to the fact that GIS software is usually very expensive.

3.4 Ethical considerations

Ethical approval was sought and obtained from the Research Ethics Committee of the University of Cape Town (UCT). Since the data was collected in Ibadan Nigeria, the Oyo State Ethical Research Board was also approached for approval. This was obtained too. These approvals were obtained in line with the guidance as provided in the Declaration of Helsinki at the 64th World Medical Association General Assembly in Brazil in 2013 (221).

Permission to conduct the study was sought and obtained from the Zonal Office of the NHIS in Ibadan Nigeria, the Management of the selected NHIS accredited health facilities and individual HMOs that were involved in the study. The purpose of the study was explained to the NHIS enrolees selected to participate in the study. The same was done for the selected NHIS officials, hospital managers, and the HMOs' representatives.

3.4.1 Autonomy

Participation in the study was absolutely voluntary and no form of coercion or any other undue pressure which might influence participation by eligible participants was used. Participants were informed that they were at liberty to decline at any stage of the study without consequences.

Participants were given the opportunity to discuss their participation in the study with accompanying family members, trusted friends, or their physician before reaching a decision.

3.4.2 Data confidentiality

Data collected were used for research purposes only and were kept confidential on a password-protected computer. Names of respondents were not included in the data collection instrument and thus collected data were not linked to any participant. Interviews were conducted in a setting that ensured privacy and confidentiality of divulged information. There was no traceable identifier on the interview recordings, observational checklists and transcripts. Collected data will not be divulged to others in ways inconsistent with the original intent of the disclosure, without that individual's permission. A common concern in studies that have to do with geo-spatial mapping is security since coordinates generated could be easily used to identify people and thus commit a breach of confidentiality. To safeguard the security of study participants, coordinates of their actual residences were not determined rather, popular landmarks such as bus stops or any other places of interest were used as proxies. Members of the research team, including fieldworkers, research assistants and transcribers, were made to sign a confidentiality agreement that they would not discuss or share research information with anyone other than the principal or other named researchers. Collected data were stored in locked filing cabinets, in a locked office. Computers used for data storage were password-protected and were not linked to any network. Data were coded to remove identifying details. Only the lead researcher and a designated assistant were able to link the code back to the participant's identifying details. The key to the code was kept in a separate location. Only in certain circumstances such as requests from government security agencies, sponsors or regulatory authorities would the password code be broken. Data collected and other important documents were deposited with UCT, for safekeeping, as well as for the maintenance of confidentiality.

3.4.3 Beneficence

Benefits of the study to the participants were explained to them before commencement of the study. Findings from the study will enable major stakeholders such as the NHIS, the HMOs and health care providers to improve the quality of health care service delivery. Feedback will be provided at the end of the study to management of the organisations where the study participants are based. This will be

done so that the gaps identified during the research are noted for suitable intervention by the appropriate stakeholders.

3.4.4 Non-maleficence

There was no physical harm to the participants as there was no area of the study that involved invasive intervention. The minimal risk involved pertains to having to spend a longer time in the hospital environment responding to the study questions. Exposure to a well-planned training session for the research assistants ensured that they had a good understanding of the research and comprehension of the data collection tools and the contents. The data collection tools were also designed to ensure easy and sequential flow of the different components. These steps were to ensure efficient time management during interview sessions.

3.4.5 Informed consent

Written informed consent was also obtained from the participants after the study was explained to them. It was written in simple, non-technical and jargon-free language which was readily understood by the study participants. The purpose of the study, its implications and the need to provide correct responses were carefully explained to the study participants. Authority was obtained from the study participants with the aid of a consent form. The form contained the purpose, benefits, risk of and any potential discomfort arising from the study. It also contained statements about maintenance of confidentiality of study participants, storage of the consent form and the collected data. The form also explained to study participants that there were no financial costs incurred or financial reimbursements from participating in the study. However, a sum of N750 (equivalent of R30) was paid to individual study participants for light refreshment and travel back home. While N250 was enough for light refreshment, it was estimated that N500 was enough for travel back home for individual study participants. It should be noted that study participants were not invited to the hospital for the purpose of the study, they came primarily on their own to access health care, during which consenting individuals were interviewed. Thus, the time spent on the road from home to the hospital and back, as well as the total time spent in the hospital receiving care was not at the request of the research. The only time that was taken by the research was during the 45mins – 60mins interview. The amount that was given to individual research participants was calculated

using the Time, Inconvenience and Expense (TIE) formula as contained in the Department of Health Ethics in Health Research: Principles, Structures and Processes, 2015 (2nd edition) (222).

Furthermore, these individuals were all civil servants who usually would have had to obtain permission to be away from work to enable them to access health care in the health facility. That is, personally, they were not incurring wage loss. The Researcher's Institution in Nigeria offered to support the study with loan-free recording equipment and free internet services as a form of staff development support. The money originally earmarked for the purchase of interview recording equipment and internet services was used to fund the compensation of study participants. Individuals have the right to decline or discontinue participation in the study without any untoward consequences. All enrolees interviewed understand the English Language. Thus, the consent form earlier translated to the Yoruba Language, (and translated back into the English Language to ensure validity) was not used.

3.5 Expected output

The following potential manuscripts are expected to be produced from the PhD thesis.

1. The geo-spatial pattern of NHIS facility patronage in relation to enrolees' place of residence
2. Socio-demographic and health related factors that influence choice of health care providers by enrolees
3. An assessment of the quality of care (physical infrastructure, human resource capacity, at selected NHIS accredited health facilities
4. The level of, and factors influencing, satisfaction with service delivery among enrolees
5. Stakeholders' perspectives on the perceived roles they play in the observed enrolees' distribution pattern in the selected NHIS facilities.
6. Evidence-based policy recommendations to assist in reforming the NHIS in Nigeria.

3.6 Feasibility and contingency plan

This research work was expected to be completed within a 3-year period. As earlier explained above, a total of 420 interviews (questionnaires) were billed to be used at the cost of N1, 000 per questionnaire (approximately R40 per questionnaire). NB: Eventually, 432 questionnaires were administered.

Ten (10) research assistants (RAs) were employed for the study. The two teams were divided into two groups of 5 people per group. For proper coordination, the two teams worked at the same time in two contiguous health facilities.

- a) For the quantitative data, 42 questionnaires were administered by one (1) RA over a period of between 3 – 4 weeks at the rate of two (2) questionnaires per day. Thus, a RA was paid a sum of N42, 000 (equivalent of R1, 705) for the quantitative data collection.
- b) For the qualitative data, an average of four (4) interviews were conducted per one (1) RA at the rate of N1,500 i.e N6,000 for the qualitative data per RA (equivalent of R = 243)
- c) For the whole data collection, individual RAs were paid a sum of (N42, 000 + N6, 000) = N48, 000 equivalent is R1, 949.

Transportation costs for the RAs was funded separately from the remaining research fund. With this outline of study costs and support from my Institution coupled with prudent financial management, the budgeted amount of money was enough. Estimated sample size was achieved in Ibadan, thus there was no need for data collection in neighbouring towns in the state.

3.7 Dissemination plan

Findings of this survey will be made known to the funding Organization (PAMAPS), policy makers and other stakeholders associated with planning and expansion of health insurance schemes in Nigeria. A dissemination meeting will be organized for this purpose. In attendance will be the officials of PAMAPS, UI, NHIS at the zonal and the national levels, HMOs representatives, officials

of State Supported Health Insurance Programme of Oyo State, members of the house committee on health in Oyo State house of assembly, members of the House Committee on health at the national level, representatives of private and public media organizations (electronic and print), members of the public among others. Selected NHIS enrolees in the facilities who participated in the study will also be invited to these presentations. To avoid a breach of confidentiality and protect the identity of study participants, invited individuals will also include enrolees who were not involved in the study. A policy brief summarising research finding will be written. Research findings will be published in peer-reviewed open access journals, and presentations will be made at conferences. It will also be presented at UCT to promote inter-country learning and foster institutional collaboration between UCT, South Africa and the UI, Nigeria. Findings from this study and the content of the current facility selection criteria used by the NHIS will be used to design a realistic National Facility Selection Guideline to replace the current health facility criteria by the NHIS.

CHAPTER FOUR

4.0 Results

4.1 *Objective 1: To describe the geo-spatial distribution of NHIS facilities in relation to enrollees' places of residence.*

In this chapter, the study findings are described under each of the study objectives. Findings reflect the multi-disciplinary approach of the study (geo-spatial, quantitative and qualitative data were reported). An explanatory approach to these mixed methods was used: the quantitative data are presented first, followed by the qualitative data which aimed to explain the quantitative data (212).

Methods and Discussion of Nearest Neighbour Analysis

Spatial pattern of Health Facility in Ibadan was analyzed using Nearest Neighbour Analysis (NNA) statistical algorithm in Arc GIS Software. GPS device was used to determine and record the locations (coordinates) of Accredited NHIS and other Health facilities in the study area. The coordinates were subsequently imported to the ArcGIS software where they were mapped and overlaid on the administrative map of the Ibadan metropolis. It should be noted that the political boundary of the study area was also digitized from a georeferenced map of Ibadan region using projected coordinate system (UTM 31N).

The coordinates of the health facilities as well as the shapefiles of the study area were both saved in the same projected coordinate system (UTM Zone 31 N) for better analytical results. The Average Nearest Neighbour analysis was used to analyze the spatial pattern of distribution of the health care facilities. The result shows that the spatial pattern of health facilities distribution in the study area is clustered (Figure 2). Thus, given the z-score of 9.990117, there is a less than 1% likelihood that this clustered pattern could be the result of random chance. The result of the analysis shows that R_n 0.842974 ($R_n < 1$) was obtained at Z Score of 9.990117. Hence, there is significant clustering of health care facilities in some localities in the Ibadan metropolis. This will result in unequal access to NHIS accredited facilities in the metropolis. Table 14 and Fig. 20 below

Table 14: Statistics of Nearest Neighbour analysis of health facilities in Ibadan

Facility	No. of Facility (n)	Z-Score	P-Value	Observed Mean Dist. (m)	Expected Mean Dist. (m)	Rn-Value	Area of study(m ²)	Pattern
Health Facility	531	-9.990117	0.00000	670.6474	1227.0741	0.842974	3198130000.	Clustered

Source: Author's analysis 2020.

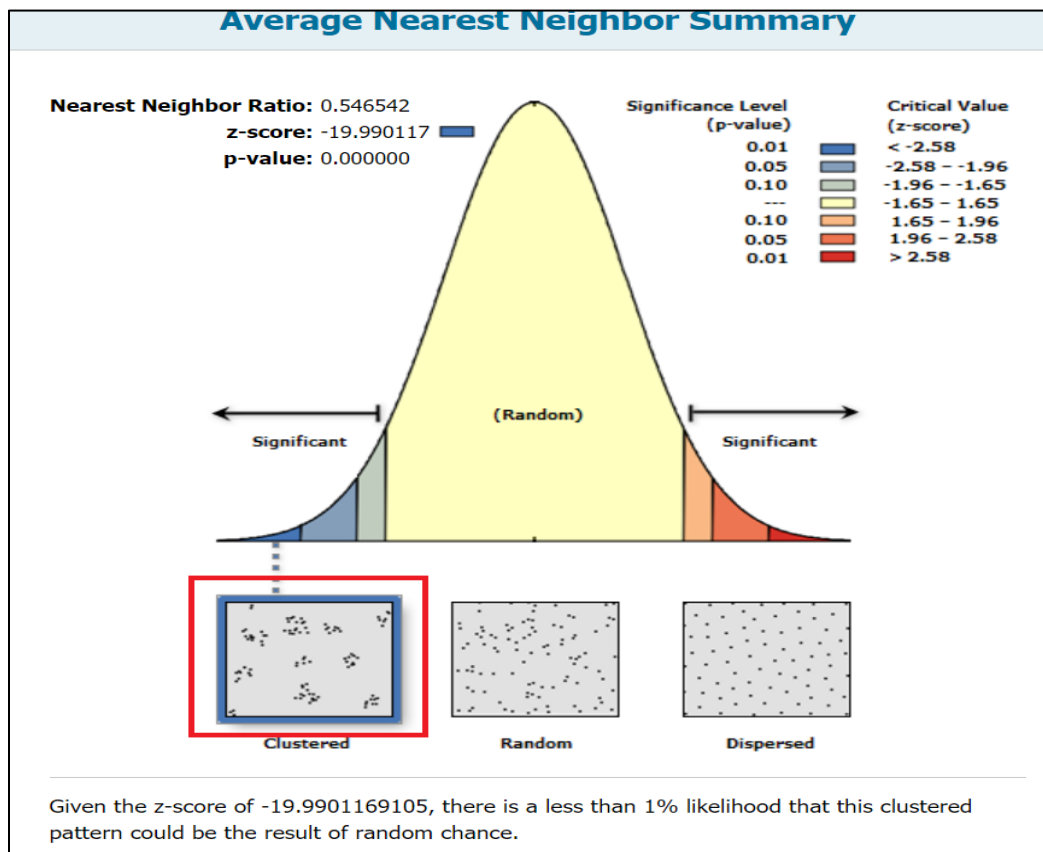


Fig. 20: Spatial pattern of health facility in the study area

Cluster analysis of Health Facility in Ibadan.

To further show the degree of clustering of the result, cluster analysis ‘*Optimized hot spot*’ tool in ArcGIS was used. Hot spot analysis was used to identify neighbourhoods/localities with the clustering. The resultant Z-score is used to identify whether a neighbourhood can be characterised as hotspot or cold spot. A high *z-score* and a low *p-value* for a feature indicates a *significant* hotspot, while, a low *negative z-score* and a *small p-value* indicates a significant cold spot. The higher (or lower) the z-score, the more intense the clustering. A z-score near 0 means no spatial clustering. The result of the analysis of health facilities shows that there is a statistically significant hot spot of health facility at 99% confidence located around the urban areas of Ibadan Metropolis. The significant hot spot result is dominated by features with a high value and are surrounded by other features with high values as well. Away from the urban built up area of Ibadan metropolis, health facility clustering is not statistically significant. Fig. 21 below shows the clustering analysis of health facilities in Ibadan City.

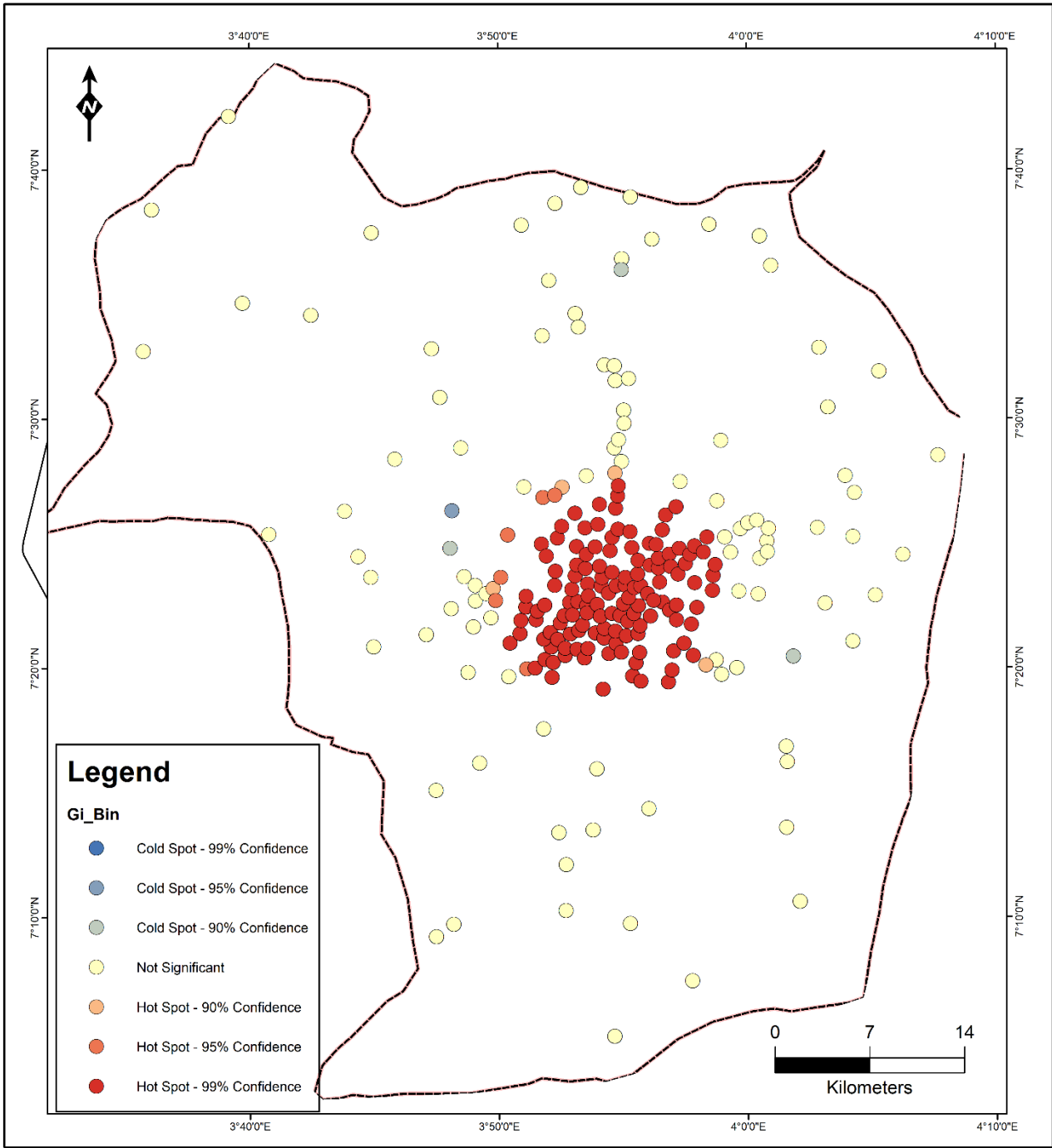


Fig. 21: Clustering analysis of health facilities in Ibadan City

The map below (Fig. 22) shows the geo-relationship between the 11 LGAs that constituted the study area. It also shows various types of health care facilities providing services at different levels of care, that is, primary, secondary and tertiary. These facilities are owned by both the public and the private sectors. From the map, it can be seen that most of the facilities are clustered within the centre that corresponds to the five (5) inner core LGAs of Ibadan. This may not be unconnected with the city growth in itself which tends to be centripetal in nature. It may also have to do with availability of social infrastructure such as better road networks as well as population density, which is more likely to be high in the inner areas of cities than it is in the peri-urban areas. It is important to note that the NHIS does not use primary health care facilities to provide health care for its enrollees, only secondary and tertiary level facilities. Likewise, it should be recalled that this study made use of only secondary level of care facilities to collect data.

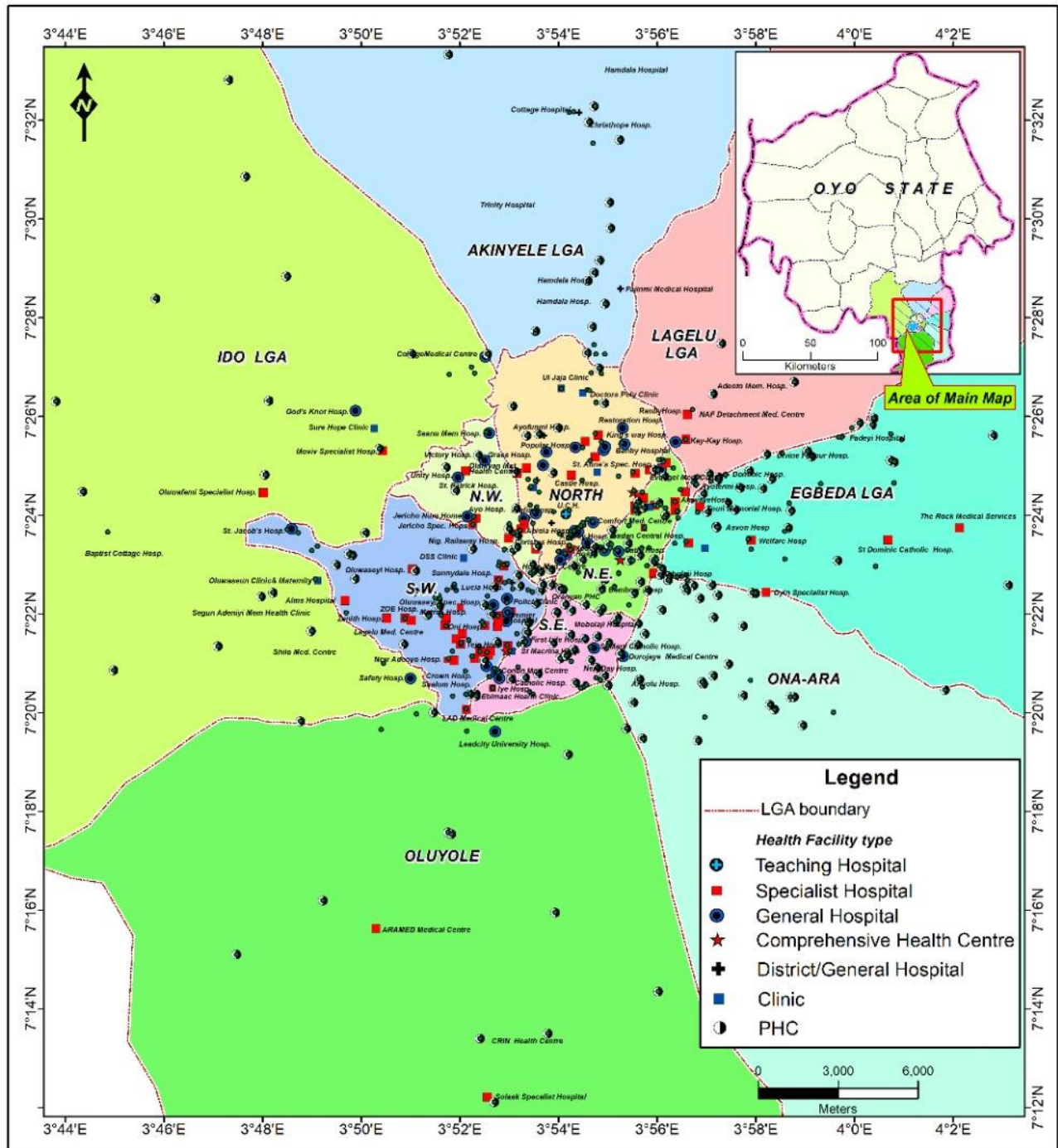


Fig. 22: Types of health facilities in the study area

Fig. 23 below shows only the NHIS accredited facilities in the study area. Again, the majority of these facilities are clustered within the inner 5 LGAs of the city of Ibadan. The same reason as given above suffices to explain this distribution pattern.

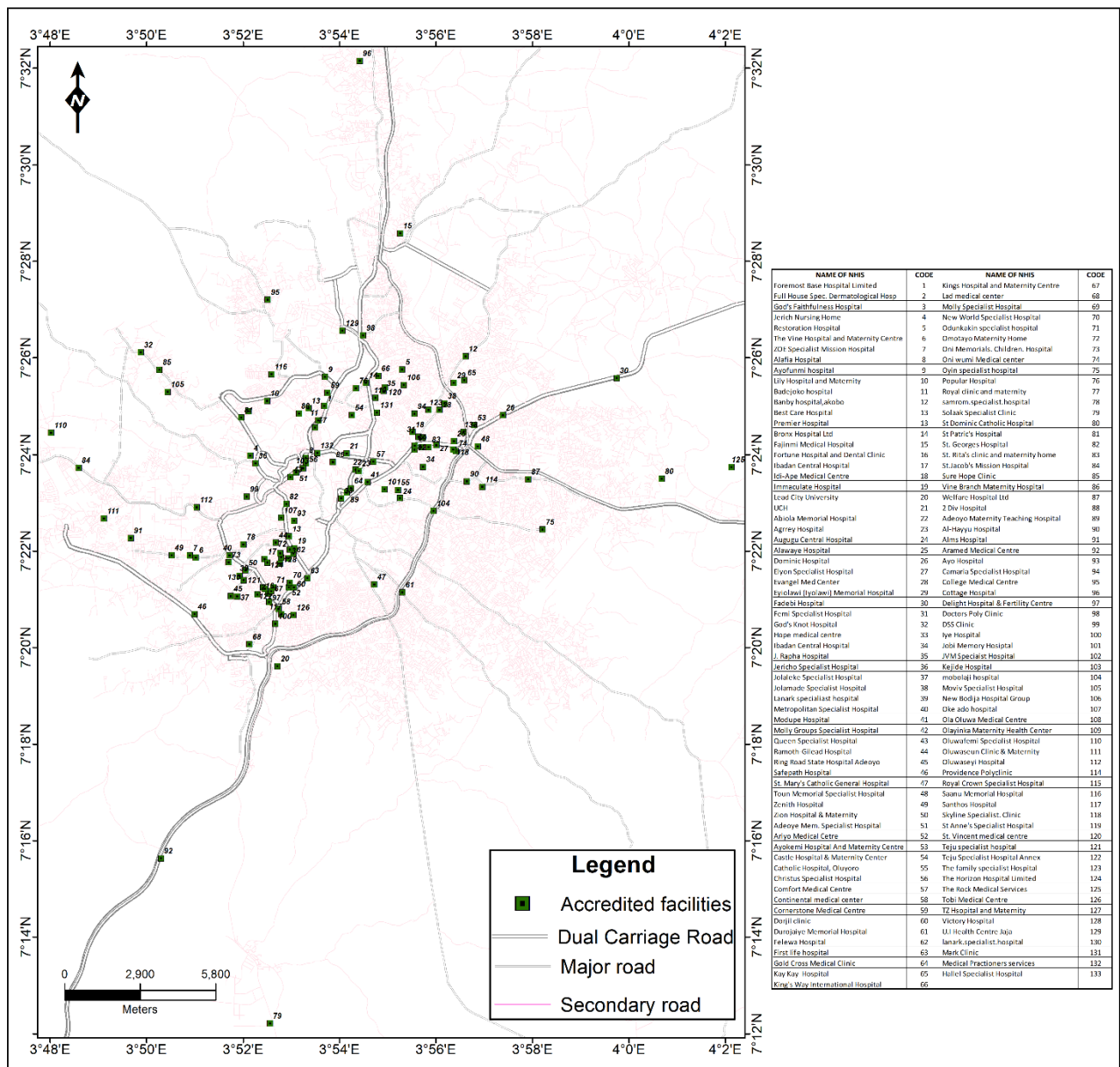


Fig. 23: NHIS accredited facilities in the study area

The map below, Fig. 24, displays enrolees' residences and the facilities where they receive care.

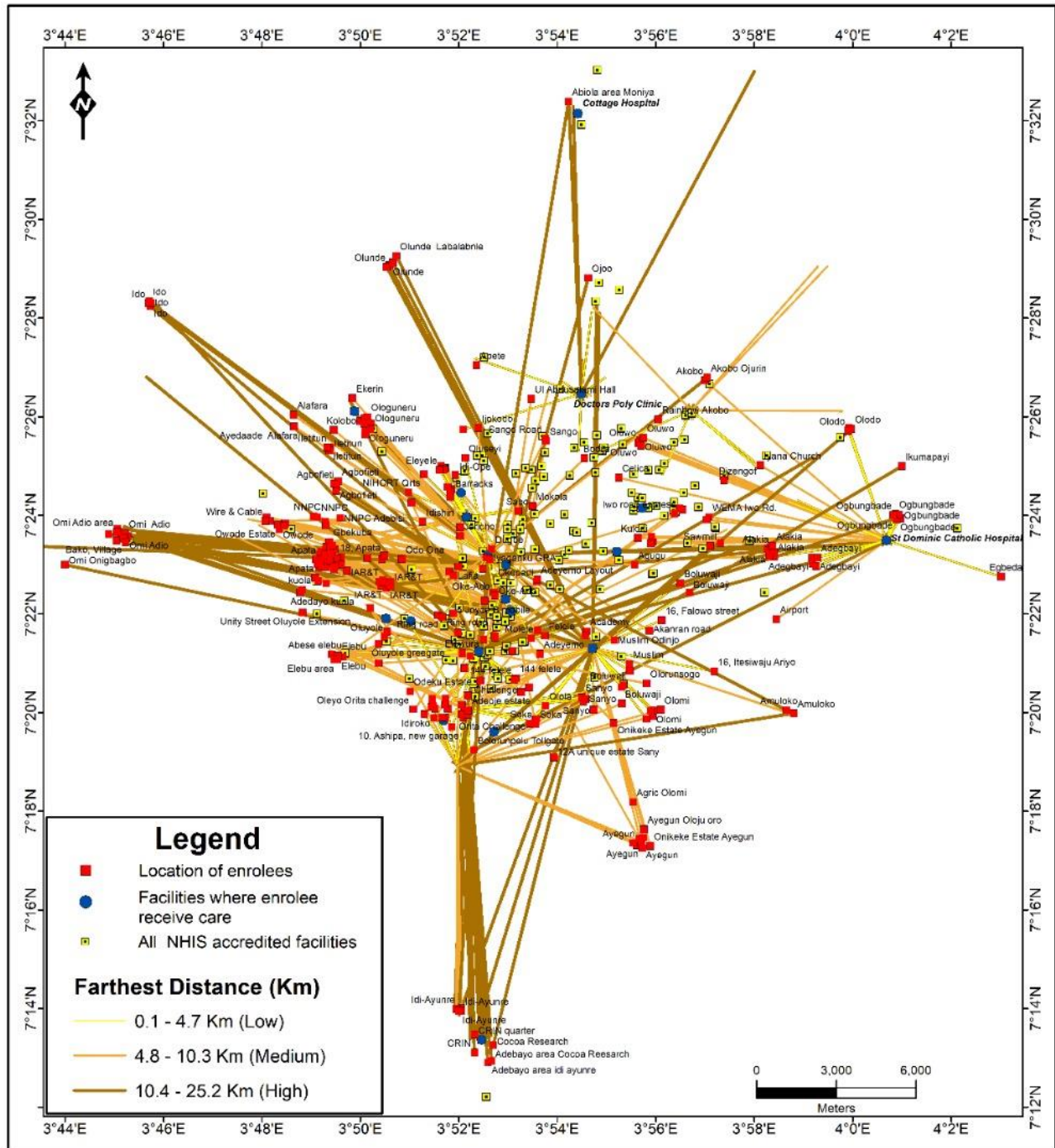


Fig. 24: Spatial relationship between enrolees residence and NHIS accredited facilities for care

This map below, Fig. 25, shows the distribution of enrollees' residences in the study area and NHIS accredited facilities closest to them.

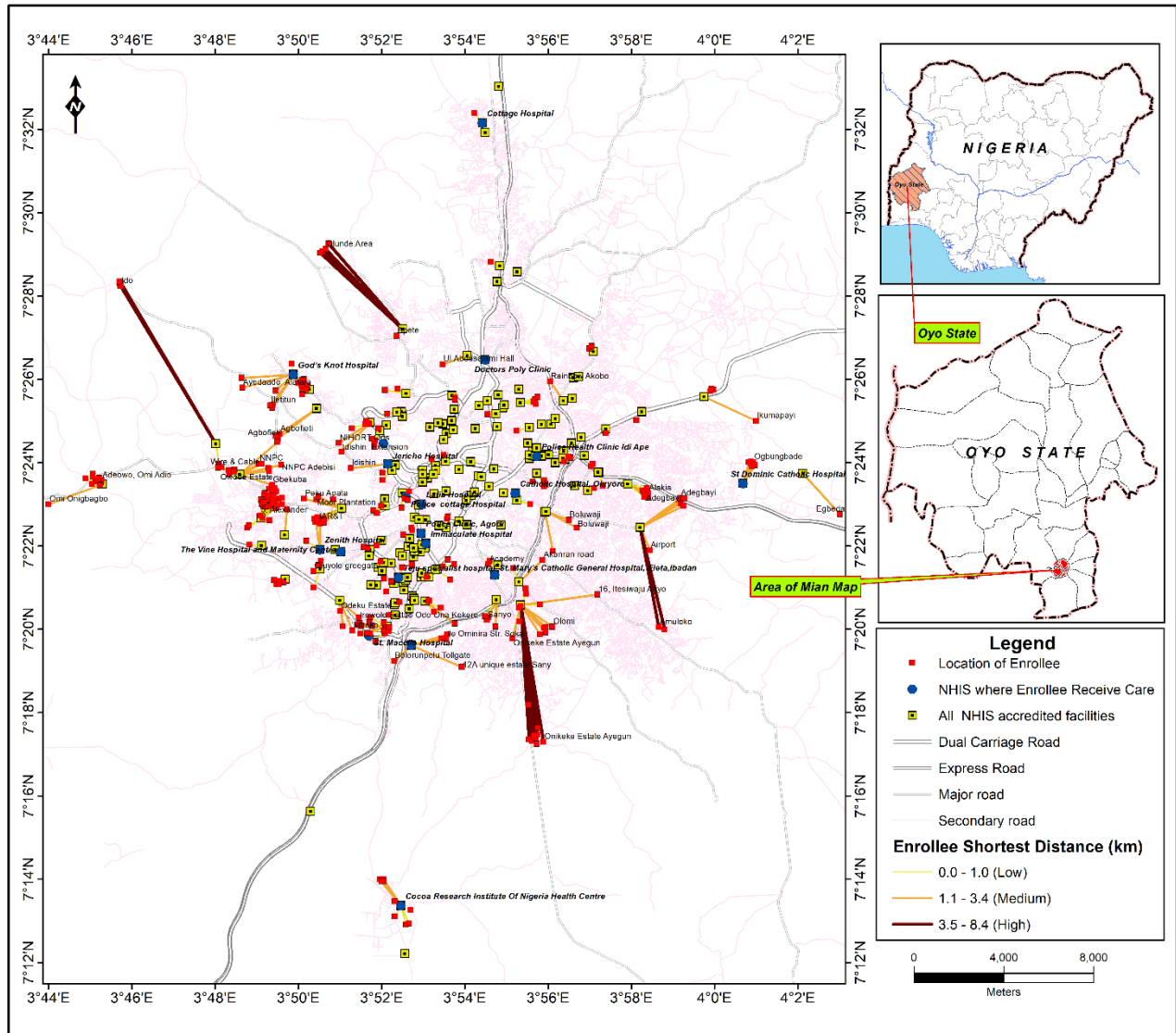


Fig. 25: Spatial relationship between enrollees residences and NHIS accredited facilities closest to residences

The figure below, Fig. 26, is a map that shows the spatial relationship between the NHIS accredited facilities and enrollees residences. The accredited facilities are of two types, those that were the closest to enrollees residence and those that were far away. It shows clearly that the majority of the enrollees did not receive care in the facilities that were the closest to their residence. The heavy traffic lines that shows enrollees traveling long distances to receive care demonstrate this. Factors that were responsible for this geo-spatial pattern of enrollees' travelling across health facilities has been explained in the quantitative and the qualitative data of this study. However, it should be noted that the act of bypassing in the map is multi-dimensional as has been explained in the result of the qualitative data. Table 14 below gives a clearer picture, that very few of the enrollees received care in the health care facilities that were the closest to their residence. Generally, only 26(6.0%) of the enrollees did not bypass. Table 15 below. Overall, the mean distance travelled to facilities was higher among enrollees who patronised far away facilities than those who used nearest facilities ($\bar{x} = -5337.4$, C.I = (-5729.7) – (-4945.2), $p < 0.001$). Appendix III

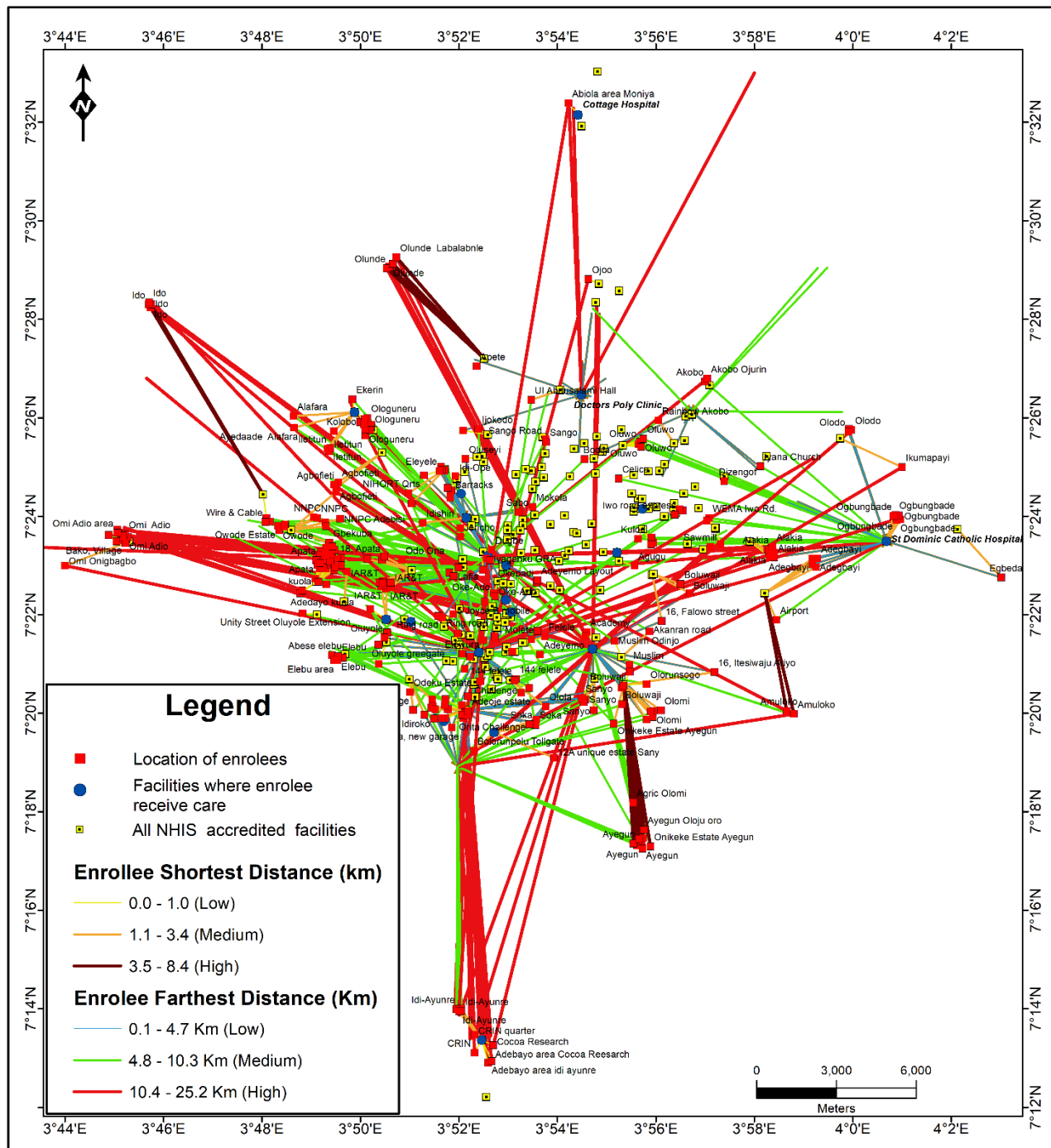


Fig. 26: Spatial relationship between enrolees' residences, closest and furthest NHIS accredited facilities for care

Table 15 summarises the pattern of patronage and bypassing by enrolees in each of the eleven (11) health facilities visited. The number of enrolees who did not bypass Teju, St. Mary, St. Mareello and St. Dominic hospitals were only 1(1.7%), 0(0.0%), 7(18.9%) respectively. The proportion of the enrolees who did not bypass Cottage Hospital were 2 (4.9%), Lafia 0(0.0%), LAD Hospital 9(18.8%), Jericho 0(0.0%) and Immaculate 0(0.0%) respectively. However, at Doctor’s Polyclinic, 5(33.3%) and at Chrisbo Hospital, 2(13.3%) did not bypass these facilities.

Table 15: Enrolees bypassing by study facilities

Serial No	Hospital	Bypassed		Non-bypassing		Total
		No.	%	No.	%	
1	Teju	59	98.3	1	1.7	60
2.	St. Mary	59	100	0	0.0	59
3.	St. Mareello	29	100	0	0.0	29
4.	St. Dominic	30	81.1	7	18.9	37
5.	Cottage (Police Clinic)	39	95.1	2	4.9	41
6.	Lafia	63	100	0	0.0	63
7.	LAD	39	81.1	9	18.9	48
8.	Jericho	14	100	0	0.0	14
9.	Immaculate	50	100	0	0.0	50
10.	Doctor’s Polyclinic	10	66.7	5	33.3	15
11.	Chrisbo	13	86.7	2	13.3	15
Total		405	94.0	26	6.0	431

4.2 Objective 2: To investigate enrolees' (socio-demographic and health related) factors that influenced choice of health care facilities.

The data as shown in Table 16 depicts that more than three-quarters, 331(76.6%) of the respondents were at least 35 years in age. About three-fifths, 263 (60.9%) of the respondents were females, while 344 (79.6%) had a tertiary level of education, 319 (73.8%) were civil servants. Those who were in the high socio-economic status were more, 255(59.0%) compared to those who were in the low income group. About one-third 134 (31.0%) claimed to have multiple morbidities, sought information about the quality of service in the facility prior to enrolment 291(67.4%), and had knowledge of the availability of a closer NHIS accredited health facility to place of residence 147(34.0%). Almost three-quarters (74.1%, n = 320) of the study participants claimed to have personally chosen health care facilities where they currently receive care under the scheme.

Table 16: Socio-demographic characteristics of respondents

Variable	Frequency N = 432	Percent
Age Group		
< 35 years	101	23.38
35 and above	331	76.62
Sex		
Male	169	39.12
Female	263	60.88
Marital Status		
Married	415	96.06
Others	17	3.94
Level of Education		
Less than Tertiary	88	20.37
Tertiary	344	79.63
Occupation		
Civil Servant	319	73.84
Private (including organized private sector)	113	26.16
Socio-economic Status		
Low	177	40.97
High	255	59.03
Presence of multiple morbidities		
Absent	298	68.98
Present	134	31.02
Prior information about quality of care in facility		
Yes	291	67.36
No	141	32.64
Knowledge of NHIS facility closer to residence		
Yes	147	34.03
No	285	65.97
Method of choice of facility		
Personal Choice	320	74.07
Choice based on Advice	112	25.93

The mean duration of stay in the scheme was 6.3 ± 3.8 years. An insignificant proportion, 1.6% ($n = 7$) of the enrollees were voluntary contributors, the rest were from either government establishment or the organized private sector.

Fig. 27 below shows the various sources of influence in the choice of health facility among respondents who claimed to have been influenced (rather than a personal choice) in the choice of health care facilities. More than two-thirds, 78(69.6%) of them claimed that their employers influenced their decision of the choice of health care facility for care as the source. This is followed by friends, others and HMOs at 16.1%, 9.8% and 4.5% respectively.

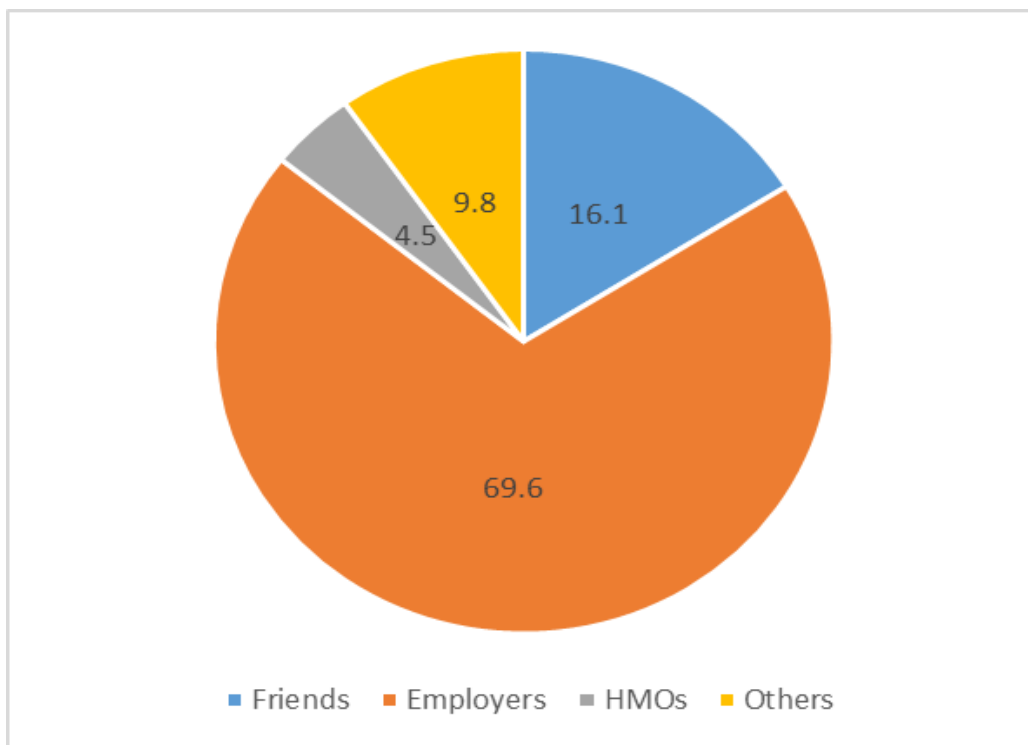


Fig. 27: Sources of influence in the choice of health facility

Only about one-third, 147(34.0%) of the respondents claimed to know at least one NHIS accredited facility that is closer to their places of residence than the health facility where they currently receive care.

Fig. 28 below depicts the reasons given for the choice of the further away facility than the ones closer to their place of residence. Of the various reasons mentioned, availability of needed health care services and trust in the services rendered in the facilities of choice were topmost in 60(40.8%) and 59(39.9%) respectively.

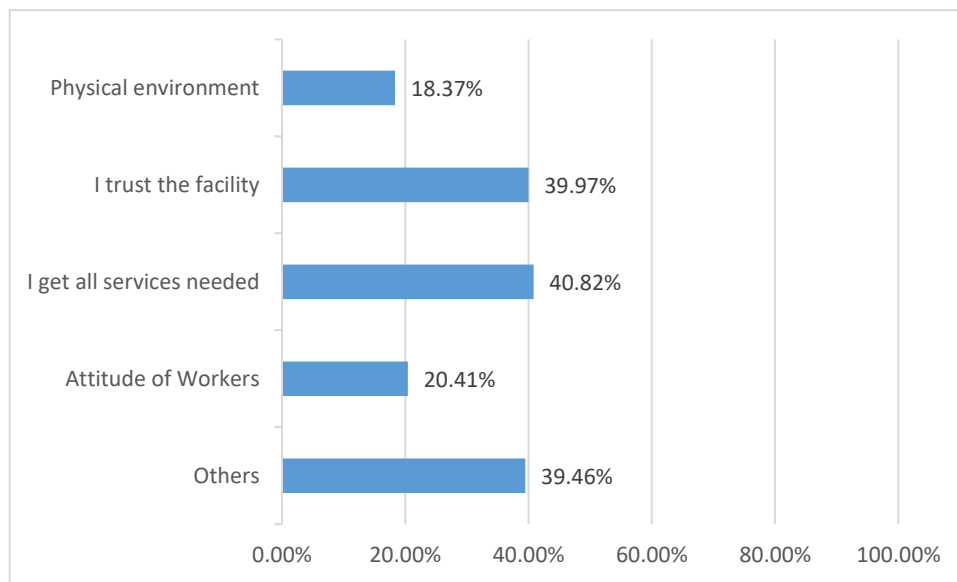


Fig. 28: Reasons for choosing a further-away health facility

NB: Others (reasons different from the suggested ones in the data collection tool)

Of all the respondents, 432(100%), only 118 (27.3%) have ever changed patronage of a NHIS accredited facility to another. The most prominent reasons cited for a change was non-availability of needed health services in 73 (17.0%). However, in Fig 29, the data shows that the most important reasons cited were some other reasons such as the influence of friends and family, relocation from the neighbourhood and change of job in 282 (65.3%). However, only about 110 (25.5%) expressed an intention to change from the current NHIS accredited health facility to another one if there is an

opportunity to do so. The single most important reason cited to prompt a change of facility among others was absence of drugs or diagnostic equipment in 138 (32%) as seen in Fig. 30.

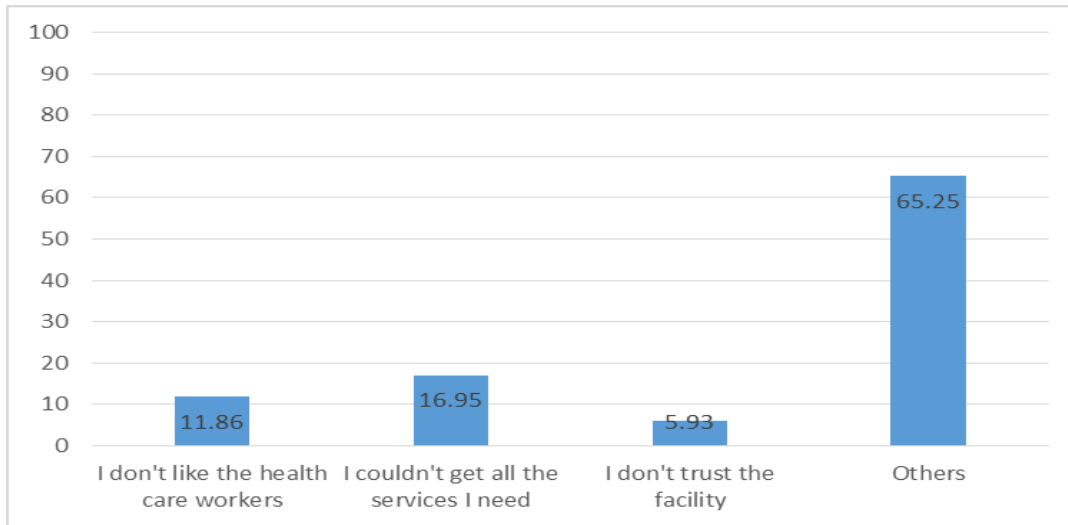


Fig. 29: Reasons for leaving previous NHIS accredited health facility for another facility

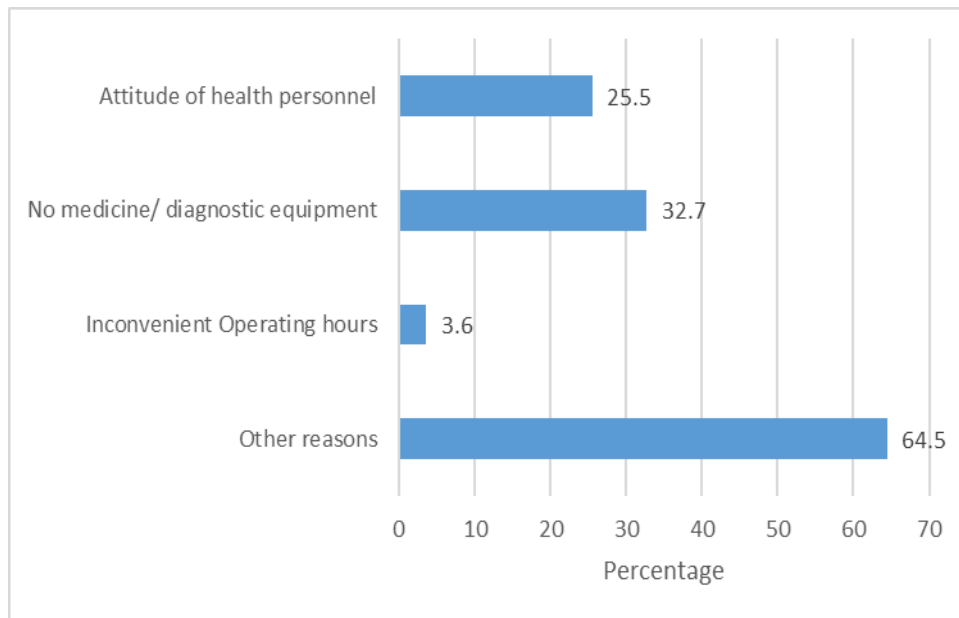


Fig. 30: Reasons for leaving health facility

Table 17 below shows the pattern of choice of health care facilities among NHIS enrollees. Generally, respondents claimed that the health care facilities where they enrolled for care under the scheme were made based on personal choice. However, older respondents and those who attained a tertiary level of education were significantly more likely to do so than the younger adults, and those whose level of educational attainment was less than tertiary level (χ^2 4.11, $p = 0.043$; χ^2 6.27, $p = 0.012$) respectively. Also, choice of health care facilities was statistically significantly high among respondents who were in high socio-economic status compared with those who were in the low income group, (χ^2 12.94, $p = <0.00001$) and as well as those who had multiple morbidities compared with those who did not (χ^2 4.30, $p = 0.038$).

Table 17: Percentage distribution of enrolees according to choice of health care facilities by socio-demographic characteristics

	Personal Choice	Choice based on advice	Total	χ^2	P-value
Variable					
Age group				4.11**	0.043
< 35 years	67(66.34)	34(33.66)	101		
35 and above	253(76.44)	78(23.56)	331		
Sex				0.034	0.855
Male	126(74.56)	43(25.44)	169		
Female	194(73.76)	69(26.24)	263		
Level of Education				6.27**	0.012
Less than Tertiary	56(63.64)	32(36.36)	88		
Tertiary	264(76.74)	80(23.26)	344		
Occupation				0.005	0.941
Civil Servant	236(73.98)	83(26.02)	319		
Private	84(74.34)	29(25.66)	113		
Socio-economic Status				12.94***	<0.00001
Low	115(64.97)	62(35.03)	177		
High	205(80.39)	50(19.61)	255		
Multiple Morbidities					
Absent	212(71.14)	86(28.86)	298	4.30**	0.038
Present	108(80.6)	26(19.4)	134		
Information on quality				0.69	0.405
Yes	212(72.85)	79(27.15)	291		
No	108(76.60)	33(23.40)	141		
Closer facility				2.01	0.157
Yes	115(78.23)	32(21.77)	147		
No	205(71.93)	80(28.07)	285		

***P< 0.01; **P< 0.05; *P< 0.1

At unadjusted OR, older respondents (OR 3.24, CI = 2.52-4.18, $p < 0.0001$) males (OR 2.93, CI 2.07-4.14, $p < 0.0001$), those who had attained tertiary level of education (OR 3.30, CI 2.57-4.23, $p < 0.0001$) and those who were in the private sector (OR 2.90, CI 1.90-4.42, $p < 0.0001$) were more likely to make a personal choice of health care facilities. A similar pattern was observed among respondents who were in the high socio-economic group (OR 4.10, CI 3.01-5.59, $p < 0.0001$), those who had multiple morbidities (OR 4.30, CI 2.71-6.37, $p < 0.0001$), those who had no prior knowledge about the quality of the health facility (OR 3.27, CI 2.22-4.83, $p < 0.0001$) and those who had knowledge of the existence of an NHIS accredited health care facility close to their place of residence (OR 3.59, CI 2.43-5.32, $p < 0.0001$). However, at Adjusted OR, older age group and attainment of a tertiary level of education were significantly associated with a personal choice of facilities (OR 1.66, CI 1.07-2.58, $p = 0.024$) and (OR 1.57, CI 1.02-2.44, $p = 0.043$) respectively. Likewise, the presence of multiple morbidities (OR 1.66, CI 0.99-2.78, $p = 0.053$), as well as being in the high socioeconomic status group were significantly associated with a personal choice of health care facility (OR 1.94, CI 1.24-3.02, $p = 0.003$). Table 18.

Table 18: Logistic regression model of predictors of personal choice of facilities among respondents

Variable	Unadjusted OR			Adjusted OR		
	OR	95% C.I	p-value	OR	95% C.I	p-value
Age group						
< 35 years (ref.)						
35 and above	3.24***	2.52-4.18	<0.0001	1.66	1.07-2.58	0.024
Sex						
Male	2.93***	2.07-4.14	<0.0001	0.91	0.57-1.44	0.69
Female (ref.)						
Level of education						
Less than Tertiary (ref.)						
Tertiary	3.30***	2.57-4.23	<0.0001	1.57	1.02-2.44	0.043
Occupation						
Civil Servant (ref.)						
Private	2.90***	1.90-4.42	<0.0001	1.14	0.68-1.90	0.61
Socio-economic status						
Low (ref.)						
High	4.10***	3.01-5.59	<0.0001	1.94	1.24-3.02	0.003
Multiple morbidities						
Absent (ref.)						
Present	4.30***	2.71-6.37	<0.0001	1.66	0.99-2.78	0.053
Prior information about quality of care in facility						
Yes (ref.)						
No	3.27***	2.22-4.83	<0.0001	1.14	0.70-1.86	0.58
Knowledge of NHIS facility closer to residence						
Yes	3.59***	2.43-5.32	<0.0001	0.73	0.47-1.13	0.16
No (ref.)						

Table 19 below shows that respondents older than 35 years, male sex, being in a marriage union and high socio-economic class were factors associated with bypassing a health facility compared to their respective counterparts. However, these relationships were not significantly associated, χ^2 1.66 p = 0.20; χ^2 0.87 p = 0.35; χ^2 0.17 p = 0.68; χ^2 0.33 p = 0.57 respectively. On the other hand, tertiary education, χ^2 6.29 p = 0.012 and civil service, χ^2 3.81 p = 0.051 were significantly associated with bypassing. Presence of multi-morbidity was weakly associated with bypassing, χ^2 3.10 p = 0.078. At adjusted OR, only male sex and being in the civil service were predictors of bypassing (OR 0.66, CI 0.45 – 0.96, p = 0.029 and OR 0.55, CI 0.34 – 0.88, p = 0.013 respectively).

Table 19: Percentage distribution of enrolees according to bypassing of health facilities by socio-demographic characteristics

Variable	Bypassed		Total	Chi(p-value)
	Yes No (%)	No No (%)		
Age Group				1.66(0.20)
< 35 years	29(28.71)	72(71.29)	101	
35 and above	118(35.65)	213(64.35)	331	
Sex				0.87(0.35)
Male	62(36.69)	107(63.31)	169	
Female	85(32.32)	178(67.68)	263	
Level of Education				6.29(0.012)
Less than Tertiary	20(22.73)	68(77.27)	88	
Tertiary	127(36.92)	217(63.08)	344	
Occupation				3.81(0.051)
Civil Servant	117(36.68)	202(63.32)	319	
Private	30(26.55)	83(73.45)	113	
Socio-economic status				0.33(0.57)
Low	51(28.81)	126(71.19)	177	
High	96(37.65)	159(62.35)	255	
Multiple Morbidities				3.10(0.078)
Absent	104(34.9)	194(65.1)	298	
Present	43(32.09)	91(67.91)	134	

At adjusted OR, only age and being in the civil service were predictors of bypassing, OR 0.67, CI 0.46-0.99, p = 0.046 and OR 0.49, CI 0.31-0.79, p = 0.003 respectively. Table 20 below

Table 20: Logistic regression model of predictors of bypassing health care facilities among enrolees

Variable	Unadjusted OR			Adjusted OR		
	OR	95% CI	p-value	OR	95% CI	p-value
Age Group						
< 35 years	0.55	0.44,0.69	<0.0001	0.67	0.46 - 0.99	0.046
35 and above (ref.)						
Sex						
Male	0.48	0.36,0.62)	<0.0001	1.01	0.67 - 1.52	0.97
Female						
Level of Education						
Less than Tertiary	0.59	0.47,0.43	<0.0001	0.89	0.59 - 1.33	0.56
Tertiary						
Occupation						
Civil Servant	0.36	0.24,0.55	<0.0001	0.49	0.31 - 0.79	0.003
Private						
Socio-economic						
Low	0.6	0.47,0.78	<0.0001	1.14	0.76 - 1.71	0.52
High						
Multiple Morbidities						
Absent	0.47	0.33,0.68	<0.0001	0.82	0.53 - 1.27	0.37
Present						

4.3 Objective 3: To assess the quality of care (physical infrastructure, human resource capacity) at selected NHIS accredited health facilities.

Tables 21 and 22 below depict availability of infrastructural facility at the study sites. Many of the facilities had multiple sources of power supply. All 11 (100.0%) of the facilities visited claimed to have access to the electricity power supply from the National grid, and as well at least, one standby electric power generation plant in addition. Only a few, 4 (36.4%) claimed to have either a solar power source or an inverter electric unit in addition to the National grid and power generating sets. All claimed to have a ventilated improved latrine. Sources of water were many; while almost all, 10(90.9%) claimed to have bore-holes, only 1(9.1%) had a pipe-borne water supply, and 2(18.2%) a covered well in addition to bore-hole water. All 11(100.0%) had a perimeter fence. Except two facilities that had problems with either wall paint or drainage, a particular facility had problems with the roof, ceiling, wall, perimeter fence, facility floor, plumbing and drainage system.

Table 21: Status of physical infrastructure by study site - a

Facility infrastructure	Chrisbo Hosp	Doctor's Polyclinic	Imm. Hosp	Jericho Clinic	Lad Hosp	Lafia Hosp	Police Clinic	St Dom. Hospital	St Marelo Hosp	St Mary's	Teju Specialist
Source of power supply											
National Grid											
Solar											
Generator											
Inverter											
Toilet facility											
Improved											
Source of water											
Covered Well											
Piped Water											
Bore hole											
Fenced											
Leaking roof											
Floppy ceiling											

Green highlight = Yes

Amber highlight = No

Table 22: Status of physical infrastructure by study site - b

Status of facility infrastructure	Chrisbo Hosp	Doctor's Polyclinic	Imm. Hosp	Jericho Clinic	Lad Hosp	Lafia Hosp	Police Clinic	St Dom. Hospital	St Marelo Hosp	St Mary's	Teju Specialist
Dilapidated/fallen wall											
Pot-holed floors											
Faded paint											
Leaking/burst Plumbing											
Blocked/leaking drainage											
Bed capacity											
	15	10	15	30	21	36	52	64	16	177	22

Green highlight = Yes

Amber highlight = No

Table 23: below shows the distribution of health manpower at study sites. Across all the study sites, nurses appeared to be in the highest proportion, followed by physicians and administrative staff. The number of doctors in some of the facilities was quite low. The number of pharmacists in some of the facilities was generally low while others did not have any at all. It should be noted that some of the facilities did not have laboratory staff and medical records officers. The facilities all had at least one driver, which may be suggestive of having an ambulance.

Table 23: Distribution of health manpower by health facility at study sites

Facility Personnel	Chrisbo	Doctors' Polyclinic	Immaculate	Jericho	Lad	Lafia	Police Hospital	St Dominic	St Marelo	St Mary	Teju Hospital
Doctor	6	2	3	24	7	6	11	6	4	15	6
Pharmacists	1	0	0	9	0	4	1	0	3	3	1
Nurse	8	5	2	63	13	18	7	22	14	60	22
Admin Staff	2	0	2	2	4	8	7	1	2	18	15
Lab Staff	0	0	3	4	4	1	6	4	2	10	6
Medical Record officer	1	0	0	15	3	3	6	1	3	12	7
Driver	1	1	1	1	1	2	4	1	1	3	3
Security Personnel	2	0	3	5	2	2	6	4	4	5	6

4.4 Objective 4. To determine the level of, and factors influencing, satisfaction with service delivery among enrolees.

Overall, this study shows that more people were satisfied with care than otherwise. Younger people, individuals with less than tertiary level of education and those from the private sector were more likely to be satisfied with care than their counterparts were. Similar findings were reported with those who claimed no knowledge of the scheme and those who patronised faith-based health facilities; ($\chi^2 = 10.615, p = 0.001$), ($\chi^2 = 4.207, p = 0.040$) ($\chi^2 = 14.863, p = 0.000$), ($\chi^2 = 7.314, p = 0.007$), ($\chi^2 = 11.317, p = 0.003$) respectively. Table 24 below

Table 24: Percentage distribution of respondents by satisfaction by SCD characteristics

Background variables	Satisfaction		Total	χ^2 -value	p-value
	Not Satisfied	Satisfied			
Total	148 (34.3)	284 (65.7)	432		
Age				10.615**	0.001
< 35 years	21 (20.8)	80 (79.2)	101		
35 and above	127 (38.4)	204 (61.6)	331		
Sex				0.052	0.819
Male	59 (34.9)	110 (65.1)	169		
Female	89 (33.8)	174 (66.2)	263		
Level of Education				4.207***	0.040
< Tertiary	22 (25.0)	66 (75.0)	88		
Tertiary	126 (36.6)	218 (63.4)	344		
Occupation				14.863*	0.000
Civil Servant	126 (39.5)	193 (60.5)	319		
Private	22 (19.5)	91 (80.5)	113		
Economic Status				0.001**	0.978
Low	67 (34.2)	129 (65.8)	196		
High	81 (34.3)	155 (65.7)	236		
Multiple Morbidities				0.406	0.524
Absent	105 (35.2)	193 (64.8)	298		
Present	43 (32.1)	91 (67.9)	134		
Sought Info				3.534	0.060
Yes	91 (31.3)	200 (68.7)	291		
No	57 (40.4)	84 (59.6)	141		
Known of NHIS				7.314**	0.007
Yes	63 (42.9)	84 (57.1)	147		
No	85 (29.8)	200 (70.2)	285		
Facility Type				11.317**	0.003
Private	99 (41.1)	142 (58.9)	241		
Public	19 (26.8)	52 (73.2)	71		
Faith based	30 (25.0)	90 (75.0)	120		

* $p < 0.1\%$, ** $p < 1.0\%$, *** $p < 5.0\%$

Predictors of satisfaction with health services are younger age, employment in the private sector, and seeking information about quality of services prior enrolment (OR 1.85, CI = 1.05 - 3.25, $p < 0.05$); (OR 1.84, CI = 1.03 - 3.28, $p < 0.05$) and (OR 1.63, CI = 1.04 - 2.53, $p < 0.05$) respectively. Likewise, having no knowledge of the scheme, as well as receiving care in faith-based facilities predicts more satisfaction with services than their respective counterparts; (OR 1.65, CI = 1.06 - 2.55, $p < 0.05$) and (OR 1.84, CI = 1.09-3.08, $p < 0.05$) respectively. Table 25.

Table 25: Logistic regression model of the relationship between satisfaction and SDCs

Background variables	Unadjusted		Adjusted	
	Odds Ratio	95% CI	Odds Ratio	95% CI
Age				
< 35 years	2.37**	1.39-4.03	1.85***	1.05-3.25
35 and above	1.00		1.00	
Sex				
Male	1.00			
Female	1.05	0.69-1.58		
Level of Education				
< Tertiary	1.73***	1.02-2.95	1.64	0.92-2.90
Tertiary	1.00		1.00	
Occupation				
Civil Servant	1.00		1.00	
Private	2.70*	1.61-4.53	1.84***	1.03-3.28
Economic Status				
Low	1.01	0.67-1.50		
High	1.00			
Multiple Morbidities				
Absent	1.00			
Present	1.15	0.74-1.78		
Sought Info				
Yes	1.49*****	0.98-2.27	1.63***	1.04-2.53
No	1.00		1.00	
Knowl of NHIS				
Yes	1.00		1.00	
No	1.77**	1.16-2.67	1.65***	1.06-2.55
Facility Type				
Private	1.00		1.00	
Public	1.91***	1.06-3.42	1.399	0.72-2.69
Faith based	2.09**	1.28-3.40	1.84***	1.09-3.08

* $p < 0.1\%$, ** $p < 1.0\%$, *** $p < 5.0\%$, **** $p < 10.0\%$, aOR: adjusted odds ratio, uOR: unadjusted odds ratio

4.5 Summary of quantitative results

The geo-spatial maps show that in the study area, there were different types of health care facilities reflecting the three main tiers in Nigeria, that is, primary, secondary and tertiary levels of care.

However, apart from the primary health care facilities which have even distribution across the eleven LGAs (both inner core and peripheral), the majority of these facilities are located in the five inner core LGAs of Ibadan metropolis. This observation may not be unconnected with the geographical history of the city itself. As the city grows and spreads from the centre outwards with the old city centre becoming densely populated compared with the peripheries, it is logical that the establishment of health facilities will tend towards the city centres because they have existed for a longer time with a high population density. It is also instructive to note that a section of the old city centre was better planned in terms of physical infrastructure such as good road networks especially. Also, the teaching hospital, the University College Hospital (UCH), Ibadan, located in the old city centre could be an attraction for the establishment of health facilities. The reason could be because of relatively easier access for referral for difficult cases or leveraging the skills of health personnel, especially physicians, from the UCH when there is a need for such.

It is important to note that the scheme did not make use of primary health care facilities for health service delivery. The reason for this policy decision is because the primary health care facilities were considered poorly resourced and therefore not adequate to provide needed quality care to enrollees under the scheme. Thus, only secondary and tertiary facilities were contracted to provide services under the scheme. The results show clearly that the majority of the enrollees received care across a small proportion of the accredited facilities resulting in lopsided/uneven distribution. In addition, 94% of enrollees bypassed facilities closer to their homes to receive care, although only a smaller proportion of them (34.0%) reported to have done so. The question that this study sought to answer was why and how this situation developed, and what its implications are for UHC coverage. This same pattern was obtained in all the six states of the southwest geo-political zone of Nigeria namely, Oyo (present study site/state), Ekiti, Lagos, Ogun, Ondo and Osun states (72).

Generally, the infrastructure survey shows that the state of physical infrastructure in all facilities is poor across the board: for example, most of the facilities depend on more than one source of power

supply and water supply is mainly from sources other than pipe borne. So it would appear that the skewed distribution could not be explained by differences in physical infrastructure or equipment. High socio-economic status was a statistically significant predictor of personal choice of health facility. This could imply that individuals who made personal choices may be among the few who were voluntary enrollees, and who were financially able, and also took time to choose health care providers of their choice. This is different to the pattern among civil servants, the majority of whom were assigned to available health care providers by the NHIS officials and HMOs at the inception of the scheme. Individuals who personally chose where to receive care may be more satisfied with the care received than those who seemed to have been compelled to receive care from certain care providers.

It should also be noted that younger age and being in the civil service were also predictors of bypassing. While the younger age has been associated with tendencies to explore and travel further from residence in search of better quality health services and in the process the predisposition to bypass, civil servants under the present scheme were made to receive care in facilities as dictated by the scheme and thus the reduced likelihood to choose facilities closer to their residence. Bypassing health care facilities may indicate a perceived or real availability of better-quality health care facilities further away from residence. Travelling further away from a specified radius of distance has been associated with poor health outcomes. Factors that were significantly related to satisfaction with services included age, type of occupation (voluntary/civil service) and seeking information about quality of care. However, the identified predictors of satisfaction were age, occupation, seeking information about quality of care, and type of facility for health care.

Respondents who were civil servants were significantly less likely to be satisfied with care in the facilities where they were compelled to receive care. Again, when people are compelled to receive care at certain health facilities that were not of their choice, it is logical that they may not be satisfied with the available services. Likewise, compared with those who sought information, those who did not seek information about the quality of service prior to patronage were significantly less likely to be satisfied. This also could be explained by the fact that the majority of civil servants were compelled to receive care at facilities that were not of their choice, and thus the likelihood was that satisfaction with care would be low. Overall, satisfaction with care was found to be high in faith-based health facilities compared with public and private non-faith based facilities. Qualitative data which attempts

to explain the findings in the quantitative data will be used to provide explanation of the findings of the quantitative and geospatial parts of this study.

4.6 Objective 5: Explore stakeholders’ perceived roles in the observed enrolees’ distribution pattern in selected National Health Insurance Scheme facilities.

4.6.1 Construction of Conceptual Framework, generation of themes, organization and presentation of results

A schematic conceptual framework that summarises the qualitative analysis of the interviews is as presented below (Fig. 31). It depicts all the major and minor themes that emerged from the interviews, in relation to one another, on one page. These findings seek to understand and explain the quantitative findings of objectives 1, 2, 3 and 4 from the perspective of the research participants representing a variety of stakeholders, by adding detail and nuance to the picture that has emerged.

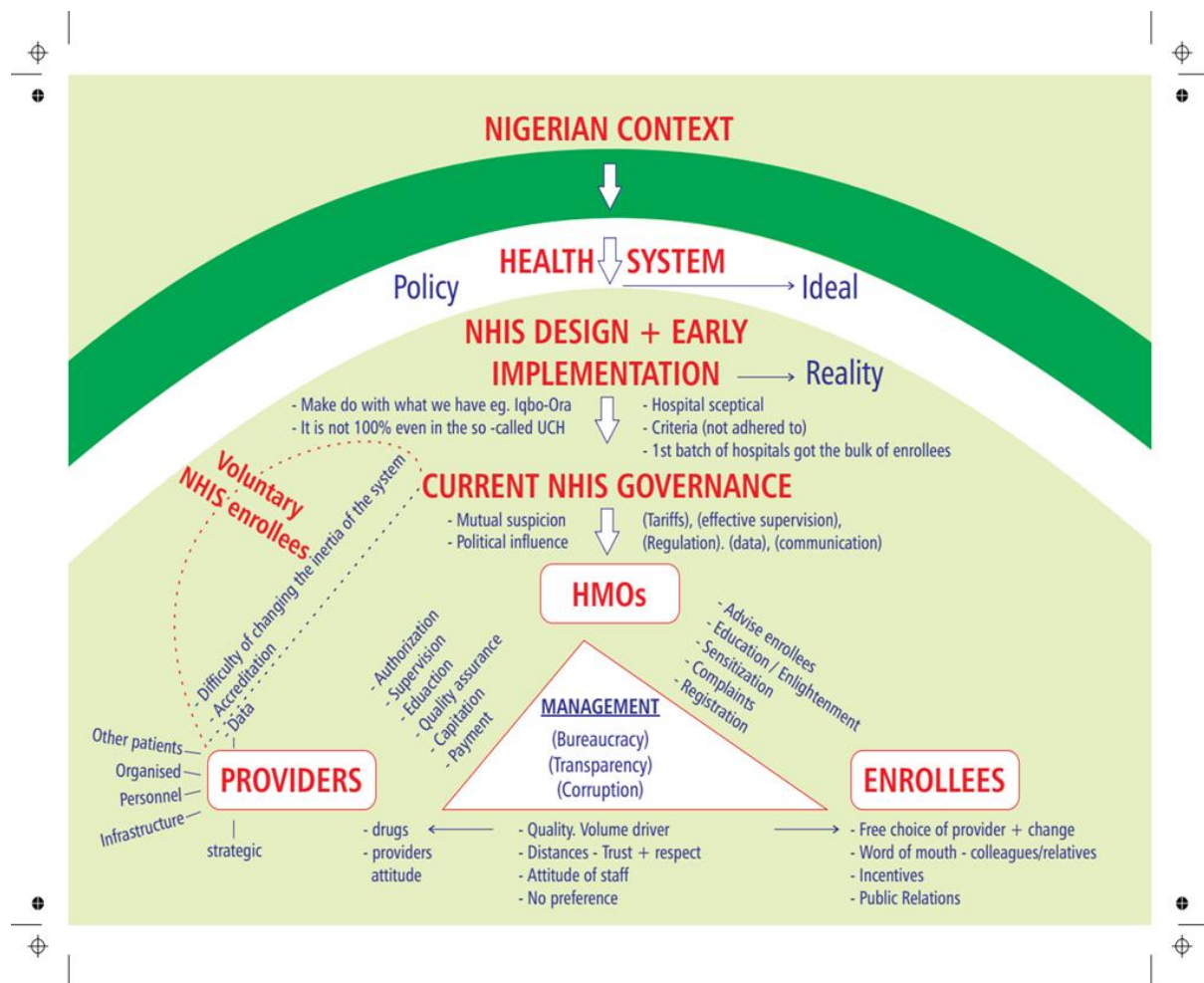


Fig. 31: Conceptual framework of the qualitative results: Relationship, factors and patterns of interaction among stakeholders

The outermost circle represents the country and its contextual environment – value systems, culture, beliefs and norms. These norms and value systems are in a way unique to Nigeria, and it is expected that an average individual should know and accept this, even when they realise that there is a better way of going about or doing things in other climes. For example, a study participant while trying to communicate the difference between what happens in Nigeria as opposed to how it is done in better organized societies said, *“This is Nigeria”* (**Enrolee 1**). In this instance he was referring to a health system that seemed to actively look after its people rather than in Nigeria where the contrary is the case and people are advised not to expect too much but rather take your welfare into your own hands:

“In the foreign countries the hospital will call on their clients to tell them they have an appointment so so so time or to come for check-up but this is Nigeria that is not obtainable, yes we can advise on that but for now client have major role to play in ensuring that they have good health at the right time, that’s my own advice for now” (**Enrolee 1**).

The phrase ‘This is Nigeria’ can be used in another form such as *“That is Nigeria attitude”* (**PP1**) to describe corporate practices or attitudes that everyone believes are bad but have been persuaded to accept as almost normal because regulatory agencies that are supposed to deter such are weak or that those who engage in such practices are connected to corridors of power and thus benefit from the proceeds of illicit deals, and therefore refuse to stop them. To describe the practice of the HMOs delaying the money that was supposed to be paid to health care providers under the scheme by first depositing it in banks for a period of time for it to yield interests to their personal gain, a provider expressed it as below:

“That is Nigeria attitude, I learnt, I am not sure, I learnt they would collect money from NHIS and go and lodge in bank for this monthly dividend or something like that, to make profit before they would finally release to the hospitals, so they will now pay the hospital in arrears, instead of either in advance or on schedule, I think that was what happened” (**PP1**)

The contextual environment includes the political institutions and arrangement, the socio-economic indices, demographic dynamics, structure and pattern. This environment and the factors within it, directly or otherwise, influence the governance and direction of various sectors within the entity called Nigeria. The contextual environment is also influenced by these sectors, as the sectors influence each other in an ever-evolving complex dynamism. Thus, no single system remains as an

isolated, independently functional entity in a silo, but revolves around and influences other systems, so the others revolve around, and influence it in a continuously self-calibrating contextual milieu. One of these sectors is the health system. The health system, like every other institution in the country, has its laid down structure and framework that serves as a guide in its operations of situation assessment, implementation and evaluation of necessary interventions aimed at benefiting the people by improving population health status for growth and development.

As much as possible, these policy guidelines follow ideal global best practices to ensure uniform standard of programme implementation in all parts of the country.

However, in the situation of the implementation of a social health insurance scheme especially in resource constrained environments, through the NHIS, in reality, such guidelines and standards are difficult to follow. Inadvertently, this reality makes the concept of compromise a necessary tool to enable implementation of health interventions in such environments. The framework shows the NHIS governance structure and flow, the relationships between and among different stakeholders – the NHIS, HMOs, providers and enrollees, and what their roles and responsibilities are in the scheme and towards one another. It emphasises the central role of management. These roles and responsibilities highlight the main themes and sub-themes that emerged from the analysis of the transcripts of the interviews conducted under the qualitative aspect of these study. As a summary of the qualitative data, results will be presented under five (5) different main themes, and each theme will have its sub-themes.

4.6.1 Context

4.6.2.1 The tension between the ideal and the reality

Nigeria operates a federal presidential system of government. There are three tiers of governance, viz-a-viz the national, the state and the local government. Roles and responsibilities also differ across the board. The sub-national government operates as semi-autonomous entities in certain ministries. This includes the health sector. Thus, any policy made by the national government in the health sector does not necessarily become binding on the sub-national government. The NHIS is one of those interventions that is not compulsory for the sub-national government to accept. As stated below by a NHIS executive,

“because you find out that in Ghana that you have used as an example, it is mandatory for at least everybody to be under one health insurance cover or the other but in Nigeria, health itself is on the concurrent list, which means the federal government can actually promulgate a law at the federal level and the state and local government are not binding to implement it because of the concurrent nature of health. . . .” (NHIS 1)

The health systems, both the national and the sub-nationals, exist and operate under the overall contextual environment of the country. Ideally, relevant stakeholders in the system make the policy that designed interventional programmes including the NHIS. These stakeholders cut across both the public and the private sectors of the health system. The country has a fairly large health training institution that is responsible for the training and re-training of health care personnel. It also has many health care institutions such as primary, secondary and tertiary health care facilities. By design, the primary health care facilities are the first point of entry into the health system, while the tertiary is the highest level of health care. Ownership of these three types of facilities cuts across both the public and the private sectors. It also important to note that the health system in Nigeria is weak, characterised especially by a high infant mortality rate, maternal mortality ratio and low life expectancy at birth, below the average for the sub-Saharan Africa.

As a result of a prevailing lack of UHC health coverage in the country, and poor population health indices, the NHIS was implemented in the year 2005 (63). It is a public-private-partnership between the NHIS, the HMOs and health care providers (private and public). While the public sector is represented by the officials of the NHIS, and health care providers in public (government owned) health facilities, the private sector are the HMOs, and the private health care providers. The enrolees are the beneficiaries of the intervention. The goal is to achieve UHC health coverage and access to affordable health care as one of the efforts to improve population health. The NHIS direct the health insurance policy by licensing the HMOs which operate the health insurance business. The importance of the role of the HMOs in the scheme is as stated here by one of the respondents *“the HMOs has been given power to do whatever NHIS can do” (NHIS 2)*. The NHIS also accredits health care providers and facilities to provide the benefit packages to registered enrolees, while the HMOs are responsible for the purchase of health care services from health care providers and facilities on behalf of the Scheme for registered enrolees. By this arrangement, enrolees choose preferred health facilities to receive care.

The interview of a NHIS official summarises the relationships between the role players thus:

“the role of the HMOs,, the enrolees are supposed to interact with the provider and the providers with the HMOS and the HMOS relate with NHIS. The only direct relationship we have with providers is accreditation and occasional quality assurance visit but the main relationship should be between the HMOS and providers, the HMOS has been given power to do whatever NHIS....., they also serve as intermediary for transferring fund from us to the hospitals But being a regulator, we oversee the whole stakeholders, we accredit the HMOs just like we accredit the hospitals”. (NHIS 2)

The scheme was designed in such a way as to be implemented and operated with the aid of a standard guideline to ensure its successful implementation, sustainability and maintenance of uniform quality all over the country. However, at the initial stage of the design of the scheme in 2005, the low technical and administrative skills of the NHIS officials became obvious. This seemed to be the major turning point for the scheme. The HMOs demonstrated better knowledge and technical and administrative skills than the NHIS (public) officials. This defect was taken advantage of by the HMOs, referred to as “*regulatory capture*” (AC) as the HMOs arrogated more power in the day to day operations of the scheme to themselves. For instance, while the HMOs have the power to authorise the provision of care at a secondary level to enrolees, they also pay for such services. As a result of this, they often reluctantly approve provision of secondary care to enrolees, and payment for such services takes longer than usual.

A University academic (AC) explained “*regulatory capture*” as follows:

“the challenges we have is that HMOs were involved in writing the regulations that is been used to manage them (HMOs) by the government, government bureaucrat literally hand it over to them to help out to write it., call it regulatory capture and as long as that is what subsist, it would remain ineffective in managing HMOs behaviours, so that is where we are really” (AC)

Other complaints levied against the HMOs were that the regular payment for primary care is not paid when due, unlike at the early stage of the scheme. It was alleged that the money was usually put in a fixed deposit in the bank for a period of months after which the providers are paid. In some cases, the money may not be paid for a long period of time, as referred to by one participant as “*delay[ing]*”

the payment” (NHIS 3). When it is eventually paid, not all the months owed are paid at once, and also the payment does not come with payment advice, i.e. *“pay without proper records”*. When this pattern is repeated for some time, the providers lose count and become confused of the exact month that is paid at a time. The NHIS reported that providers do not have the technical accounting skills to make explicit their grievances, and they have also been accused of either ignorantly providing services that were not authorised or fraudulently doing so or claiming financial reward for services not provided.

A NHIS official explained the process of delayed payments as follows:

“so we heard that some of them (HMOs) takes the money because it is bulk, fix and get some money out of it, so that is why they delay the payment, so they don’t pay within that 3 months,, you know that kind of thing, the other was, what we observed, when they owe like that, they pay without proper records” (NHIS 3)

The consequences often come to bear on the patient enrollees, with inadequate attention and a perceived inadequate treatment rendered by the providers to them. To compound this, the NHIS officials who were supposed to correct the anomalies themselves do not have the requisite skills and capacity to carry out the various tasks under the scheme, thus the HMOs services are necessary for the day to day operations of the scheme. The HMOs seem to realise this and are taking advantage of it, as expressed by an academic.

“.....are you going to be paying providers, are you going to be checking through the things that have been submitted from providers and all of that,if you are going to move forward, so they had the HMOs come in” (AC)

4.6.2.2 Low level of trust in government policies

Low trust in government and government policies had a major impact in acceptance of the scheme, mainly among two of the stakeholders, the providers and the enrolees. Data from the study actually points to the fact that the HMOs benefitted the most in terms of financial gains. While there was no report of the HMOs having reluctance in accepting the scheme, health care providers and potential enrolees were very sceptical about government sincerity in the scheme. This development was not unconnected with disappointment in previous government programmes. According to reports, previous similar programmes including those outside of the health sector seemed to have failed, for example the National Housing Fund. The disappointment following those incidences contributed to the difficulties that the NHIS faced in marketing the scheme to the public and some of the partners especially private health care providers. The majority of the private providers stayed away from the scheme and therefore did not accept to provide care to enrolees in the scheme. The expressed concern was the ability of the government to keep its promises to pay for services rendered to enrolees and the sustainability of the scheme. A number of the respondents cited a scheme outside of the health sector whereby workers were taxed periodically towards a housing project which, according to reports, never materialised. Thus, when the NHIS invited providers to the scheme, the majority did not take up the offer.

“.....but let me pick just one, National Housing Fund that employees have been checkoff is being remitted to, people were not benefitting, how many civil servant have benefitted from federal mortgage bank,but they are not happy, you know runs for a while and collapses, so people were thinking maybe that is how it would start too and fizzle out” (NHIS 3)

To worsen the situation, the scheme was noted for shifting the start-up time which made several of the providers lose enthusiasm for it. Eventually when it did, many of the providers either did not believe it would take off at the time it did or did not believe it would be a sustainable scheme. Thus, only a few of the private providers were available at inception to partner with the government. However, it was also mentioned that a few took the risk of buying into the scheme. It should be noted here that government hospitals were instructed to provide services for enrolees in the scheme.

‘it was since the early 80’s when NHIS was mentioned the first time that we were invited to come and register but they forgot about it again,and by the time they invited people to come and register

again, I didn't believe it and I did not even go there but some were registered that time and those first set of hospitals shared the enrolees among themselves” (PP 1)

4.6.2.3 Skewed distribution of enrolees across NHIS accredited health facilities

Results of the quantitative section of this study show that there was a grossly skewed distribution of enrolees across accredited facilities (Appendix XXI-XXXI). This was also supported by the GIS data and the geo-spatial maps derived from them. The low level of trust in government policies, and the availability of few health care providers partnering with the government in the scheme, contributed to the pattern of distribution of enrolees across available health care facilities. A HMO representative reiterated what was earlier mentioned by a private practitioner (PP 1) above. According to her, enrolees were just assigned to a few health facilities that were available for the scheme at inception. She said that private health care providers especially did not believe in it, and that the public facilities that started the scheme actually did not have any option other than to comply with the government directive.

“but the truth is that when the scheme came on board, some people never believed in it, a lot of providers never believed it could work,, , so the one that believed it could worked were the ones those enrolees were shared to.....” (HMO 1)

It was not just the providers alone who expressed low trust in the scheme. Another stakeholder in the form of potential enrolees also did. The reason stated as being responsible for the low trust among potential beneficiaries was similar to the reason expressed by providers. A senior NHIS official in the southwest zonal office in Ibadan, talked about the nonchalant attitude of potential beneficiaries, such that it took an executive order from the president of the nation to compel them to enrol at the established desk of the NHIS in different establishments. He made mention of a programme in the housing sector that failed which he referred to as an example that made many people wary of accepting any social program from the government. This eventually resulted in the government compelling them to enrol in the scheme and the arbitrary distribution of enrolees across facilities that were available at inception of the programme. Thus, a skewed distribution of the enrolees developed when viewed in the light of the additional providers' facilities that came on board much later. A senior NHIS official painted the picture as:

“....., Yayale Ahmed who was the Secretary to the federal government had to write letters to the ministries on one of the occasions and say if you are not registered, your salary will be withheld”
(NHIS 3)

However, a contrary interpretation as to why there was a skewed distribution of enrolees across health care facilities, was given by one participant who was of the opinion that it was the quality of service delivery in the facilities that was responsible for that, since individuals will always want to patronise health care facilities they perceive as having good quality health care. Unlike what was expressed by previous respondents, he was of the opinion that potential enrolees actively search for health care facilities they believed will meet their health care needs in terms of health personnel and medical equipment

“.....because a lot of these enrolees too, they have done their ground work or research to find out which hospital are good, which hospitals have capacity in terms of workforce and in terms of equipment because what make a hospital is not just the building, it is also in terms of the amenities available and also the human capital, so they have done their research, so that is why you see a lot of people streaming towards a lot of these hospitals that are perceived to have capacity and they neglect those that don't have capacities” **(NHIS 1).**

4.6.2.4 Selection criteria

The process of selecting facilities that will provide health care services to enrolees in the programme is well stated in the operational guideline of the scheme. However, the selection criteria as entrenched in the operational guideline could not be adhered to, as a large proportion of the few facilities that were willing to provide care under the scheme did not meet the selection criteria. This was said to be the situation in almost all the facilities, and the scheme had to make use of the facilities that were available, otherwise enrolees who needed to be cared for would not have any opportunity to access any form of care. Although it was reported that the problem seemed to cut across the board, it was reportedly worse in rural areas. Despite this poor-quality facility infrastructure, the scheme still went ahead to make use of those facilities, and got them accredited to provide services under the NHIS, with the plan to encourage the providers to keep on making efforts to upgrade the facilities from time to time. The issue of the number of health personnel was also assessed, and like the poor facility infrastructure, there was an inadequate number of health personnel in almost all the facilities assessed

for accreditation and the scheme just needed to accept what was available and keep on improving on it.

“ . like I said we have a checklist..... generally the standard of care of service provision in Nigeria is poor.. . . . I’ll give you an instance, we were at Igbo-Ora, they did not have a provider in that town at all and we have some federal civil presence and there was a time someone came to complain that they would have to travel to neighbouring towns, so we have to go and we sample the providers and they were really really poor, but it was obvious that is the standard in that environment and really if you feel you need to give service to the enrolees you have in that locality, whether you like it or not you will just have to enroll the best you can get in that environment even if you feel it is not good enough, but of course the rational thing is to make do with what we have” . (NHIS 2)

4.6.3 Governance and management

4.6.3.1 Mutual suspicion and political influence

Findings from this study are suggestive that mutual suspicion was rife between the policy making level of the NHIS executives and the HMOs, and at the tactical level between HMOs and the health care providers. In addition to this, there was also a subtle supremacy tussle between the NHIS management and the HMOs. A statement made by one of the NHIS officials is suggestive of that; *“well, they are dependent on us, so they don’t have a choice, especially the HMOs” (NHIS 1)*. This statement seem to speak volumes of the less than desired level of trust that exists between the NHIS and the HMOs. It was not only a sign of the suspicion and low level of trust they had towards one another, it could also be an admission that the NHIS was not fully in charge since expectedly, and with regard to the operational guideline of the scheme, NHIS should be in charge of policy direction of the scheme. As earlier emphasized, this is not a favourable scenario for strengthening the scheme.

“ well, they are dependent on us, so they don’t have a choice, especially the HMOs because whatever they are doing is coming through us, whatever payment they are getting is coming through us, so we have a big stick over them and ennn, until recently when there was a lot of fracas between the executive secretary and the HMOs. I think we’ve had a very good relationship” (NHIS 1)

In a related statement from one of the HMOs executives, there was also some evidence that the relationship between the NHIS executives and the HMOs varies, depending on who the NHIS executive is at a point in time. There are some that reportedly had good working relationships with the HMOs and there were others during whose tenure the level of mutual suspicion and hostility seemed to be very high. As expressed by the HMO executive, *“but right now relationship depends on who actually is at the helms of the affair”* (HMO 1). The content of the interviews also revealed that the two parties at some point were trying to outwit one another using the political influence they could muster. It should also be noticed that the scheme has only existed for barely 15 years, and at the same time data from this study as reported by the respondents, suggests that many NHIS executives were appointed for the scheme over that time. This could be an indicator of a high turnover of leadership of the scheme which may not allow any meaningful consolidation of plans for improvement in the scheme. Shortly before the collection of the data, the previous NHIS executive secretary was removed from office, reports had it that his sacking was politically motivated by the HMOs (223). This could not be substantiated in the present study. However, it reinforces the general belief that the HMOs are more politically influential than the NHIS officials and are capable of causing a regime change in the NHIS executive secretary position, as captured in this quotation:

“.... yes there is suspicion, we are all suspicious of each other, especially, with the new guy at the helms of affairs that was recently suspended, relationship depends on who is at helms of affairs at the regulatory level, so the scheme needs to be reviewed that is the truth, so that nobody has autonomy, right now relationship depends on who actually is at the helms of the affair, I remember a time, there was one that left at that time and they believed it was the HMOs, the health managers that politically sent him away, the one that came after him they were much more friendly with the HMOs, but we have some that has really been very hostile unnecessarily on HMOs because he has some backup, so, it depends, relationship varies on whoever decides,....”, (HMO 1)

The above statement was reinforced by a statement credited to a private health care provider, when she alleged that some of the HMOs were owned by politicians and that is the reason why HMOs behaviour towards the NHIS officials and providers was sometimes akin to acting with impunity and despite this, it seems the NHIS is helpless with little or no power to sanction erring HMOs:

“Some of the owners (of HMOs) are politicians, senators/office holders. NHIS is supposed to enforce compliance, but it will affect these owners who will not allow it to work. They will use their influence

to thwart it..... NHIS should also consider paying providers directly from their headquarters rather than using HMOs as intermediary” (PP 2)

Allegations against the HMOs was reinforced by a desk officer in one of the faith-based facilities, who was of the opinion that the scheme has the potential to benefit everyone, but, according to him, the conduct of the HMOs was like an obstacle to that. He alleged that HMOs’ opulent lifestyle is one of the indications of their non-transparency, and suggested that the NHIS stop paying providers through them (HMOs):

“in my own opinion this NHIS thing is a fraud, NHIS is a scheme that I think is beneficial to some people (everybody) but what is undermining it is the attitude of (interruption occurred) As I was saying what is undermining is the attitude of the HMOs. They love cheating the health providers that is the problemthey are not ready to review it (tariff) you will just discover that all these HMOs, they ride big, big cars, it is the primary providers that suffer.....there should not be any intermediary between you and your hospital....” (DO 1).

Contrary to the almost general belief that the relationship between the stakeholders was rife with mutual suspicion, an HMO representative claimed that it was actually cordial. He made efforts to rank the level of cordiality between HMOs and other stakeholders such as the NHIS, providers and the enrolees. According to him:

“ yea, for most of the HMOs in this region, it is cordial, emmm, there are always issue, if we look at it as a cycle, NHIS, HMOs, providers, enrolees. Now let us choose one for us a HMOs, let us choose those 3, I think we have good working relation with NHIS more or less, with the providers, it is average, with the enrolee, it can only be scored as maximum average as in, it can’t be more than that, that is my score for us” (HMO 2)

4.6.3.2 The inertia of the system regarding skewed distribution patterns

Following the factors that led to arbitrary distribution of enrolees across the few health care facilities that were available at inception of the programme, and in addition, that also resulted in many of the enrolees patronizing mostly far away facilities to receive care, the response from the NHIS and some other stakeholders is suggestive that efforts were made to correct this. However, according to them, it is an almost irreversible situation which has to be managed as it is. As they expressed it, asking new enrolees not to register with an already high volume site could amount to depriving them of the freedom to choose, and taking some enrolees who have already registered with the facility to other facilities poses the challenge of the criteria to use in selecting those to be moved out of a particular facility to another. Another challenge mentioned was that if some people were forced to leave the facility, and if they eventually were not satisfied with the new facility or an unpleasant health problem happened to them, it could result in medico-legal issues for the scheme. Managerial strategies like employing more health care workers and or partnering with nearby health care providers for bed space and personnel to accommodate excess enrolees for care under a memorandum of understanding have been suggested by the NHIS. Talking about the mal-distribution of enrolees across facilities, and what the scheme planned to do especially for facilities that were possibly struggling to cope with high volume of enrolees, a NHIS official made this statement,

“ we are trying to see how we can walk around it emm one of the proposition is that we are trying to put a cap on what facility can have base on the basic amenities in that facility but ennn it is going to be a tough one, how are we going to decide the enrolees that we are going to move and how are we going to tell a particular enrolee who is so much attached to a particular hospital to tell that same person to move to another hospital or to force that person to another hospital? but the other option we have is that as the number of facilities are growing, we can impose some conditions on them which we are doing now we can put pressure on the hospital to add more personnel, there is this option of a facility having another contract with another facility to them who would now take up their responsibilities to the enrolees a copy of the signed document must be given to NHIS so that in case of any issue between the two parties, NHIS can arbitrate ”

(NHIS 2)

A NHIS desk officer in a private hospital shared a similar management principle as above. According to him, good preparation and organization is important to ensure that facilities cope with an increasing volume of enrolees and also guarantee quality service delivery

“Well to hospitals that are not organized if they have more than they can cope with they can get overwhelmed and in getting overwhelmed the quality of services may reduce (im saying may reduce im not saying it will reduce). If they are organized, they will get more hands, I mean and they will be able to cope” (DO 2)

While it was believed that the situation could not be changed, another official of the NHIS was of the contrary opinion that, if the referral system is good enough, it will correct the anomaly in the pattern of distribution of the enrolees across the facilities. Primary Health Care facilities are the first point of contact with the health system in Nigeria, and they are situated in every local government area of the country, with a fairly good spread. However, currently, the NHIS does make use of the primary health care facilities. This particular respondent strongly believed that incorporating PHC facilities as a mandatory first point of enrolment into the scheme would have corrected the skewed distribution since individuals and families would be compelled to patronize the nearest PHC facility to their residence.

“.....Lagos state is one of the states that is trying to implement that now, that everybody must be registered at a primary health care centre, you can't just walk into a general hospital in Lagos now, you will be turned back because they have tied you to where you live and you must first register with a primary health care centre in your area of domain, if at the primary level, what is wrong with you cannot be treated, then you are given a referral to a secondary level, so if you just walk into a general hospital now in Lagos state, especially the public facility, you will not be treated. So, until, there is a law that establishes that, that everybody should be tied to a primary health care centre, this distribution that we are talking about will always be lopsided” (NHIS 1)

4.6.3.3 Bureaucracy, Transparency and Corruption in Administration

Allegations of fund mismanagement and other fraudulent practices was common among stakeholders. With regard to fund management, there have been allegations that providers did not trust HMOs with reimbursement for the services rendered on behalf of the scheme to enrolees. HMOs were often accused by providers and the NHIS of withholding the money meant for payment of services rendered and putting it in fixed deposits in banks for personal and corporate (financial) gain, while depriving providers of the same fund. It was alleged that financial gains in the scheme go mainly to the HMOs, while other stakeholders especially the providers suffer. Not paying providers in good time has been reported as a factor that makes providers become disappointed in the scheme and as a result, enrolees are at the receiving end when they are not attended. Efforts made to correct this and get HMOs to pay providers was usually in vain as it appeared that the HMOs collude with politicians and prevent any meaningful reform. NHIS officials seemed handicapped and unable to challenge the situation of the HMOs attitude. On the other hand, the HMOs suspect that the providers present financial reports for services that were either not fully carried out or not carried out at all.

“okay, emm, well, between the scheme and the HMOs, certain things we observed was that, we pay money to them (HMOs) to pay the health care facilities, they either don’t pay or they delay the payment and then the providers is there, crying out aloud or denying the enrolees proper or adequate care,..... they can tax themselves two or four million naira each and then go and take it to speaker or president of senate so, they take it to this people,sadly enough, they (HMOs) are represented in our council,so even when we want to take certain policy decision because they are part of the council, they don’t support, what else can you do now, we have limitations”. (NHIS 3)

A HMO representative painted the picture of financial mismanagement in the scheme having gone beyond the health insurance industry itself. According to him, it often involves the politicians, government officials, top management personnel in the industry and the like. He narrated the process of winning a contract job from the government, the financial deals it involves and the fact that those who own and manage HMOs are more concerned about financial gain rather than ensuring that good quality service is provided to the enrolees in their care. He also narrated a poor accountability style of

taking money from the coffers of HMO companies by the owners with less care for provider payment. To corroborate the often-touted perception of the inability of the NHIS to discipline the HMOs, one participant said the following:

“.....there are a lot of people who don't know what HMO is, they just get employed. . . but there are also those who are only looking at the figures, the bottom line, the money, the profit, there are so many of them running the HMOs, so I am indicting the HMOs now and I think that is where the major problem is with the HMOs.....I know that in most of the HMOs, those owners will come to their HMOs and pick money, more like how much is in so, so account, send me so, so amount and this is the money that should have been used to pay....., and if that happens and NHIS cannot in any way ensure it doesn't happen, there is a problem” (HMO 2).

Another form of financial mismanagement is the practise of having medical directors of private hospitals. It has been reported to affect the disposition of hospital workers who are unaware of capitation payment to the medical director. It was reported that capitation fees are kept by the medical director as his own personal gain, therefore, other hospital workers will only be paid from fee- paying clients. Unfortunately, they view NHIS enrollees as people who receive free medical care, and thus less attention is paid to them compared to those who pay cash at the point of service delivery.

“.....I don't know how to put this now but in practical terms what I means is the MD collect the capitations of the hospital and keeps it aside as his gains, then the nurses, doctors working for him will have to work to make money for them to be paid, so that is the structure of most of the private hospitals. The people working will have to work to make money in other to get paid for their salary. Their salary is tied to fee paying enrollees. So, because their salary is tied to fee paying people, they see them as more important than the NHIS whose payment goes directly to the MD.” (HMO 2).

4.6.3.4 Cost and quality of care

Providers' usual complaints against the NHIS management include the perceived refusal of the scheme to upgrade services and drugs tariff which have been in existence for years in the face of escalating costs of health care provision and most especially, drugs and other consumables. For example, "*How can you treat malaria with 750 naira*"? (DO 1). Two of the three faith-based facilities revealed what they do to circumvent the problem. They narrated how the amount paid by the scheme per enrollee was far too small to treat simple and common ailments such as malaria fever despite the fact that the scheme prescribed the use of generic drugs for all services rendered to enrollees. According to these facilities, they have been expending more than the scheme recommended on enrollees because they obtain free drugs and other consumables from their foreign parent organizations, using expressions like "*we have foreign help from Italy*" (DO 1), and that otherwise it would have been difficult for them to keep afloat on the scheme. According to these sources, they give branded drugs to enrollees despite generic drugs recommended by the scheme. They expressed surprises how for-profit private facilities break even when it is known that they don't have support from outside like the faith-based facilities. Respondents raised doubt about the quality of services rendered to enrollees in the scheme, and how consistent it is in the face of escalating costs of treatment and an unchanged treatment tariff. According to the source, it could encourage unethical health care delivery to enable, especially for-profit private organizations and in particular those with few enrollees, to break even.

“. . . . How can you treat malaria with 750 naira? the drug list that they give to you, the amount of drugs in the tariff have not been reviewed since 2015, for a sole owner of a place you will want the profit but this place is a missionary hospital, we have funds, we have foreign help from Italy. By next week or first week in January those Italian representatives will come here, they always visit this place every year, they always send funds and always send drugs here. . . .” (DO 1).

Complaints against some of the stakeholders taking undue advantage of deficient administrative and technical capacities of the NHIS as a scheme were common. Although the design of hierarchy of command among the stakeholders is clear enough, some of the defects that have been taken advantage of through corrupt practices in the scheme, included the design of operational mechanisms and reporting lines in the day to day operations of the scheme. Specifically, the scheme was designed in such a way that when a health care provider needs authorization to provide special services or refer an enrollee to a high level of care (health) facility, the HMO under whom the enrollee is registered must

agree for such a service to be provided or for the referral to be made. At the same time, the same HMO must approve the cost of services rendered as well as the actual payment for such secondary services. Some of the interviewees ascribed this to the poor technical and administrative capacities of the NHIS personnel especially at the inception of the scheme. Thus, the NHIS inadvertently ceded the design and the day-to-day operations of the scheme to the private sector partners especially the HMOs. According to one participant, “*HMOs were involved in writing the regulations*” (AC) and who took advantage of this deficiency to administer the scheme to their own advantage and at the expense of all other stakeholders in the scheme.

“the challenges we have is that HMOs were involved in writing the regulations that have been used to manage them (HMOs) by the government, government bureaucrat literally hand it over to them to help out to write it. So, that cannot work, but that is what is being operated, so there was, called it regulatory capture and as long as that is what subsist, it would remain ineffective in managing HMOs behaviours, so that is where we are really” (AC)

4.6.4 HMOs and health care providers

4.6.4.1 Relationship between HMOs and health care providers

The scheme was designed in such a way that the NHIS has the authority to dictate the direction of the scheme, and the next stakeholder in terms of managerial roles and responsibilities are the HMOs, as expressed in the following statement “*the HMOs has been given power to do whatever NHIS can do*” (NHIS 2). In addition to the role of the HMOs to purchase health care services from health care providers and facilities on behalf of the Scheme for registered enrolees, the HMOs are also authorized by the NHIS with providers’ claims verification and payment of fees for services rendered to registered enrolees in the scheme. HMOs are also saddled with authorization of services that are classified under secondary health care services category. They do this by issuing codes of approval upon requests by providers. In conjunction with the NHIS, they also partake in accreditation and re-accreditation exercises of health care facilities prior to provision of services to enrolees on the scheme. The HMOs are also responsible for periodical education of the providers about useful information related to the scheme to keep providers abreast of developments. The forum is intended to serve as a platform for feedback from the providers about challenges and together proffer necessary solutions. The HMOs are also responsible for visiting the facilities and for supportive supervision and quality

assurance. Assessment of personnel strength and mix and conduct is also one of their mandates. They assess the process of clinical and laboratory service delivery, environmental and hospital waste management processes. HMOs also serve as arbiters between enrolees and providers and between enrolees and the NHIS when there is a need for them to do so.

“the HMOS has been given power to do whatever NHIS can do like maintain standard within the hospitals, they also serve as intermediary for transferring fund from us to the hospital. But being a regulator, we oversee the whole stakeholders, we accredit the HMOs just like we accredit the hospitals” (NHIS 2)

However, some stakeholders have averred that although individual stakeholders were performing these roles at the early stage of the scheme, presently the majority of them are not as efficient as they were at the early stages. The NHIS has been accused of being unprofessional in its responsibilities. This is reflective in a statement by one of the respondents when he said as follows “.... the NHIS is not also looking at encounter data at all” (HMO 2). One of these issues is that HMOs no longer submit facility data related to various areas of the scheme such as the pattern of facility patronage, payment of claims and other important data. It was said that the only data that providers send are those that have to do with payment for secondary services rendered, whereas encounter data for services that are usually paid for upfront before services are rendered, are usually not sent. Other areas of HMOs’ responsibilities to providers is training on client servicing and communication, so depending on identified training needs of providers.

“.....and then NHIS is not also looking at encounter data at all, I don’t think they are asking the HMOs where the encounter data is?” (HMO 2)

One of the purposes of service data collection from the facilities is to provide a feedback that could spur facilities to engage in self-assessment of their performance and take appropriate steps to improve. However, evidence is suggestive that feedback is usually not provided to facilities based on the data earlier collected from these facilities. When there is no incentive, performance could be negatively affected as seen in this case.

“The hospital is not gaining anything from the data so they don’t report it but when we give authorization for secondary care and they need to return data for us to pay them the claim, they will return it....”(HMO 2)

4.6.4.2 Importance of facility data

It has been said that the NHIS has literally abandoned its roles with regard to facility data collection and management. Ordinarily, the HMOs are supposed to demand facility data, and forward same to the NHIS. However, it was alleged that the NHIS was no longer asking for the data from the HMOs, perhaps contributing to the HMOs not requesting data from the providers. Data collected from the facilities are of two types, the claims and the encounter data. Claim data are for secondary care services provided, for which payment is made upon submission of data with details of services provided and the quantity and thus the cost of care. Encounter data is based on capitation, that is, the total number of enrollees in a particular facility multiplied by the cost per individual enrollee. The level of service to be rendered to individuals in a specified period of time is known, and the cost of service is paid to the health facilities upfront. Again, it was reported that the quality of data collected was usually poor, partly as a result of lack of supervision by appropriate authorities. According to the respondent, encounter data returned was usually less than ten percent of the whole, while claim data was almost a hundred percent. Again it was claimed that the NHIS do not look at the data collected.

“Information management is poor, I don’t know how to put that better, maybe it is a Nigerian problem. If you look at general information, the management is poor, that is communication even between all these stakeholders, the management is poor. The hospital is not gaining anything from the data so they don’t report it, but when we give authorization for secondary care and they need to return data for us to pay them the claim, they will return it, so, claim data 99% return, encounter data less than 10% return and then NHIS is not also looking at encounter data at all, I don’t think they are asking the HMOs where is the encounter at all, at all,” (HMO 2)

4.6.4.3 Authorization, supervision and education for quality assurance

As part of the oversight functions of the HMOs, provision of sound knowledge of the workings of the NHIS, roles and responsibilities of individual stakeholders are important. This is imperative to avoid unnecessary misunderstanding between enrolees and health care workers especially. However, it was claimed that HMOs did not slack in this area but for the high turn-over rate of hospital workers, whereby, if a group of health facility workers were trained this year, within a short time a few, or sometimes none, of them would be available at that particular health facility. Unfortunately, the new health personnel may not have been trained, with a consequent misapplication of some service conditions to enrolees when they come for care. It was also noted that though some of the health care workers may demand full-service fee out of ignorance, others occasionally do it deliberately.

“.....No, they don't really have to pay, they pay 10% the cost of drugs, most people that pay are people who have a lacunae in information, so people don't have information, don't forget that at the hospital level, there is a high turnover of staff, so the hospital staff themselves don't have all the information, so in order to protect themselves, they tend to want to collect money from everybody, so if NHIS enrolee comes and the doctors say go and do a test or buy a drug that is expensive to the hospital staff, then they will say no....., you have to pay, so if the enrolee does not have information, he may end up paying which is wrong. It happens because of lack of information, off course, very common, some of them (health care workers) do it even deliberately.....” (HMO 2)

The oversight functions of the HMOs as an important stakeholder in the scheme is explicit. HMOs have been empowered to do virtually all that the NHIS should do. This is as expressed by an NHIS official

“..... the HMOS has been given power to do whatever NHIS can do like maintained standard within the hospitals....” (NHIS 2)

As earlier mentioned by one of the participants, HMOs have been empowered to accredit and re-accredit health care facilities, resolve differences between providers and enrolees and authorize secondary care requests from providers. HMOs serve as the intermediary between the NHIS and the providers, as well as between providers and enrolees, among other functions. Continuous monitoring

and supportive supervision of accredited service providers' activities is one of the expected roles of the HMOs in the scheme.

“.....I am the team lead in things that have to do with the hospital and enrollee service daily operation, then I handle sales and marketing because we have new business also, I supervise that, I handle user education for both client and hospital education, then when it comes to health education, screening exercise for client, because we do more preventing medicine procurement, then accreditation and re-accreditation of hospitals, we ensure escalation is reduced to the barest minimum, I ensure follow up on all satisfactory experience of providers and then I liaise with five regulatory bodies, all the regulatory bodies representative in the southwest zonal office” (HMO 1)

However, in recent times, as alleged by one of the respondents, these roles are no longer carried out as expected. He was of the opinion that HMOs' deficiencies in its responsibilities was a fall out of a bigger picture, that is, the NHIS that was supposed to do oversight functions for the HMOs seemed to have lost interest in doing so, and when they do, it was occasional. It is this same trend that flows throughout the duties and responsibilities of other stakeholders, from the HMOs to providers. In addition, it seemed that the HMOs management were not favourably disposed to efforts that will improve the scheme, as it was alleged that exercises such as client satisfaction surveys, the results of which could be used to improve the system, would not be funded. Again, there were some of the employees among the HMOs section of the industry who did not have adequate understanding of the industry and their assigned job responsibilities. Above all, he was of the opinion that the biggest problem lay with the NHIS which was not playing its roles as it should, and that attitude has affected the disposition of other stakeholders towards their roles and responsibilities.

“.....major issue with NHIS currently is poor regulation, so NHIS as a regulators is not meeting up to his responsibilities, so it has allowed a lot of in coat “mediocre” to run the industry at all levels, NHIS, HMOs, providers, . . . we do enrollee satisfaction survey. Emmm for my organization, we haven't done it in the past five years. So, it is all tied to the same problem that I talked about, you want to do enrollee satisfaction survey, you need to spend some money and the management is not (laughed).....disposed. NHIS is not asking for same, so, you understand. Supervision from NHIS is still poor. They are not asking for it and then most of the managers of HMOs don't see as important but there is a template for it, we have done it before, we can always do it... We can do satisfaction survey and then use the report to improve . . . (HMO 2)

4.6.4.4 Quality assurance

Quality influences people to act as agents of information dissemination either to encourage others to patronize the facility or otherwise. However, the care providers seem unable to understand how it could be used to attract clients to patronize their facilities. The following excerpt was from one of the respondents, while he was emphasizing the central role of quality of service in health care.

“quality is a volume driver” if you can render quality care, it drives up your volume because word of mouth is the number one marketing tool, when people starts telling each other, just like I said influence, they tell themselves that that hospital is good and so on. Most of the owners of hospitals don’t seem to look at that aspect. So if I am going to say, I will say quality is what drives people and provider behaviour is the number one grievance that enrolee has, they may not complain to us all the times, it is the number two in times of complaint, number one complaint is “they made me pay” (HMO 2).

In an effort to analyse what it takes to ensure quality assurance assessment in facilities, another HMO official discussed the aspects that comprise quality assessment such as physical infrastructure, medical machines and equipment, drugs and other consumables and health care personnel, volume and staff mix. It also entails day to day operational/administrative plans and procedures, including diagrams that elucidate tasks to be carried out by individuals and groups and the time and place and the frequency of doing so. Frequency of meetings and content of meetings are also included. Employment of staff and mode of employment which should include letters of appointment and remuneration packages among others. Staff training and modalities of trainings which seem to be neglected in recent times were not excluded. It was emphasized that having these in the facilities and following them would ensure standard of care and minimize errors which could be fatal.

“what I will talk on is, feedback on our quality assurance, where we feel they are lagging behind and then also feedback on quality assurance, it cut across all those information that I have given you earlier, medical personnel, registered nurses, obstetrics and gynecology, mid-wives, so not only the clinical people,..... they need to have non-medical people, you talk about accountants, IT people and people that are going to handle the administrative work. Then, do they have call duty roster, if they have in house training for their staffs, because what the staff knows is going to help in giving out the right services. Do they have committee meetings? , at least they should have that at least once in a year so that they can strategically see how they are going to move the hospital forward, do they have enough water supply, do they have the power supply, we want to see the present building structure

the conditions of the building, is it a kind of facilities that have good aesthetic look, you know, which is very important to us, we want to know if it is a centre, that we can use that have very good ventilation, you know if they have enough beds, to take care of patients, you know, the conditions of the toilet....” (HMO 1)

The response of another respondent agreed with the above. However, he was of the opinion that quality assurance exercises tended to concentrate most on physical infrastructure and medical equipment rather than training of care personnel, which according to him is more important than all other assets, and according to him, it is a well trained personnel that can effect positive changes in service delivery and can improve facility performance.

“yea, the issue with quality assurance that we do is that, we concentrate so much on the equipment and facility..... training is not happening at the level of the hospital, most of the training they take, they take it from the forum that we organize, they know anything about managing care, they know the concept, they don’t know the philosophy, they tend to understand the procedure because that is what we teach that if enrolee comes this what you have to do, you have to take care of them, you know they get the procedure overtime but they don’t understand the basic concept behind it because they have not been trained, so when we go for quality assurance we concentrate more on facilities (HMO 2)

4.6.4.5 Capitation and fee for service payment

HMOs have been saddled with the role of paying providers under the scheme. NHIS channels the money through the HMOs to health care providers. There are two forms of payment under the scheme; one is through capitation and the other is fee for service. While capitation fee is based on the total number of enrolees registered at the facility, it is paid irrespective of whether service was delivered or not, whereas fee for service is about an actual service that was delivered, and with evidence, it is paid post-service delivery. However, there have been complaints from other stakeholders that the HMOs have performed poorly in this aspect. Complaints of delay in payment or non-payment at all with negative consequences on the providers and enrolees have been lodged from other stakeholders.

“.....we have two forms of payment, the capitations which is paid in full by the HMOs to the hospital whether enrolees go or not and then we have the fee for services which is set aside for

specific services that are paid only after the services have been given, so, you find that they delay or denied even payment of the capitations, there are no issue then for the fee for services, which is paid only after services have been given. Sometimes after a service has been authorized or a provider has been authorized to give a service and the providers raises the bill, the bill is not paid or not paid on time and this create problems in the system. . . .” (NHIS 1)

It was alleged that payment of capitation fees to providers by HMOs that should normally be sent to providers without delay have not been consistent and that HMOs deliberately withhold the fee and convert all payments to fee for service. These sources claimed that the NHIS do not have enough power to correct the abuse because many of the HMOs are owned by powerful politicians who were influential in the NHIS.

“HMOs are collectively squeezing providers dry. They remove capitation payments without notice and convert all enrollees to fee for service. Some of the owners are politicians, senators/office holders. NHIS is supposed to enforce compliance, but it will affect these owners who will not allow it to work. They will use their influence to thwart it” (PP 2)

Lapses on the part of the hospitals for example, poorly prepared bills, were also a contributory factor, though not consistently. It was also alleged that services that were not rendered or rendered but not authorized could be incorporated into the bill and that could be a source of delay or non-payment of cost of service

“ . . . or sometimes even when the bill is paid, it is not paid fully which is understandable because sometimes too, the hospital do not compute properly and they also include services that may not have been authorized or is not covered by the scheme, so there is no way HMOs can pay but we expect that for every payment, you send a pay advice listing what you have paid and what you did not pay and the reasons behind it, so that the other party there has a full scope of what transpired but when they don't send this advice, they just pay money into the account of the facility . . .” (NHIS 3)

Many stakeholders believed that the problem started with the invitation of the HMOs to assist in the design of the modus operandi of the scheme, because of the lack of technical and managerial skills that were needed to manage the scheme. They were of the opinion that the HMOs took advantage of this opportunity to favour themselves, handling strategic operational areas of the scheme.

“ . . . the challenges we have is that HMOs were involved in writing the regulations that is been used to manage them by government, government bureaucrat literally hand it over to them to help

out to write it. So, that cannot work, but that is what is being operated, so there was, called it regulatory capture and as long as that is what subsist, it would remain ineffective in managing HMOs behaviours...” (AC).

The design of the scheme by the NHIS, was ultimately more to the advantage of the HMOs. This is also a reflection of the inadequate skills of the NHIS in managing the scheme. An example of how the HMOs managed to have a strong hold on the scheme is in the payment of fee for service bills; in this respect, at the providers’ request, the HMO either authorise or reject that a provider render secondary care to an enrollee. The HMOs also pose the sole authority to pay for such services, and more often than not, they do not pay providers the cost of services rendered as and when due. Attempts to correct this mistake by the NHIS have been futile as the HMOs are strategically placed in the scheme, for example, HMOs are on the governing board of the NHIS, where whatever decision taken to correct the anomaly will be opposed by them (HMOs) and in addition, HMOs seemed to have greater political influence than the NHIS officials.

“Only the NHIS did the design of the operational guidelines, no any other partner, . . . no provider or HMO or any other . . . we suddenly realize that.....when they started initially, they rarely wanted to approve secondary care services because it takes paying out, and then we said there may need to review this thing o, you can’t have the two authorities, it is either we approve it, then you do the payment or you approve, we do the payment but if you will be the one to approve and pay, you will be considering your money or the money NHIS is given you, you don’t want to, because you want the thing to remain in big balance for you and you can fix the money.....” (NHIS 3).

Some of the providers did not see any reason why payment, especially capitation, should be paid through the HMOs. They were of the opinion that having HMOs as an intermediary between NHIS and providers is causing a lot of damage to the scheme. They want the scheme to pay them directly.

“NHIS should also consider paying providers directly from their headquarters rather than using HMOs as intermediary” (PP 2).

This was in agreement within the proposition of a desk officer in one of the faith-based health facilities,

“.... Why I am saying this is that there should not be any intermediary between you and your hospital (I think you are getting what I am saying)” (DO 1)

4.6.5 HMOs and enrolees

4.6.5.1 General obligations of HMOs towards enrolees

First and foremost, HMOs serve as an intermediary between providers and enrolees. They also mediate between enrolees and the NHIS, though sometimes, enrolees do bypass the HMOs. Also, as part of their roles and responsibilities in the scheme, HMOs are responsible for enrolees education and information in all matters relating to the scheme. Enrolees are also encouraged to make calls to HMOs directly when necessary about any issue related to the scheme, and HMOs are duty bound to address such appropriately.

“.....generally for the HMOs, what we do is that we ensure that they are registered because the volumes increases our own profitability as well, so we ensure that they are registered, we ensure that they get their ID (identity) card, we ensure that their names get to the hospital before they go there, and then we ensure that they have seamless access to care so that referral are quickly handled.
(HMO 2)

4.6.5.2 Addressing complaints of enrolees about providers

They are also very involved in enrolees' registration in the scheme, as well as addressing any complaints they may have especially those that have to do with receiving care from the providers. In order to have a more accurate assessment of service provision in the facilities, HMOs engage enrolees periodically and when necessary, survey their experience in receiving care from the providers. Enrolees are also assessed by encouraging different parastatals where they work to set aside a particular time of the day periodically for enrolees/HMOs interactive sessions. Feedback is received from these sessions as well as from complaint boxes placed at specific areas at workplaces.

“like I said we do, routine enrolee visit, so we go to their designated parastatals, where we meet the liaison officers, there they have escalation register, sometimes we harvest the escalation register and then we get feedback and then we give them our contact, that is how we know if they are being handled well, so that they will help us to know if they are being handled well . . .” **(HMO 1)**

Similar issues have been reported by another HMO about enrolees complaining about alleged poor treatment by providers:

“Other issue we also handle are things like providers behaviour and that is a very big issue too, a lot of them complain about providers behaviour, so we ensure providers takes good care of them. At the hospital level, that is at the medical level they are covered for basic health care, that is primary care, consultations, generic drugs, admission, laboratory test, X- rays, specialist consult, health education, they are covered for almost everything. we also do enrollee satisfaction survey” (HMO2)

However, when one of the HMOs was informed about the alleged poor treatment of enrollees by some of the providers, contrary to the reports of the previous two HMOs **(HMOs 1 and 2)** he claimed not to be aware of it and, in fact, vehemently disagreed with it. He reiterated this by saying that NHIS enrollees are specially treated. He expressed this in this statement:

“No, I am not aware about this and if am aware I really disagree with it because in some hospitals once they know you are under NHIS they attend well to such a person because this thing is nationwide so I disagree. Even as a staff when we go to any facility and we tell them we are from NHIS, they attend to us quickly” (HMO 3)

Whether they are treated well or otherwise, whatever may be the cause, by default, enrollees are expected to lodge their grievances with or make enquires about the scheme from the HMOs, and this is as stated below by one of the HMOs:

“Ideally when an enrollee has any complaints HMO is the first place to report to and that is the essence of the sensitization (are you getting it if you have any complaints call the HMO and we will quickly intervene by calling the facility that so so so person raised this issue and we sort it out. We used to tell them not to wait till the annual sensitization before you lodge your complaints”. **(HMO 4)**

4.6.6 Relationship between providers and enrolees

4.6.6.1 Choice of providers

The major role of facility health care providers to enrolees in the scheme is to provide needed health care services. On their own, enrolees have the freedom to choose providers of their choice. However, evidence has shown that at inception of the scheme, most of the enrolees did not choose the facilities but rather were just assigned to these (providers) by the NHIS. This was a result of the reluctance (of potential enrolees) to enroll in the scheme as a result of reported low trust in government beneficial social policies. During one of the interviews, a private practitioner showed the level of loss of confidence in government policies when she remarked, *“anything coming from the government will fail, . . .”* (PP 2). Because of this the majority of the enrolees were assigned to available facilities by the NHIS. The reluctance of the potential enrolees has been ascribed to prior disappointments from failure of previous policies. The effect of this manifested in the pattern of patronage of the facilities as a large majority of them eventually ended up receiving care in health facilities far away from their residence.

“.....Many people believe anything coming from the government will fail. The government has lost its credibility due to corrupt practices and embezzlement. People don't have enough confidence to believe that government will run the scheme properly. Hence, the number of people interested in health insurance is low” (PP 2)

Providers used different strategies to incentivise potential enrolees to choose and patronize their facilities for care under the scheme. Some believe in, and succeed in providing quality health care as an approach to recruiting enrolees. This importance of quality as a volume driver was reiterated in a statement of a private hospital desk officer when he emphasised quality care and understanding how the scheme works as an approach,

“if I treat NHIS well and I understand the nitty-gritty and the other provider does not there is tendency that I will have more enrollees than the other provider there are no two ways about that.....” (DO 2).

4.6.6.2 Quality as a volume driver

Good quality health care rather than other means seemed to be more important to enrollees as well, and it could counteract the effect of distance especially. Some of the enrollees interviewed also expressed the value of quality service and how it could make distance a non-issue while seeking care. An enrollee in a private faith-based facility reiterated the importance of quality health care in the following statement,

“see the distance or anything that you may happen is nothing compared to the treatment that I am getting here because I am the type that like seeing the doctor whenever I want, I don't just like doing self-medications and coming here they don't usually waste my time here . . . ” (Enrollee 3).

In addition to defying distance, the availability of quality health care service could make the cost of care of less importance. This is reflected in the health seeking behavior of one of the enrollees who claimed to patronize two different facilities, one at a time, depending on the perceived seriousness of the ailment. He was of the belief that the NHIS facility he uses for care under the scheme was not capable of delivering good quality health service all the time and that when he perceives an illness to be more serious than what the NHIS accredited facility could handle, he resorted to patronizing another health facility where he pays cost of treatment from his pocket.

“for me am managing two hospitals, anything I see, or I discovered I can't get here I will move to the next hospital, so that doesn't allow me to have any feeling at all . . . I have seen some cases that I came here with, one or two issues their response to me was poor that I had to move down to government hospital for treatment, so I had to move down to government hospital, there I paid my bills myself. . ” (Enrollee 3).

In one of the interviews, the importance of quality service was briefly summarized as below,

*“that is what they look they don't look all the aspect that “**quality is a volume driver**” if you can render quality care, it drives up your volume because word of mouth is the number one marketing tool, when people starts telling each other, just like I said influence, they tell themselves that hospitals is good and so on, most of the owners of the hospital don't seem to look at that aspect. So if I am going to say, I will say quality is what drives people..... ” (HMO 2)*

When he was prompted on the reason why PHC facilities were not used as service delivery centres under the scheme, one of the NHIS officials explained the reason why the PHC facilities were not involved in service delivery for enrollees under the scheme. He pointed out that the PHC facilities would have been a good partner if they were better equipped since they have good spread across both the urban and the rural areas throughout the country. In explaining this, he said:

“The PHC [facilities] were ill equipped and ill [poorly] staffed to provide the level of care contained in our benefit package. . . . they were closer to the . . . communities. But in our discussion in a recent retreat, we are looking at ways and means of including them into our provider base” (NHIS 3)

The above statement was corroborated by another NHIS official when he was responding to the same question. He was of the opinion that even if it was included, the likelihood that people would not patronise them was high because they did not believe that such facilities have adequate cadre of personnel to offer quality service, expressing it this way:

“ if you go to some of these primary health care centres, mandatorily, even under WHO standard, they are not supposed to have a medical doctors, midwives and things like that because it is supposed be first point of call for first aids and minor treatment, so people don't believe in them in Nigeria, . . .” (NHIS 1)

4.6.6.3 Fraudulent practices

Providers reportedly used different tactics to incentivize enrollees to patronize their facilities. While some believed in quality of care as a volume driver, others engaged in fraudulent practices to enrich themselves and defraud the scheme. There have been reported cases of providers enticing enrollees to accept gifts in cash or in kind or telling them out right not to come to the facility within a period of some months in exchange for financial reward.

“.....The other clause is that there are some hospitals that entice enrollees with gifts which of course I don't subscribe to. That if you don't come for three months, we will give you provision and all those, some enrollees that are gullible do go for such but when they realize it they go back but mainly the key thing is good services”. (DO 2).

Profit making can be maximized without jeopardizing quality health care in some instances. This was reportedly demonstrated by a provider under the scheme. He distributed and promoted the use of insecticide bed nets among enrollees who patronize his facility. Enrolees were in turn happy about the ‘gift’. Reportedly, the beneficiaries spread the news to other people which made them desire to change to the particular facility that they might enjoy the gift of an insecticide bed net. In as much as the gift actually minimized the incidence of malaria fever among the enrollees and thus, the rationale was to reduce the frequency of health facility patronage by these enrollees and thus reduce expenditure on treatment of an endemic disease on the part of the hospital. In this case, both parties benefit without compromising the quality of care

“there was a hospital in Lagos that even bought mosquito treated net, knowing that probably 50% of the illnesses are mosquito borne diseases, so to speak and they were sharing to the enrollees that chose them and the enrollees were happier for it and were even telling their colleagues, this our own, they even give us something, so those that were not getting anything in their own were transferring, doing change of providers but they didn’t know that the man was just been smart, if I cut down on enn malaria cases by giving them mosquitoes treated net, I will be just be smiling home to the bank, so it was a win-win....” (NHIS 3)

Some of the enrollees have been reported to be engaging in fraudulent behaviour with or without the connivance of providers. This included seeking care for ailments that did not exist in order to obtain drugs for relatives who were ill but were not eligible as a beneficiary on their account. It was also reported that sometimes these relatives were presented and made to impersonate an eligible family member in order to receive care. The cost of such gifts is documented and presented to the scheme as charges for care of some fictitious ailments treated.

“ enrollees do impersonate. We have seen several times when we have a situation whereby an enrollee brought her neighbor’s child and told the child that when you get there tell them that you are so so name and you know small children when we ask what is your name the child will just mention his name and the parent will try to correct the child (no you are James) or they will bring a child and say she is coughing then the child will say I am not coughing the mother will say shut up you are coughing because they want to collect the cough syrup to give another person at home some hospitals” (DO 2)

4.7 Summary of qualitative results

However, in this study, while quality of care should be acknowledged as a factor that determined the pattern of distribution of enrollees across accredited NHIS facilities, what determined it the most was the factor of trust, or lack of it, in the health system as it has been appropriately established in the study. The researcher's bias at the beginning of the study was that quality of health care services available in the accredited facilities was the responsible factor for the observed skewed distribution of enrollees and health care facilities under the scheme. The factor of trust was not anticipated, and thus, it can be concluded that, the assumption or bias of the researcher prior to commencement of the study, had little or no effect on the study findings and the conclusion. This study while acknowledging the contributions of the factors of quality of service and trust to the observed pattern of enrollees distribution across NHIS accredited facilities, as well as distribution of the facilities in the study area, it should be noted that the factor of quality of care had more influence on the health seeking behaviour of enrollees, while trust as a factor in the skewed distribution had influence across all stakeholders' behaviour. That is, reluctance of the majority of health care providers in partnering with the scheme at inception, as well as a 'forced' registration of the beneficiaries with the few available health providers at the onset of the scheme's operations. The enrollees were satisfied with the scheme. The qualitative result also indicated a low level of trust among the three main stakeholders (the NHIS, the HMOs and the health care providers) in the scheme. While the NHIS management and the HMOs seemed to suspect each other most of the times, the providers complained of an unacceptable administrative style of the HMOs especially regarding payment of services (capitation and fee for service) and other issues related to fund management. In addition, NHIS officials and health care providers were of the opinion that the HMOs had more influence with the political class which they (the HMOs) employ to frustrate efforts to re-design the operational mechanism of the scheme to improve performance.

CHAPTER FIVE

5.0 Analysis of results by objective

In order to enable a better understanding of the scheme, what it sought to achieve, its achievements so far, the challenges and the way forward, an analysis of the results will be presented under the following sections:

1. Political factors, governance and change in National mood
2. Design of the scheme
3. Implementation of health interventions
4. Financial and other related factors
5. Management and governance
6. Conclusion

5.1 Political factors, governance and change in national mood

The political arrangement of a nation, as one of the most important factors of the contextual environment plays a major role in the outcomes of beneficial social policies including that of the health systems. The successful implementation and sustainability of health reforms has a lot to do with the structure of the political system in the immediate environment and the prevailing national mood in the society. The discussion below is an effort to support this assertion with regard to the findings of the present study in comparison with the political structures of some selected countries.

5.1.1 Political structure and actors' interest

The structure and operations of the scheme mirror the political structure and governance of the country in general. It is instructive to note that Nigeria operates a federal presidential system of government, with a three-tier arrangement of governance, which has a profound effect on all sectors in the country. For instance, the health system operates at three levels of tertiary, secondary and primary care. While the tertiary level of care is under the domain of the federal government, the primary level is managed by the local governments where the facilities (primary health care centres) are situated. The state governments manage secondary health care. In the presidential system of governance, the sub-national governments are autonomous in many areas in the political arrangement, excluding currency and defence. Sub-national governments, unless they are willing to follow the national government, have the freedom to govern and direct policies in other sectors within

their domains, including the health sector. A typical example of another country with this political arrangement is the USA. This is unlike the political arrangement in unitary, parliamentary systems of governance in countries such as the United Kingdom and Ghana, whereby decisions in any sector taken at the national level are bound to be followed by the sub-national levels of governance (170).

This study will make use of examples of certain landmark policy decisions in the health sectors in these countries to highlight the impact of the aforementioned political structures and governance. The struggle to adopt and implement UHC in these countries - Ghana, UK and the USA, will be compared to analyse the impact of political structure and arrangements on the history of health sector reforms. This will be used to explain how it has affected the present health sector reform, as it is available in the NHIS for achieving UHC in Nigeria.

As far back as mid-30 in the USA, the struggle to implement a nationwide system that would ensure equitable access to quality health services has been on the front burner politically. Although the idea of a form of national health insurance was popular and widely accepted by the general populace in the country, the political actors and other interests groups who perceived such a scheme to affect their financial, and other forms of, interests negatively opposed it. These actors included the American Medical Association (AMA), pharmaceutical companies and those in the health insurance industry. In addition to their financial interests, the AMA were also concerned about their reputed autonomy being whittled down because of reform that would start to “dictate” their financial negotiations and power. Intensive lobbying of politicians by these interest groups to oppose the reform lasted for a long period of time until the year 2010 when the administration of President Obama managed to narrowly secure the reform in the name of the Affordable Care Act (ACA – a.k.a Obamacare) (170, 198).

It should be noted that the experience in the UK was different. Years after the start of the struggle to implement a reform that would ensure nationwide equitable access to quality health serves, the National Health Service (NHS) in the UK was approved in 1932 after a short period of debate to convince stakeholders, while implementation of the scheme started in 1948 (224, 225). This intervention actually assuaged the masses who felt betrayed by the government post WWI when promises for better social welfare across all sectors fell flat. A similar scenario played out in Rwanda when the country’s National Health Insurance Scheme was adopted following the nationwide trauma as a result of the genocide crisis, and a shift towards acknowledging the need for solidarity with the

marginalized and other efforts to heal the nation (170, 226, 227). Thus, in Rwanda and the UK, the adoption and implementation of the reforms quickly gained the momentum needed as a result of national crises. These schemes are also mandatory for all. The remarkable success of Ghana's efforts towards UHC is also attributed to the mandatory nature of the scheme as supported by the political structures of these countries (70, 75).

The long period of struggle in the USA is related to the nature of its political arrangement, as the federal level from which the idea emanated could not dictate to the sub-national levels. NHIS of Nigeria, like the ACA in the USA took a long period of time to emerge because of a similar political structure to the USA and the opposition to its implementation at inception (63, 84, 228).

5.1.2 Kingdon's 3-streams model and agenda setting for health intervention

When it eventually emerged, the three streams theory of Kingdon (184) could be used to explain ACA and showed that the PHC facilities that had a good spread were not used for service delivery under the scheme. In addition to this, the majority of the facilities where the study was conducted lacked basic medical amenities including but not limited to drugs. Any efforts to rectify the gaps in the scheme must of essence, address this problem to ensure the health care facilities are in good shape to deliver necessary health care services to the people. It is not clear how UHC will be achieved in the absence of wide-spread health facilities that are of good enough quality to meet the demand of health care consumers. Persistent absence of drugs and essential commodities coupled with inadequately staffed health care facilities are a source of low level or loss of trust in government policies. In addition to the low level of trust in government, it also contributes to failure of government health interventions which worsens the mistrust in the government. One of the most important steps on the road to achieving UHC in Nigeria is to ensure that the PHCs, in addition to the secondary and tertiary care facilities, are upgraded to meet the standards that will enable it to provide services under the scheme.

5.2 Implementation of health interventions

5.3.1 Models of implementation: Top-down, bottom-up and ACF models

Policy implementation models of ‘Top-Down’ (187), Bottom-Up’(185) and ‘Advocacy Coalition Framework’ (189) could be used to explain the outcomes of health insurance reforms in some countries including Nigeria NHIS.

The ‘top-down’ or ‘bottom-up’ approaches to health policy planning and implementation have been criticized as inadequate. Successful health interventions have been reported to involve the participation of stakeholders across a wide range of sectors. Stakeholders who share similar values and approaches to solving a prevailing health problem of interest come together as groups, and not as individuals as pictured by the ‘Top-Down’ and the ‘Bottom-Up’ approaches. The problem solving approaches adopted by individual groups are unified through consensus and compromise. This is usually facilitated by *policy brokers*, individuals who are part of the policy making process and who are experienced and mature, and who realise the need to have a common position in solving the problem(s) under deliberation. Such an approach of the involvement of many stakeholders in discrete groups holding similar values who agreed eventually to ‘coalesce’ problem-solving ideas in the effort to solve prevailing health problems, is referred to as Advocacy Coalition Framework (ACF). These groups will include those front-line health care workers, who are usually ‘pushed aside’ by the other two approaches to policy making. In ACF, a sense of belonging, and ownership for a more likely successful policy implementation and sustainability is promoted.

Lipsky (185) referred to front-line managers such as nurses, pharmacists, physicians and the like, who implement the content of policy documents on a daily basis, as ‘street level bureaucrats’, a group of actors whose acceptance or otherwise of a health intervention or policy determines the success or otherwise of such interventions. The success of the efforts to implement health reforms for universal health coverage in some Latin American countries such as Mexico, Argentina, Peru and Venezuela have been attributed to the involvement of a wide range of actors including front-line health care workers. Similar patterns were reported in some African countries such as Ghana and Rwanda, (76) and as well as in some South East Asian countries (229). In addition to a wide range of stakeholders in the health sector and others, the crucial role of civil society organizations is a good example of non-health sector involvement in Brazil’s successful health coverage (76).

In the implementation of a health intervention, one of three outcomes is possible; the intervention could follow the prescribed pathway and therefore become successful, or it could deviate a little from the supposed objectives and thus partially attain the goals, or thirdly a total deviation from the objectives could result in a failure of the policy intervention. This illustrates the power of front-line health care workers in the outcome of health interventions (230). A study conducted among nurses in the mid-90s in South Africa further emphasised the importance of involving frontline workers in the design and implementation of health policy interventions. Not only do such steps engender a sense of ownership, commitment and trust among such workers but also the challenges of managing health interventions on a day-to-day basis are usually unknown to top strategic policy makers. Since these are well known to the frontline workers because of their involvement, obstacles in the course of implementation of policy interventions could be avoided or managed much earlier than later (186). Thus, success or otherwise of a health intervention lies largely with this category of actors in the health system. A similar but more recent example of the power of frontline health care workers to manipulate health interventions was reported in a study conducted among physicians in rural South Africa that documented local physicians influencing the course of health interventions at will (231).

In Nigeria, the involvement of other stakeholders at the planning stage of the scheme was reported to be absent. The involvement of other stakeholders such as the HMOs, health care providers and health care consumers was only at the implementation stage.

Unlike the examples of other countries stated earlier, the non-involvement of other actors in the planning stages robbed the NHIS of the invaluable contributions of these actors. This omission is a factor in the low level of achievement of the scheme. In the effort to reform the scheme, it is crucial that this defect is rectified so that relevant stakeholders including those that operate outside of the health sector are involved. Since health transcends medical care, the role of others, especially those whose duties are in the realm of social determinants of health (232), cannot be excluded.

5.3.2 Power relations and the exercise of power among actors in the health system

The success of a beneficial social policy in health will depend on the power of actors and their interests. It is important to note the intrigues and power plays of actors at this stage in the process of policy reform efforts. In the process of introducing a change, it is usual that those who feel threatened by the impending change are likely to oppose the change. If those who are positively disposed to the reform are more powerful, the possibility that the reform is successful is high than vice-versa. However, negotiations and compromise are necessary for the success of a policy change. The NHS in England (233) and the Affordable Care Law in the USA (234) are typical examples of such power plays. The case of the ACA in the USA is unique; despite the overwhelming interest of the masses and the political will of the country's leadership, the lobbying of physicians, pharmaceutical and insurance industries who were more powerful than the masses, influenced the politicians to oppose the change which resulted in the long delay in getting a form of social health insurance implemented in the country. At the end of WWII, *The Beveridge Report* that led to the emergence of the NHS was initially opposed by the British Medical Association, until a compromise was reached with the eventual support of the Association (The BMA) (233). Likewise, in Brazil, strong opposition from the private health sector was a threat to health reform, however it was eventually implemented (76).

In Nigeria, for instance, the NHIS has the authority to contract the HMOs to serve as insurers in the scheme, and the HMOs have been authorised by the NHIS to serve as intermediaries for the NHIS by conducting accreditation exercises prior to engaging providers in the scheme, and pay providers for services rendered to enrollees among other roles. Health care providers have the authority to provide services to enrollees, while the enrollees have been authorised to demand and receive appropriate care when necessary. While each of these actors has legitimacy of authority conferred upon them as detailed in the policy guidelines of the scheme, however, power plays to assert their respective interests is a strong source of the mistrust that is common amongst them. Without some level of trust in one another, it will be difficult for the scheme to succeed. Building trust is essential for the progress of the scheme. This could be done by persistent and constructive engagement with implementation communities including respect for community values, identification of needs, co-

implementation and managing implemented interventions, all of which have been cited as essential in building trust (195, 235, 236).

It is important to note that opposition to reforms seems relentless. For instance, despite the implementation, those who claimed their interests were negatively affected were possibly some of the stakeholders influencing the administration of President Donald Trump to repeal ACA (237). Similar scenarios played out in Brazil after the exit of the administration that favoured and implemented a reform in the health sector for UHC. The political crisis of 2016 weakened many of the social policies in the country, which led to the take-over of the health system by the private sector and a gradual rollback of the achievements of the reform (76).

The perception of a group of actors in the health sector that an impending change that is meant to benefit the general population will negatively affect their interests signifies a low level of trust among the stakeholders. This perception will only deepen the mistrust of the ordinary masses in those actors (71).

Findings from this study show that efforts to correct some of the defects of the design of the NHIS scheme in Nigeria have been met with opposition from the HMOs supported by some politicians who are alleged to be benefiting from the present arrangement. Unless this obstacle is removed, the slow progress and under-achievement of the scheme will remain as it is. The scheme needs to be re-designed to address these problems.

5.3.3 Human and material resources in the implementation of health intervention

At the centre of a responsive health system is governance driven by committed and skilled health care workers. Without good governance of the system, even the availability of other resources will be of little impact in the delivery of needed health interventions. In resource-poor settings, challenges of inadequate numbers of health personnel with the appropriate skill-mix is common, and this is worse in rural areas of such settings. Achieving UHC in situations such as this, coupled with a dearth of non-human resources, is impossible. Experts in the field of human resources for health have advocated training, in addition to some other measures including the selection of trainees, and a carefully selected skill-mix training programme (238, 239). Distribution of trained health personnel

should consider needs to ensure that the right number and skill-mix of personnel are deployed to achieve technical and allocative efficiency for optimum performance (240).

Provision of needed equipment for performance of needed health care services is important, without which the availability of trained health care personnel will be of no impact. Provision of essential supplies such as drugs and other commodities is necessary (19, 39). However, deploying health care workers and availability of equipment and commodities should be coupled with strategies to retain health care workers. Provision of social amenities, opportunities for trainings for capacity development and remuneration are as important (238). Task shifting has been reported to be an effective managerial substitute where there is a dearth of human resources and thus has been advocated as a stop gap measure where appropriate skilled health workers are lacking (239, 241). Monitoring and supportive supervision, disciplinary measures, specification of roles and responsibilities are effective managerial tools to ensure good job performance and minimise work-related conflict (242).

In Ghana, Rwanda and most of the Latin American countries, available infrastructure that ensured the presence of the schemes in the rural and urban areas of the countries was made available, especially the primary health care facilities that were the closest to the people. To enable the PHC facilities perform these roles, the facilities were upgraded to accommodate the services that were needed under the schemes.

In Nigeria, despite a good spread of PHC facilities in both the rural and the urban areas, the NHIS did not make use of them largely because they were ill equipped. More often than not, these facilities lacked essential drugs and other commodities and the physical infrastructures were largely dilapidated. The health care workers were in short supply and ill motivated. The rural areas were mostly affected because of poor social and physical infrastructure that discouraged workers' retention in such places (86). Thus, while schemes in other countries performed better and were able to achieve near UHC health coverage within a reasonable period of time (70, 75, 76), the likelihood that UHC health coverage will be achieved in Nigeria under the present circumstances, in the absence of the involvement of PHC facilities, is very low.

This scenario earlier described reveal the poor funding of the health system in Nigeria with its tell-tale signs in the poor capacity of the health facilities, especially the PHC centres that could not be engaged in the implementation of the scheme. The effect could also be seen in the facilities where the study was conducted. It will not be out of place to suggest that the poor funding of the system will impact negatively on human resources for health management generally. The sum of all these will be on the population health outcomes, which are characteristically poor in Nigeria.

5.3.4 Corrupt practices in managing health care market and the government roles

Fraudulent practices by stakeholders in the scheme providers, HMOs and beneficiaries (enrolees) have been reported. These practices can be described as moral hazards and similar other failures in the health care market. They are a manifestation of inadequate regulatory compliance of the NHIS. They constitute areas of leakages and wastage of resources that could render the scheme incapable of achieving the optimum.

Although this cannot be eliminated, it can be reduced to a minimal level when the regulatory agencies are up to the task. In the case of the NHIS that is characteristically deficient in the requisite skills to handle such, this can signify a major problem. Consequently, it could negatively affect individuals and population health, the main reason for which the scheme was established. Strategies to correct this phenomenon include best practices in the health insurance industry such as monitoring and supervision, and strict adherence to treatment protocols for providers, clinical auditing and verification of claims. Also, especially, appropriate sanctions should be instituted to serve as a deterrent. Appropriate skill acquisition and training will be necessary for the regulatory agency.

While enrolees behaviour in defrauding the health system is a demand-side moral hazard, a supply-side moral hazard occurs in situations where providers defraud the health system. The phenomenon of moral hazard arises as a result of asymmetry in information on both the demand and supply sides of the health care market. This is a common challenge in health care as an imperfect market system, unlike the non-health care system where market failure is minimal as a result of a much less asymmetry of information (243). However, a situation where moral hazards occur in a single transaction involving both demand

and supply sides, within a scheme and with the connivance of the players on both sides of the demands could be difficult to control.

On the side of the demand, measures such as deductibles, a onetime annual payment to activate the insurance policy for individual beneficiaries in the scheme is common practice. Also, co-insurance, a percentage of the total charge, co-payments, a charge per service and bonuses to enrolees that did not have a cause to receive care within a specified period of time in the hospital are other measures (244).

Another dimension of failure of the health care market that is greater in resource poor settings and that has been recognised as a barrier to achieving UHC in such settings is the absence of fairly spread out health care facilities especially in rural areas. Characteristically this is because of the capital-intensive nature of establishing health care facilities and the difficulty of entry and exit in the health care market. In this instance, private profit-oriented health care establishments are dis-incentivized to establish practices in rural areas and other sparsely populated poor communities, where they are likely not to make profits. In circumstances such as these, it is the responsibility of the government to provide health care services by establishing health care facilities, equipped with the right mix of human and materials resources to enable the provision of quality health care to people in such disadvantaged areas. Non-profit-making NGOs have been noted to provide complimentary services (245).

A challenge that is well cited in literature is the feasibility of premium collection in developing countries that are characteristically made up of a larger informal population especially in the rural areas (50). Unlike the developed economies, developing countries have a larger informal population without a database of individuals in the population. Collecting premiums in such settings could be inefficient as the administrative cost of such tasks may outweigh the funds collected (50, 196). However, some schemes have adopted innovative approaches such as the use of electronic devices and similar other platforms as a means of circumventing the challenge (246). Nevertheless, to employ this strategy, Nigeria must invest in the necessary infrastructure without which such innovations becomes a mirage.

The concept of social health insurance is one of the strategies to minimise inequality of access to quality health care. In this respect, it is well suited for any contextual environment, but most suited for poor developing nations where the majority of the people are non-health literate (90) and are financially incapable of funding personal health care costs most of the time (50). SHI schemes eliminate price discrimination, a situation where identical services are sold to different buyers at different prices in the

same health facility or across different health facilities (247). The absence of price discrimination and therefore the presence of price transparency as its available under a social health insurance scheme, and among many providers, could enhance elasticity of demand for care among health care consumers; improve competition among health insurers and providers, and thus also the quality of care.

The social health insurance scheme as it is available in the NHIS of Nigeria ensures cost of care transparency as against price discrimination which could result from a lack of information on the cost of care in a particular health facility or across health care facilities. With price transparency, health care services become consumer directed, as it empowers consumers with the necessary information to be well informed and therefore the ability to choose where to receive care among available health care providers. This encourages competition among stakeholders such as the health insurers (HMOs) and providers of care and thus improves both the technical and the functional qualities of care (17, 102, 114, 247, 248). Transparency in the cost of care could start with producing and making available tariffs on drugs and services. The NHIS of Nigeria should update its drug and services tariffs to drive these goals.

As a form of reform within the scheme, the Nigeria NHIS could be reformed in such a way as to improve its efficiency. One of the strategies that could enhance this is performance-based financing (PBF) of health care. PBF coupled with active purchasing of specific services could be used to target certain services that are capable of making a positive turnaround in the population health outcomes of the country. Although a study on the PBF to improve on the volume of services rendered in a systematic review of HIV services reported mix findings, other related studies reported that PBF as a managerial tool is efficient in enhancing the volume of services rendered by providers. Studies on PBF in Rwanda (74, 249), and in Zambia (192), and lately in a facility based PBF in Nigeria (250) are evidence of its effectiveness. In a recent pilot test in some selected states in Nigeria, PBF has shown promise of increase in service volume and it has been employed in the ongoing World Bank assisted Basic Health Care Provision Fund project targeting some selected service areas among women of reproductive age, children and adolescents (251).

5.3.5 Management and governance

Many of the Latin American countries developed the capacities of their health human resources for better performance. The health insurers and service providers were also under a centralised firm control of the schemes' managers (76). In Nigeria, in addition to insufficient human resources for health, the NHIS lacks the requisite technical and managerial skills to drive the scheme. Instead, the HMOs (insurers) seemed to have the upper hand and control. This has largely contributed to the poor management of the scheme and the pervading corruption that bedevils it. Again, there were forces against reforms that could correct the identified ills in the scheme. For instance, a good number of the insurance companies were allegedly owned by politicians at the national level. These politicians were alleged to oppose efforts to correct the identified ills. Thus, steps to reforming the scheme have not yielded desired results. To worsen this is the absence of civil society organizations that could correct this, as has been done in Brazil especially. The Labour unions that could rise up to the challenge do not have enough trust in the scheme, management and the government and are possibly not sufficiently informed about the decay in the scheme. With all these, achievement of a UHC health coverage is still far from reality in Nigeria.

As stated in the Constitution of Nigeria, individuals in the geo-political environment of the country have right of access to adequate medical and health services including the provision and maintenance of health services (252). To ensure this, the government has the responsibility to facilitate a common platform whereby all actors in the health system who have different interests must co-operate in order to achieve UHC. While the government operates in the light of a humanitarian/welfare view of health care, private stakeholders such as the HMOs (health insurers) and the private health care providers are profit oriented. Although the faith-based health care providers may not be classified as entirely profit-oriented entities, they must generate a reasonable income to remain viable and continue to provide care especially to the less privileged.

5.3.6 Trust and implementation of health interventions

The implementation of successful and sustainable health interventions goes beyond the provision and availability of requisite human and material resources. Such endeavour requires, in addition to the aforementioned resources, social capital as it is available in the concept of trust (253). In both clinical and public health -based programmes, successful delivery of clinical care (71, 106, 116, 151) as well as community-based interventions (235, 236) require trust as a platform upon which stakeholders operate. The presence of trust among stakeholders has been ascribed to the success of notable public health interventions. The global eradication of smallpox is a typical example (200). The success of Global Alliance for Vaccines and Immunisations (GAVI), a global public-private partnership (PPP) in health with a goal to increase access to vaccines and immunizations in poor countries has been ascribed to a high level of trust among the stakeholders at its formative stages.

Mistrust or a low level of trust has led to the failure of routine immunization in the majority Muslim northern part of Nigeria as the fallout of a failed previous health intervention (254). The negative effect of a failed health intervention could go beyond the geographical space where there is mistrust to traverse borders of other countries (254, 255). Building trust requires long term commitment to health interventions in host communities, transparency, respect for host values, customs and traditions (195). The creation of and operating on an equitable partnership, jointly identifying community health needs, designing and implementing health interventions to solve these needs are important in trust building. Other factors in this regard, which include sharing results of successful health interventions, identifying gaps for further and continuous collaboration are important for enduring partnerships (235, 236).

This study revealed the element of trust as the key factor that was lacking and that was mainly responsible for almost all the anomalies that were observed in the pathway to the gross under-achievement of the NHIS. It negatively affected the response of stakeholders to partner with the government in the implementation of the intervention. It contributed to the skewed geo-spatial spread of the accredited health care facilities and the distribution of enrolees across them. This line of argument is strengthened by the fact that a similar pattern was observed in the distribution of accredited NHIS facilities (and enrolees across them) in all the six southwest states (including the present study site, Oyo State) that made up the southwest geo-political zone of Nigeria (72). Trust has continued to affect the relationship of the stakeholders from the top echelon of management in the scheme to partners such as the HMOs and providers, as well as the enrolees. It is this low level of trust that results in the suspicion

and the frequent conflicts between the NHIS management and the HMOs, and between providers and enrollees. Although, the design of the scheme has been largely responsible for the low population coverage of the scheme and thus poor UHC despite its long period of existence, however, low level of trust among stakeholders in the scheme has accentuated the poor performance and subsequently low population coverage. Unless this intangible factor is strategically built and maintained achievement of UHC will remain a pipe dream in Nigeria.

Successful health sector reform in other climes were, in addition to tangible resources such as funding and provision for human and material resources, a result of a robust level of trust between the health systems actors and the host communities where such are domiciled. Schemes in Rwanda, Ghana and Brazil are but a few of the examples. Evidence from other settings also lends credence to the fact that when health care consumers perceive that health systems interventions protect their interests, it raises the level of trust in the political system and its interventions. When trust improves, it will in turn improve partnerships of stakeholders within the system in the implementation of sustainable health interventions. Previous studies by Fried and Atheendar in Mexico (2017) and that conducted in Tanzania by Croke (2017) are evidence of this observation. In these studies, provision of potable water in Mexico, resulted in the reduction of diarrhoeal illnesses and improved other health outcomes have been linked to the electoral success of politicians who implemented such programmes, while the distribution of insecticide treated bed nets in the malaria endemic region of Tanzania improved the approval rating of political elites among the masses (165, 166).

Likewise, in a recent review of a maternal and child health intervention in Nigeria, it was reported that irrespective of social attributes such as ethnic loyalty, trust in the political system could be increased when health interventions perceived to be beneficial are implemented in host communities (167). Flipping the scenario, loss of trust in a health system and by extension, in the political system that controls it, could occur when the health system is weak and unable to respond adequately to a health crisis. Such was the scenario of the massive outbreak of cholera in Zimbabwe that led to fatalities among thousands of people in the country and in some other neighbouring countries where it spread to (256).

Trust is the fulcrum around which all the contextual factors of actors and other contextual elements revolve. The degree of the strength of the health system will largely depend on the level of trust that exists among the actors in the system. Therefore, concerted efforts to build trust and to rejuvenate the

NHIS must be made to improve the functionality of the system as a positive step in building trust, and this should be done consistently for a long period of time in partnership with relevant stakeholders.

The NHIS was established almost two decades ago, however, the level of progress is abysmally poor, and it seems that it has remained static or reached a plateau to say the least. Factors such as the dearth of health care human resources and poor medical and health infrastructure are some of the many factors that are militating against the improved performance and progress of the scheme. It must also be noted that the NHIS has low technical and administrative skills to midwife the scheme. To rejuvenate the scheme, partnership with other actors such as private providers and the HMOs, should be strategically done with an emphasis on trust. Health human resources should be purposefully trained and recruited, and means of retention of these workers devised. This should be in addition to the procurement of medical equipment and consumables such as drugs and other essential items. The facilities should be made conducive as a work environment. It is also important to build the technical and managerial skills of the NHIS officials as the regulatory agency.

Encouraging these actors/stakeholders to work harmoniously in the context of these challenges towards achieving a common goal, will require the scheme to assume a regulatory role of coordination and good leadership and governance. Assuming this role will require the scheme to develop and bridge its areas of deficiencies. It will also need to design and develop a workable framework within which all stakeholders will operate. It must be designed to enable a platform for building trust among stakeholders and between the major stakeholders and the scheme beneficiaries. The framework must also accommodate the delineation of roles and responsibilities of individual stakeholders to avoid unnecessary conflicts of interests, and where there are any, there must be mechanisms for conflict identification and amicable resolution of such. More importantly, funding of the health system must be improved, increased to at least the 15% of annual total budget, as agreed upon by partner countries in year 2001 (257). The funding must specifically address the upgrading of PHC centres throughout the country, training of health care personnel, recruitment and mechanisms to retain them, including supportive supervision mechanisms for improved performance.

CHAPTER SIX

6.0 Discussion

This study is multi-disciplinary in nature, in that it combines data from three different sources of geo-spatial, quantitative and qualitative studies. Findings from each of these sources complement each other in the effort to explain and understand better the observed geo-spatial distribution of enrolees across accredited health care facilities in the city of Ibadan and the factors that determined this. In the same order, the observed geo-spatial pattern of spread of health facilities and how and why enrolees chose to receive care in these facilities will be explained. The quantitative data will give more understanding of the observed pattern, while the qualitative data will be used to explain and provide better insight into the reasons behind the pattern. Conclusions will be drawn based on these three different disciplines and appropriate recommendations made.

6.1 Objective 1: The geo-spatial pattern of National Health Insurance Scheme facility patronage in relation to enrolees' places of residence

The geo-spatial maps (Figs 20 - 24.) and Table 14 show the pattern of patronage of NHIS accredited facilities in the study area. Many factors could have been responsible for this observation. Foremost of these was the low level of trust from other stakeholders in the scheme towards the government programmes in the health system. As mentioned in the qualitative results, the beneficiaries (enrolees) and health care providers were reluctant to enrol in the scheme with the belief that it would not work, as had been the case with many earlier health interventions. Thus, only a few of the available providers indicated interest and collaborated with the government to provide health care services to the enrolees. Coupled with this, is that the enrolees were compelled to enrol and the majority were literally 'pushed' over to the few providers available. Thus, the prevailing situation at the inception of the scheme did not allow much opportunity for enrolees to choose health care facilities close to their residences. Secondly, it is possible that some of the enrolees did not have good knowledge of the existence of other NHIS accredited facilities closer to their place of residence, and thus unknowingly chose facilities that were further away. Thirdly, it should be recalled that many of the available health care providers did not partner with the government in the scheme at inception, but came on board later to provide care to enrolees under the scheme. Since they could not have been

chosen as providers at the inception of the scheme, they could appear to have been bypassed by enrolees whose residences were closer to them, though the bypassing was not deliberate. Another factor that is hardly addressed, nor considered in this study, is the fact that for certain reasons especially the stigmatizing of illnesses, nearby facilities could be bypassed so that the enrolees would not be recognized.

Previous studies that have studied bypassing health care facilities and providers (12, 92, 110, 111) have portrayed the phenomenon as a simple deliberate action on the part of the health care consumers seeking better quality health service. However, the present study has added other likely factors responsible for non-deliberate bypassing events, such as newly accredited health facilities, inadequate knowledge by clients of the availability of closer NHIS accredited facilities, which may have occurred because of the facility being newly accredited, or a straightforward case of lack of knowledge of an already existing facility. Stigmatising illnesses with the associated likely event of deliberate bypassing a facility closer to residence is another likely factor (92, 258). Other factors that have been cited as likely responsible for bypassing could be due to exigencies such as the location of health care facilities close to work places, frequently patronised areas such as market places, friends and family residence (92). This study did not consider these factors. We thus accept this as a limitation.

Although only 147 (34.1%) of the total respondents claimed to have bypassed a facility, in reality, 405 (93.9%) did, and only 26 (6.0%) patronised the closest NHIS accredited health care facilities closest to places of residence. A close study of the third spatial map (Fig 3) is in support of this. This tends to show that factors that were responsible for bypassing health care facilities are many, and an address of this (bypassing) for an efficient health delivery system must consider these factors. This address will have to consider particularly the major factor, which is trust in the health system, improving the quality of available care delivery in the facilities and provision of adequate information about the location of NHIS accredited health care facilities for appropriate and informed choices among enrolees.

Among those who bypassed, the furthest distance travelled was 25.2 kilometre while the shortest was 0.11km. However, among those who did not bypass, the shortest distance travelled was 0.03km while the furthest was 8.3km (Raw data, availability at request). As there was no reliable data with regard to distance travelled/cost data in this environment, estimates of distance travelled and transportation

fare are highly inaccurate, as sometimes distance travelled and cost of transportation may not correlate.

Euclidean metric (straight-line distance between two points) was used as a proxy for spatial access to health service points (facilities). It is noteworthy that this method does not take into consideration geographic and infrastructure barriers such as elevations, slopes, water bodies and other physical barriers on the route to accessing health care. It is acknowledged that these barriers could be taken care of by other methods such as the network analysis method for distance measurement. However, it should be noted that the Euclidean approach remains a better choice in resource-poor settings where travel is largely done by walking through largely non-motor-able pathways, and where there is a lack of actual travel time and cost data and self-reported travel time is usually inaccurate (92, 95).

The tables below (Appendices XVI - XXVI) show health care facilities where the study was conducted and the proportion of enrolees that bypassed other facilities to patronise the (study) facility.

Appendix XXXII especially shows that the average distance covered by an enrolee to access care in the scheme in the study area was between 1.096 – 5.914 Kilometres. It is however important to note that the majority of these enrolees patronised the most faraway facilities (where the scheme assigned them) than the closer ones. This finding support a previous study also carried out in Ibadan whereby health care consumers covered an average of five kilometres to reach health facilities with a consequently high cost of transport and long hours spent on the road (141). Studies have shown that an average health care consumer prefers to receive care in nearby facilities than the far away ones (92). When individuals are compelled to travel considerable distances to receive care, it reduces the willingness to seek care (12, 110, 111, 201) and when they do eventually, it worsens health outcomes than when the facilities were closer (19, 26) especially in Nigeria and other developing countries where access to health care facilities faces a myriad of barriers on both the demand and supply sides of health care market such as poor transportation system, inadequate and inefficient public infrastructure, poverty and the attendant inability to afford basic needs of life even when the cost is within reasonable limits (6, 111). This is worse-off in the rural areas (26). It is advocated that policies that will address these challenges and enhance access to available care (6) are strategically designed and implemented in partnership with beneficiary communities for sustainability (195).

The geo-spatial maps generated from this section of the study display the spatial relationship between enrollees residence and patronised NHIS accredited health facilities on one hand, and the spatial relationship between enrollees residence and the nearest health facilities. The geo-spatial maps were supported by the data of the pattern of patronage in each of the study facilities as shown in the tables in appendices XVI-XXVI. This outcome has demonstrated that objective 1 was met. It has provided more understanding of the geo-spatial relationships between places of interest as mentioned here.

6.2 Objective 2: Enrolees' factors that influence choice of health care facilities

Respondents from older age groups were more than three times the number of younger ones. This contrasts with the 2013 NDHS and other sources which report that the age distribution of the Nigerian population and similar other countries in the SSA characteristically have a high proportion of young people (44, 63, 82, 171). The observation in this study may be partly due to a long embargo on employment in the formal sector that has resulted in the population of the current government employees being in the older age group without a concomitant younger population as a gradual replacement. Another factor could be that the study population (NHIS enrolees) is restricted to a select privileged few as compared to the more representative general population. However, the population distribution of respondents by sex, by enrolment under the NHIS and by marital status reflects the latest NDHS Report (82). The higher proportion of female respondents is suggestive of better health seeking behaviour among women compared to that of men (259, 260). However, inconsistencies in the pattern of health care seeking between men and women have been reported (261). It is an expected observation that the majority of the respondents attained a tertiary level education as enrolees under the NHIS are mainly individuals in the formal sector employment of the Federal Government of Nigeria (63). Almost all the respondents were either from a government establishment or an organized private sector (Table 15). This is in alignment with the claims that only a handful of the present enrolees under the NHIS are voluntary contributors. It is also similar to the general pattern observed in some other countries, and the reasons put forward as responsible for them may not be unconnected with the observed pattern in this study. In some Asian and African countries with a form of social health insurance scheme, lack of adequate information, poverty, complicated enrolment procedures and perceived poor quality of services among others have been suggested as responsible factors for the low enrolment among this group of people (50, 262). Contextually designed strategies to address these challenges will assist in turning around the picture to the benefit of the informal sector in different settings.

In this study, active selection of health care facilities and providers occurs mostly among those who were older than thirty-five years, in the high socio-economic class, have acquired the tertiary level of education, a higher degree, and those who present with multiple morbidities. However, older age group, attainment of tertiary education, high socio-economic class, and presence of multiple morbidities a predictor of active choice of health care facility or a provider. It should be noted that the number of those who claimed personal choice of a health facility or provider was almost three times the number of those who claimed a choice based on advice. This finding disagreed with the generally held pattern of passive selection of health care facilities and providers by the majority of consumers compared to a few who made active selections (90, 96). However, the likely reason for this observation could be the possibility that what respondents referred to as personal choice was heavily influenced by the limited opportunity to choose at the inception of the scheme when there were few health care providers willing to partner with the NHIS on the scheme. A combination of older age and the presence of multiple morbidities are mutually inclusive explains the need for an active search for quality health care as this study shows (92, 94). Health literacy is usually higher with an increasing level of education (90), and this may explain the active choice of health facility among those who attained a tertiary level of education in this study.

The reluctance to enrol in the scheme at inception was because of a lack of trust in government social policies. Eventually, the majority of the enrolees were literally ‘pushed to available providers’ by the NHIS, HMOs and employers who acted on the presidential order that mandated the scheme to get potential beneficiaries enrolled. According to the qualitative findings, it explained why a few of the providers have large number of enrolees while some have very few. This observation was explained by the knowledge that those with high volumes (of enrolees) were among the very few providers who collaborated with the scheme at inception and the ones with low volumes came on board much later. To strengthen this explanation, it should be noted that high socio-economic class predicted active choice of health care facilities and providers. While the majority of the enrolees who were government employees were ‘pushed’ to providers and had little or no opportunity to choose (providers); the likelihood is that those who were voluntary contributors in the scheme were individuals who were willing, and were financially able, to fund a contributory health care system. In an environment where the majority of the people are too poor to fund health insurance scheme by themselves (50), it could be averred that voluntary contributors were in the high socio-economic class

and had some level of health literacy in order to obtain, process and compare different health care facilities and providers, while making a choice (90).

About one-third of study respondents patronised a health care facility further away than the ones closest to their places of residence. Ordinarily, individuals utilize health care services closest to residential places (90, 92, 263), however often, individuals and households leave the closest health care facilities to patronize a further away facility (19, 39). When this happens, provided the individual knows about the other available provider (that is the closest facility or provider) and that the facility attended is not the closest to the residence (264), the phenomenon is called 'by-passing' (39, 201, 264). Some reasons have been cited for individuals patronising a health care facility further away, instead of a facility closest to their residence. Topmost of these is the quest to search for quality health care (19, 92). Studies have demonstrated that individuals and households prefer to patronise health care facilities with adequate and qualified staff, functional equipment, and with well stocked drugs compared to facilities that lack such (19, 39, 85). This becomes more important in situations of chronic comorbidities that will require more complex treatment plans involving a multidisciplinary health care team and management (94, 108, 265).

In a recent study conducted in Nigeria by Michael and colleagues (2019), the availability of functional equipment, specialist health care personnel, ease of receiving specialist care and overall high quality of care including general physical environment and elements of functional quality of care were strongly associated with choice of health care facilities among enrollees under the NHIS (91). However in this study, having multiple morbidities was weakly associated with bypassing and was not a predictor of it.

At some other time, an individual's illness may not be perceived as severe, yet lower level health facilities were not patronized for the purpose of receiving care but rather higher-level facilities. This is suggestive of a poorly managed/administered health care referral system (39). Some health conditions commonly associated with stigma such as tuberculosis, HIV and similar others have been cited as factors that could influence bypassing a health care facility (92, 258). Unaffordable cost of care, especially among the poor is another reason (266, 267). Cost of care is a factor that limits ability to access health care facilities especially among the poor (4, 129). In this study, issues of stigma and cost of care were not in the objectives under study, thus were not investigated and therefore, will not

be part of the areas of focus, more especially, social health insurance as is available under the NHIS makes cost of care a non-effect.

However, in the search for better quality care, health care consumers often travel further than when the closest facility is patronised (19, 92). This is often associated with poor health outcomes, as studies have shown a distance decay with facility utilization varying inversely with distance (110, 111). This observation of decreasing facility utilization with distance have been reported in earlier studies in Nigeria (13), in Sri- Lanka (201) and in a recent systematic review of access to skilled birth in SSA (111). Karra and colleagues (2015) in a multi-country study of health facility access, service utilization, and child health outcomes relative to facility distance and child mortality showed that there is a lower odd for facility delivery with increasing distance between residence and health care facility. The study further stated that relatively small distances from health facilities are associated with a considerable level of mortality in children (19).

Certain socio-demographic characteristics such as age, sex, income and educational status as well as individual factors like severity of illness influence bypassing. The older the people, the higher the income and level of education, female sex and the more the perceived severity of the illness, the more likely people are to search for a health care facility that is supposed to have a high level of quality health service even if it is further away from the residence than a closer facility that is perceived to be of low quality. Increasing old age is more likely to be associated with multiple degenerative diseases that are chronic in nature and may require more hospital visits for a multidisciplinary management across many specialities (92, 95, 97, 265). Invariably this is more likely to be available in higher level centres with more qualified health care personnel, equipment and drugs (39, 97, 265). The female sex could be more prone to seeking health care more than men because of, childbearing and motherhood. Thus, the tendency to seek better health care services more often than men. Individuals with higher income are more likely to seek care further away from their residence. Financial capability and willingness to pay is a factor that could ease cost of transportation or mobility and affordability of cost of care in more expensive, higher-level health facilities (71). The higher the level of education, the more informed people are and the better the level of health literacy to enable them to obtain and process available information on health care facilities around them for the purpose of seeking and receiving better quality care (90). When illness is perceived to be severe enough to warrant the best quality health care available especially in cases of multiple morbidities, access to quality care becomes paramount over any other factor (92).

In this study, except for age and sector of employment, most of the socio-demographic attributes known to be associated with or are known to be predictors of, bypassing were not in agreement in describing the phenomenon of bypassing. They were either not predictors of bypassing, or at the best weakly associated with it. This observation may be connected with a generally little known opportunity in the choice of health facilities and providers among enrolees in a health insurance scheme (71), coupled with the peculiarity of the allocation of enrolees across available health care providers at the inception of the scheme in Nigeria. Literature has established the connection between old age and multiple morbidities (94) and therefore that older individuals tend to travel far seeking quality health care (92). It is not too clear why younger age individuals were more likely to bypass nearby facilities for further away ones. However, a factor that could explain this is the adventurous/exploratory nature of young people in addition to the arbitrary allocation of enrolees who were civil servants under the scheme. This study shows that civil service employment was a predictor of bypassing health facilities. This could be explained by the fact that the majority of the respondents were in the civil service and with a higher level of education. This is in agreement with the pattern that the higher the level of education the more the tendency to have better health literacy, seek a better quality of care, and in the process to bypass nearby health facilities for further away ones.

In support of established literature, findings in this section of the study reveal factors that influenced choice of health care facilities or providers. These factors have been attributed to both enrolees and third party's influence. However, for the majority of the enrolees, personal choice was cited more, though this (personal choice) was heavily influenced by third party factors.

The findings also revealed that facility infrastructure in all the study sites was grossly inadequate. Although the choice of a large number of the enrolees were influenced by third parties, for those who had the opportunity to choose, quality of care, was an influencing factor. These findings have assisted in meeting the objective of this section of the study.

6.3 Objective 3: the quality of care at selected National Health Insurance Scheme accredited health facilities

Studies have shown the role played by the availability of medical equipment, consumables and other supplies in the facility as a factor of perceived quality of care. The tendency for health care consumers to travel further away in search of quality care has been reported in many studies (12, 39, 92, 95, 201). It is also instructive to note the negative effect travelling further away to seek care has on health outcomes, including an inverse association with the utilization of health care services (110, 111), and likelihood of increased mortality (19).

A WHO report asserts that in the absence of clean water, power supply, drugs and basic medical equipment and other supplies, health care workers' performance will not be optimum even if they are motivated. Provision of good infrastructure and supply of essential items in facilities will enhance a health workforce that is available to deliver necessary care, competent with technical knowledge, skills and behaviour. An adequate supply of functional equipment and other items could also ensure a responsive and productive health workforce needed to strengthen the health system in Nigeria and in similar other countries (268). In Nigeria, where funding of the health sector is very poor, increased funding of the health sector will be a vital strategy to reposition the scheme for better performance to achieve its objectives.

This study revealed the poor state of facility infrastructure including the need to source electricity power supply from many sources because of the unreliable government national grid which has necessitated individual facilities to have more than one sources of power supply. It should also be noted that only one (1 = 9.1%) of the facilities claimed to have a water supply from the government pipe-borne water. This invariably implies that individual providers bear the cost of electricity power generation and that of water supply for use in the facilities. With this, it is obvious that over-head costs of service provision is likely to be much higher than is necessary. It could mean that providers hardly make enough profit to stay in business, and if they will have to survive, the quality of care rendered to health care consumers will be compromised. This is obviously a counter-productive stance to the objectives of the scheme. It should also be noted that health care personnel in many of the health facilities were deficient in number. Quite a number of these facilities made use of informally trained individuals who serve as nursing staff. To deliver standard quality of care to health care consumers under the care of these informally trained health personnel is doubtful. In addition to

this, cases of irreversible medical errors that could result in fatality is more likely in such circumstances. These are some of the tell-tale signs of a weak health system.

Appropriate authorities and stakeholders should work hand-in-hand to strengthen the health system in Nigeria. This can be addressed by better funding of the health system and with a vital mechanism for accountability, investment in physical infrastructural facilities such as health facility buildings, medical equipment, drugs and other necessary consumables. To establish and maintain this, appropriate individuals should be trained in equipment maintenance procedure, one to ensure equipment lasts to the specification of the manufacturer, and two, to avoid the issue of medical errors and their negative consequences. Other essentials are water and electricity supply. Currently, electricity power supply in the country has been very poor, the government must as a matter of urgency address this. The same goes for water supply. The role of an adequate and sustainable supply of potable water for hospital infection control purposes (269) cannot be over-emphasized and should be treated as essential. Otherwise, while health care facilities should play their role in the restoration, maintenance and promotion of health, they could turn out to become foci of nosocomial infection and epidemics (270, 271).

While availability of facility infrastructure including skilled human resources for health, is termed the technical component of quality, the relationship between consumers and health care workers, measured by the perceived attitude of health workers in the process of delivering care is referred to as the functional quality of care (102). Studies' findings are suggestive that the functional quality of care is the component with a higher influence on health care consumers' perception of quality of care than the technical component (17, 18, 102, 272).

Carrin (2002) strongly argued that poor or inadequate facility infrastructure; an inadequate supply of skilled, motivated health workforce, lack of basic equipment, and non-availability of items such as drugs and laboratory consumables is a recipe for failure of health insurance schemes. According to the same source, such situations could result in low trust of health care consumers in social insurance schemes and thus, non-compliance by refusal to pay premiums (273). This is also supported by findings of a recent literature review of the role of trust in health care systems in sub-Saharan Africa (274). Non-availability, non-functional and inadequate equipment and physical infrastructure in health facilities has been cited as a major factor in type III delay in the process of care delivery. According to Thaddues and Maine (1994) in a literature review on maternal mortality in developing

countries, shortages of qualified staff, essential drugs and other supplies contribute to maternal deaths especially in developing countries (13). The position of Thaddeus and Maine (1994) was corroborated in an earlier study by Okonofua and colleagues (1991) on maternal death in Ile-Ife, Nigeria whereby lack of or inadequate provision of supplies is a major factor of delay in managing obstetric emergencies and therefore a major contributory factor to maternal deaths (11).

Recently, the federal government implemented the Basic Health Care Provision Fund, (BHCPF) a World Bank funded project (251). The BHCPF has in its package, facility infrastructure development of primary health care facilities including provisions for the purchase, repair and replacement of medical equipment. This is a promising development and should be strengthened. Human resources for health especially in the health insurance industry should be one of the major points in repositioning the scheme for optimum performance and for it to realise the objectives for which it was established. Nigeria has an inadequate number of health care workers in almost all the cadres to meet the country's needs (86, 275, 276). It is one of the countries with a critical shortage of health care providers, defined by fewer than 2.28 doctors, nurses and midwives per 1000 population and failing to reach a target of 80% of deliveries being attended to by a skilled birth attendant (268). Investment in personnel development including appropriate, regular wages and non-pecuniary incentives should be made available to attract, retain and motivate health personnel for enhanced productivity (277). This aspect of the study has enabled better information about the state of physical infrastructure and health workforce in the study facilities. It has shown that generally, there were gross deficiencies in health resources in these facilities. It portrays the health system in the contextual space of the study as weak.

6.4 Objective 4: Factors influencing satisfaction with service delivery among enrolees

Evidence from previous studies has shown that the relationship between socio-demographic variables, uptake of, and satisfaction with health services received is not consistent; while some affirm that there is satisfaction (121, 122, 124), findings from some others are at variance (278). Yet among those that claims there is a relationship, often they assume different directions in the relationship, for example while some attribute younger age with satisfaction to health services received (122, 279), others claim that the older, the more likely, the people to be satisfied (121, 123, 280).

In this study, younger age, employment in the private sector, and seeking information about quality of care were predictors of satisfaction with services. This is also the same as having no knowledge about the NHIS and patronising faith-based health facilities for care. Younger age was a predictor of satisfaction with health services. This finding was in agreement with previous studies; in a study conducted among in-patient hospital clients in Ethiopia, Ambelie and colleagues (279) claimed that younger people were more likely to be satisfied with health services received. This was in agreement with a much later work conducted among patients in the out-patient departments of selected hospitals in Ethiopia (122). However, older age were found to be associated with satisfaction than was younger age in some other studies (123, 280). It has been suggested that younger individuals were more likely to be easily satisfied with services because they are more likely to expect less from the health system, unlike older people who are more experienced and exposed, and because they are likely to have multi-morbidities and thus less likely to be easily satisfied because of a higher level of expectation from the health systems (122, 279).

Of the parameters of functional quality that improve satisfaction with care, the importance of interpersonal relationships cannot be over-emphasized. This has been attested to in many previous studies (281-283). The importance of interpersonal relationship was reinforced by the fact that other parameters of functional quality of care that enhance satisfaction, such as cleanliness, availability of medical equipment, drugs and other consumables as well as trained personnel may not be applicable or play any significant role in what determines consumers' satisfaction with care in developing countries. In a study conducted in Ibadan among Traditional Birth Attendants (TBAs) with the aim of determining factors that attract pregnant women to such facilities for care and delivery despite locations in the slums, including poor physical infrastructure, dearth of medical equipment, drugs and other consumables, poorly educated health personnel and sometimes poor health outcomes, it was reported that a robust interpersonal relationship with clients who patronize such places is a prominent 'pull' factor (272). Similar reasons have been cited as a determinant for patronage of facilities in similar settings (284, 285). Thus, in the absence of all the above structural factors, the only factor that seems to explain satisfaction with care in facilities that are not well equipped is provider-client interaction.

This study shows that civil servants were found to be less satisfied with care compared with those who were in the private sector. Chemir and colleagues (2014) in a satisfaction study conducted among pregnant women in Ethiopia, reported that compared with their counterparts, women who attained

tertiary education and those whose income were high, were less likely to be satisfied with care (286). In developing countries, and compared with individuals who did not acquire western education, formal sector workers (civil servants) are generally better educated and with fairly good and consistent incomes (48, 50), and these are factors that could enhance access to information about best health care practises. Thus, those who have access to information on better health care services may be less easily satisfied with health care services. Other factors beyond what this present study could possibly explain may in addition, be responsible for this finding among civil servants. The degree of satisfaction with care has been described and defined as the gap between what is expected, and the reality of care obtained (105, 287, 288).

Expectation of high quality of service as could be found among the highly educated formal sector employees, but receiving a lower quality of care than expected is a driver of dissatisfaction among them. This contrasts with the much lower expectation among the less educated or those with inconsistent income whose expectation is usually not as high, and the tendency to be easily satisfied with available care is much higher. This is much more so as it is common among the poor in developing countries with health care resource constraints (286). It has been postulated that individuals with low base-level expectations of quality of health care service are more easily satisfied with available services than are those whose expectations are above the base-level. These expectations are referred to as *exchange and communal trust norms* respectively (158). In this study, because of the consistent income that a higher level of education may have afforded them, civil servants may have exhibited communal trust norm and were thus less satisfied with care, unlike those in the private sector who could be referred to as having exhibited exchange trust norm and thus, the tendency to be more satisfied with available care. The phenomenon of exchange trust norm may explain the satisfaction among those who had no knowledge of the NHIS and its responsibilities towards enrollees and thus expected less from the scheme with an ultimate feeling of satisfaction with services rendered to them in the accredited facilities.

In this study, those who did not seek information about quality of care before choosing a facility were less satisfied with care. Studies have shown that generally individuals do not actively seek information about the quality of a health facility, but they mainly rely on others to assist them to do that (90, 96). The choice not to actively seek quality of care may solely be based on the fact that they do not take such as important or have limited capacity to do so (96). The freedom to choose is sometimes restricted because of the influence of a third party such as an insurer (71, 90). In this study,

choice of health care facilities by enrolees under the scheme was highly limited for reasons of lack of trust in government health policies. This was what was largely responsible for the distribution of enrolees across a limited number of health care facilities at inception. Thus, the majority of the enrolees must have been compelled to patronise health care facilities that they may not have ordinarily chosen because of the quality, both technical and functional, of services obtainable in those facilities. On the other hand, some who made the effort to seek information about the quality of care of facilities prior to enrolment may have come to terms with obtainable services and thus expressed satisfaction with what was made available to them.

Another possible explanation is that information on quality of care as could be available to enrolees in the formal sector and better educated people who were less satisfied with care could be based on the quality of care available in health systems in other countries which were perceived to be better than the health system in Nigeria, hence their non-satisfactory experience with care under the NHIS. Whereas those who reportedly sought information about the quality of care available in the facilities of Nigerian Health system may have come to terms with the situation and thus felt satisfied with available services.

Health facility characteristics such as cleanliness, availability of medical equipment, drugs and other supplies and the adequate number and skill -mix of health personnel engender a sense of perceived quality, trust in the health system and ultimately satisfaction with care (17, 102, 283).

Diverse opinions exist about satisfaction with care in public and private health facilities. The outcome of assessment of health care facilities on related concepts of satisfaction with care, quality of health care services and trust depends on the contextual factors of the geographical environment. Preference for a type of health care facility is suggestive of perceived efficiency, responsiveness and therefore better satisfaction with care (90). In a systematic review conducted in selected facilities across many European countries, while findings from many of the countries showed a higher satisfaction with care in public facilities, a few findings from some of the countries reported higher satisfaction with care in private health facilities (289). However, in another systematic review of some thousands of hospitals conducted across nine European countries, generally, public health care facilities were rated higher in quality of service and satisfaction with care among service recipients than were private-not for-profit and private for profit facilities in that order (290). This was in line with findings of high levels of satisfaction with care by another study conducted in Kenya among mothers of new-borns

who were delivered of babies some hours prior to the study in selected public and private hospitals in Kenya (291). However, in yet another systematic study conducted in selected public and private health facilities in some low and middle-income countries, findings showed that private facilities had higher levels of satisfaction than public facilities (292). This was in agreement with a similar other study in Southwest Nigeria (140). Another systematic review conducted in India among parents of children admitted in some selected hospitals also reported better experiences and satisfaction with services provided by private health services arrangement (58).

This study was also in support of higher levels of satisfaction with care among those who patronised faith-based facilities, due to the better technical domain of quality as represented by human and materials resources as well as better physical infrastructure. This is also supported by the functional domain of quality of care as expressed during the interviews conducted on some of the enrolees in faith-based facilities. This study opines that quality of care in the NHIS accredited facilities should be attended to. It is believed that this will enhance satisfaction with care among enrolees patronizing such places and thus, facilitate the uptake of, and continuity with, available care. It will also encourage the public to patronise health facilities when it is necessary. This will assist in improving population health for growth and development.

This section of the study has been able to show predictors of satisfaction among study participants. It has also shown to some degree why enrolees were more likely to be satisfied with care in the faith-based facilities than with any of the public or the private health facilities. These findings will be useful in repositioning the scheme.

6.5 Objective 5: Stakeholders' perceived roles in the observed enrolees' distribution pattern in selected National Health Insurance Scheme facilities.

Different roles in the health system are assigned to and performed by, different but appropriate actors, who work hand-in-hand to ensure that the objective of the system (health) is achieved. To ensure this happens, individual actors in the arrangement need an assurance that their interests will be protected rather than taken advantage of. This assurance is guaranteed by trust, which usually has been built and maintained over a considerable period of time and strengthened by references to previous relationship experiences with the actor(s) in the referenced system. An unpleasant or unsatisfactory previous relationship experience with or within a system especially with some level of breach of trust could result in non-cooperation in subsequent projects. In the USA, the four decades (1932-1972) Tuskegee Syphilis Study carried out to study the effect of untreated syphilis among African Americans in the USA was a notable event in the history of the importance of moral principles in the conduct of health research and how it could affect trust, particularly when it has to do with provision of care across racial divides (164, 293).

Other similar cases have been reported in the recent past; for example at the end of the 1980s, a group of volunteer health workers were accused of deliberately injecting some hundreds of children in a hospital in Libya with HIV. It required almost a decade-long diplomatic consultations for a resolution of the issue (294, 295). In the Democratic Republic of Congo (DRC), in the recent Ebola outbreak, cases of outright rejection of health interventions among potential beneficiaries have been documented. Accentuated by underlying distrust in the political system due partly to long neglect of the communities, health interventions on Ebola were misconstrued as a ploy by the political system in the country and foreign collaborators to inject people with deadly substances. On some occasions, cases of violence including some that took the lives of some of the health workers and community members who accepted the interventions have been reported (296).

Negative impacts of unethically implemented health interventions are usually not limited to the geographical space and time of the intervention. In Nigeria, the effect of an improperly implemented health intervention and the ripple effect was documented in the Pfizer Trovan trial (255) during a meningitis outbreak in the Northern part of the country in the mid-90s and the attendant death of many of the victims which was ascribed to the unapproved drug. The resultant breach of public trust that emanated from this contributed largely to a boycott of polio vaccination programmes in 2003 in

Northern Nigeria. Influential actors in the North of Nigeria campaigned against the vaccine which was alleged to contain harmful substances and thus the community rejected it. The subsequent increase in polio flaccid paralysis in Nigeria and especially in Northern Nigeria contributed to the spread of wild polio virus to other West African countries, and also to some countries in Central Africa, and the Middle East (254, 255). Ward and colleagues' work lent credence to the observation that dissatisfaction with health interventions correlates with low level of trust in political institutions and the health systems (158, 161).

On the other hand, the opposite is the case with high levels of satisfaction (207). A government is recognized to be doing well whenever it is providing services that are perceived to be beneficial to the people (297). In research work by Chukwuma and colleagues that assessed trust and health service delivery in Nigeria, it was reported that irrespective of other societal attributes such as ethnic and religious loyalty, trust in the political system increases in communities that had access to government maternal and child health care services, compared with other communities without such amenities (167). Similar findings were reported in Tanzania and Mexico by Croke (2017) and Fried and Atheendar (2017), respectively. In the study conducted in Tanzania, significant improvement in the approval of political leaders was achieved with the distribution of malaria insecticide bed nets (166), while in Mexico, provision of potable water improved acceptability of political leaders (165).

6.5.1 Trust in Government

Trust is relational, it is vital in the co-production of health between patients and health care workers, and also in the maintenance of health (116). It influences health seeking behaviour (151), it also improves social interaction among health system operators and, between them and health care consumers (71, 106). Overall, trust impacts on health system performance, quality of care and population health outcomes and health status (106). Lack of trust in the health system and health system interventions with poor uptake of available services may be accentuated by prior unsatisfactory experiences in other sectors of the economy. Onoka and colleagues in the year 2013 averred that disappointment with civil servants in the National Housing Fund (NHF) programme of Nigeria was a major reason labour leaders in that country rejected the prepayment scheme available in the National Health Insurance Scheme (NHIS) of Nigeria which was launched some years later, for the fear that it would collapse like the NHF did (228).

Issue about corruption

Chuma and colleagues in a 2013 study cited among other challenges, lack of legal structures and government support, weak managerial capacity and poor technical design that led to fraud, adverse selection and cost escalation as some of the challenges facing health insurance schemes in Africa (50). In a recent study among personnel in the health insurance industry in Nigeria, Adewole and colleagues cited managerial and technical capacity gaps among the personnel in the industry (298). At the inception of the NHIS, inadequate technical and managerial capacity compelled the scheme to cede its responsibility to design and operate a viable, and contextually relevant social health insurance scheme, to the HMOs. According to the reports from the respondents, the HMOs took undue advantage of this privilege to design the operation of the scheme to favour themselves and at the expense of the scheme. This has disempowered the NHIS and empowered an external actor to control the scheme. The NHIS that is supposed to perform a statutory supervisory role on the operations of other stakeholders including that of the HMOs is inadequate in technical and managerial capacity to perform its functions.

This development ushered in many challenges that the NHIS seemed incapable of correcting, while the HMOs have become stronger financially and politically, influencing policy makers to maintain the status quo that seemed to be in their favour. For instance, the HMOs authorize requests by the providers when there is a need to render secondary care to an enrollee, and at the same time, payment for such services has to be approved by the HMOs. There was also the allegation that HMOs fail to pay capitation and other types of payment to providers when due, but rather keep the funds in fixed deposit bank accounts for a period for personal or corporate profit purposes. This has contributed to an unresponsive system in the scheme generally. To worsen this, there was a claim that the HMOs connive with politicians to maintain the status quo and resist change that is necessary to make the scheme more efficient. Other forms of unwholesome practise involved some of the health care providers deliberately including charges for services that were not rendered and some of the enrollees who collect cash and the likes from health care providers in place of health care services that were not actually provided.

Coupled with its technical and managerial deficiencies, the NHIS received little or no support from other stakeholders to turn around the scheme to make it a more responsive entity. There is a need for capacity building of the personnel, to empower them to gain the necessary technical and administrative skills needed to manage the operations of the scheme responsively and efficiently.

External stakeholders such as the HMOs need to be forced to function within their statutory roles in the scheme. This may not be possible without a reform of the present legal framework of the scheme to correct the design (of the scheme) which seemed to be in favour of the HMOs especially. The political will and support of (the political) stakeholders is necessary to effect these changes.

6.5.2 Trust in the health system

Trust has been referred to as a relational concept, and that it is the ‘back-bone’ that sustains working relationships in organizations, institutions and systems, including the health system (116). In a previous study, it was referred to as the ‘glue holding everything together in social life’ (299). With reference to some population health indices such as average life expectancy at birth, maternal mortality ratio, infant and child mortality rate, the health system performance in Nigeria is poor. One of the measures taken to address this is a reform in the method by which health care is financed. Over a decade ago, the NHIS was established as a tripartite public-private partnership arrangement. However, the scheme’s population coverage is abysmally low, at less than ten percent. It was also observed that both the spatial spread of the (NHIS) accredited health facilities and the distribution of enrollees in these facilities was unevenly distributed.

Some of the challenges militating against the scheme in achieving its objectives was the response of the stakeholders at inception, as well as in its current day-to-day administrative mechanisms and relationships with stakeholders. These two factors are among others that are postulated to have contributed to the observed skewed spatial spread of the accredited facilities, as well as the NHIS enrollees in them. For instance, when the scheme was newly established, health care providers, especially those in the private sector, and the potential enrollees, especially the labour unions, were reluctant to be part of it.

Statements made by many of the respondents during the interviews portrayed the near absence of trust in government programmes, and the reason why it was difficult for many of the health care providers to collaborate with the government in the scheme at inception. However, government health care facilities were mandated to partner with the scheme. In addition to the government health care facilities, a few of the private health care providers ‘took the risk’ and collaborated with the scheme almost immediately. It has been corroborated that these early starters became the few NHIS accredited health

facilities with the largest number of enrolees. The reason for this is simply because of the few facilities that were available to enrolees from which to make their choices at the inception of the scheme.

The reluctance to join the scheme was not limited to health care providers. Enrolees too showed a high degree of reservation about joining the scheme. At the inception of the scheme especially, the majority of these enrolees were literally assigned to the available few health care providers.

Inconsistencies in policy implementation in the health system in previous times, failure of continuity of policies, including those in other sectors outside of the health system, could serve as negative examples for stakeholders, and give them enough reason to doubt the sincerity of government in subsequent social policies including the health sector.

Since similar situations occur in the same Nigeria contextual space, this NHIS experience is not likely to be an isolated case, and if it had happened in a similar manner to other health care providers, many of them across the country would have been left out of the scheme simply because of loss of trust in government intentions. This resulted in the availability of a few, mainly the public (government) providers, in the scheme at the start of the programme, which may inadvertently have contributed to the observed spatial spread of the few accredited health facilities which partnered with the scheme at inception, and the distribution of the enrolees in them.

Front-line staff are involved in delivering public services to members of the public. They also have some discretion in how they apply the objectives and principles of policies handed down to them from central government. These front-line staff are referred to as '*street level bureaucrats*' (185). The almost near non-participation of the majority of the 'street level bureaucrat', who are frontline health care providers, may have contributed to the unevenly distribution of the health care, providers and the enrolees in the scheme.

This observation reiterates the need for healthy relationships across all levels, from those who are responsible for policymaking and those at the local health system operational level who are responsible for policy implementation and have their power to determine the outcome of policy interventions. Similar experiences have been reported in other settings. A typical example is a South African study where nurses were reported to have displayed poor disposition to delivering free health care services

to the public as a result of a perceived non-involvement during the policy making process (186). A recent study conducted among physicians in a rural area in South Africa also demonstrated the influence of health personnel on health policy outcomes. In this case, physicians had to use their discretion to efficiently allocate limited human and material resources to meet the health care needs of the communities that they served (231).

Outside of the health sector, cases of failed government programmes were also common. One example that kept coming up during the course of the interviews was a scheme that was established to cater for the housing needs of the masses, the National Housing Fund (NHF). There were complaints among subscribers of the non-performance of the NHF, despite many years of financial contributions into the NHF.

Usually, financial contributions are made by the government through direct and regular deductions from workers' salaries. This unsatisfactory experience in the NHF was a contributory factor to the opposition that the NHIS had from the Nigeria labour unions, in their refusal to make financial contributions into the scheme. The most recent example is the reported multi-billion naira fund mismanagement in the Niger Delta Development Commission (300).

In addition to the examples of unsatisfactory public service delivery, it is a common occurrence in Nigeria for the government to owe workers' salaries for long periods. Thus, when a scheme that would make regular financial remittances to health care providers for services rendered to enrolees was introduced, it was considered unrealistic or unsustainable at best. Consequently, the majority of the health care providers especially those in the private sector who could not be compelled to partner with the government in the scheme stayed out of it initially. In an environment where failure in government policy implementation and sustainability has become the norm, trust in government policies will be characteristically low. This is usually a cause for the people to either not accept, or delay the acceptance of, potentially beneficial health programmes. Delayed or poor acceptance of health programmes could adversely affect the pattern of distribution and spatial spread of health service delivery points such as health care facilities. Measures to build trust of the consumers in the health systems (151) should be prioritised by the government to enable good response from the potential beneficiaries for sustainable intervention.

Other factors that make people reject government health policies may involve a history of perceived or outright maleficence in previous health care interventions in affected communities. For instance, the Pfizer trial and meningitis outbreak in the 1990s in the Northern part of Nigeria and the associated cases of mortality, was a trigger for a rejection of subsequent health interventions, especially the global polio eradication campaign (255, 301). The result of this was a widespread epidemic of polio infection even far beyond the shores of Nigeria. The low uptake of the NHIS could be remotely attributed to previously rejected health interventions including the polio programme. This is however not a confirmed cause and effect case.

In this study, there were reported instances indicating low level of trust and sometimes outright animosity among some of the stakeholders. Examples of conflicts between the top management of the NHIS and the HMOs, between the HMOs and the health care providers, and in a few instances between providers and enrolees have been cited.

Information gathered during the qualitative part of the study provide us a glimpse into the relationship especially between the two major partners in the scheme. It is of utmost importance for a viable health system that is alive to its responsibilities that all stakeholders in the system have some level of mutual trust and work together to achieve a common goal. However, when cooperation between stakeholders in a health system is weak, the objective of the system is negatively affected (116) with a consequent loss of quality of health care services received by potential beneficiaries and therefore, a population-wide poor health outcome. It should also be noted that it was not all due to disagreements among the parties all through. There are instances of encouraging relationships among parties in the scheme. Stakeholders should make use of this opportunity and amicably resolve the conflicts that hinder the scheme from attaining an optimum performance.

6.5.3 Provider-patient trust

Although it was less commonly reported compared with other cases, it is of note that unwholesome practices do occur between health care providers and enrolees. This could sometimes take the form of two parties conniving with each other to defraud the system or one party acting it out alone. Health care providers have been reported granting the requests of enrolees by giving cash, beverages and other similar items in exchange for a supposed health care service that was not actually rendered. Sometimes, an enrolee could present a relative who did not qualify as a joint beneficiary in the scheme and presenting such to receive care. Either way, such a practice erodes mutual trust. Studies have reiterated the importance of mutual trust even between a provider and a health care consumer. When a health care consumer has trust in a provider, it enables the consumer to be a co-decision maker in the course of health care management; it ensures better health seeking behaviour and continuity of care among other benefits including general satisfaction with care. A low level or lack of trust (of consumers) in health care providers could be counter-productive, as it could make consumers gravitate towards lower quality forms of health care (272, 302) if they are perceived to have a better functional quality of care. However, this could result in an increase in poor health outcomes in individuals and families (303). In resource-poor settings such as Nigeria and similar other countries, a vicious cycle of poor health outcomes and poverty could be triggered and sustained for a long period.

Health care workers have been reported to perform optimally when they trust health care consumers because this enhances quality of interaction that facilitates disclosure of useful information needed for the provider to take the best possible decision (71). Necessary steps to ensure an environment where mutual trust exists between providers and consumers should be promoted. One such step could take the form of clinical auditing of services rendered and implementation of service protocols (248). A trusting relationship between consumers and the health system could boost the ability of consumers specially to serve as agents of change in information dissemination about the scheme. This could encourage others to enrol in it.

6.5.4 Structural and functional quality of care

Studies have shown that choice of health care facilities by health care consumers is influenced by both the consumers' as well as the providers' factors. Of the provider factors, the structural, process and the outcome domains of the Donabedian conceptual framework (98) come into play. However, of these three domains, the structural and the process domains are much more influential than the outcome, and thus the former two (domains) are the more important (90). While the structural domain largely refers to facility infrastructure including the state of the buildings, equipment and machines, house-keeping facilities and other similar resources, the process is concerned with the way health care as a service is delivered (17, 90, 114). While the structural domain of the framework and the service provided are considered as the technical quality of the equation, the process of delivering the service itself is regarded as the functional quality (17, 102, 114). Both technical and functional qualities have been associated with satisfaction with health care services and the health system. They invariably enhances willingness to seek and use available health care (156). Mistrust could produce exactly the opposite (151) and thus a low level of satisfaction and trust in the health system (161).

When health care facilities do not have basic equipment and required number and skill-mix of personnel, the quality of such facilities is perceived to be low, health care consumers are less likely to be satisfied with care rendered and trust in such health systems is more likely to be low.

Previous reports on health care facilities in Nigeria generally show lack of basic infrastructure, consumables including drug supply, and poor management. While there is a shortfall of health care personnel, those who are in employment are poorly motivated (63, 86, 87). This situation has been reported of to be worse in the rural areas and in the lesser cities (86). Similar condition was reported by some of the study respondents when they attributed the lopsided distribution of the enrolees across

the few health care facilities considered to be of a good-enough standard in terms of infrastructure and availability of personnel, compared to the poor infrastructure of the majority of the available health care facilities. This situation compelled the scheme to lower the standard criteria of health facility accreditation and engage only those facilities that were considered good enough to render services under the scheme. It inadvertently led to most of the enrolees receiving care in a limited number of facilities that were available under the scheme at inception, compared to the facilities that came on board much later.

In this study, although at inception, the majority of the enrolees were assigned by the scheme to the few facilities that were contracted to deliver services under it (the scheme), some of the enrolees claimed to have made a personal choice of health facilities. Some of these claimed to have enrolled in health facilities that were far from their residence seeking better-quality health care. Studies have shown that both provider and health care consumers' factors influence the choice of where to access care (10, 90, 96). Using the Donabedian Conceptual framework on quality, the structural, process and outcome of care factors all influence consumer choice of where to access care (17, 98). Factors that determine choice of facility for care can also be viewed from another perspective, essentially considering all the factors of the Donabedian framework in addition to some others that are explicitly considered.

Earlier studies have shown that choice and patronage of health facilities is influenced by the factors of access in a number of dimensions such as the clients' factors, geo-spatial distribution and location of health care facilities, availability of health care infrastructure including human resources and the pattern of demand for services by enrolees. It also takes into consideration health care, consumers attitudes, expectations and characteristics of the services rendered, and lastly, cost of service, ability to pay and willingness to pay for care (5, 10, 28). All these factors have a direct relationship with functional and technical qualities of care (17, 102), which in turn affect quality of life (9). In this study, cost of care will not be considered as a factor that influences the choice of health care facility since all the study participants were enrolees under the Nigeria social health insurance policy, the NHIS, and thus, financial factors played little or no role in the decision to choose a place to receive care. However, cost of transportation to far distant health facilities in the process of seeking care was likely to be a hindrance to access health services (304).

Quality of health care on one hand, and the distance between the residence of health care consumers and the health care facility on the other hand, are two of the most important factors that influence choice of a place to receive care. Studies could occasionally differ on which of the two, quality of care or distance, takes high precedence. A study by Qian and colleagues (263) in China rated proximity to residence as the more important determinant of choice of health care facility, however Yao and Agadjanian (2018) in Mozambique (92) posited service quality to be consistently critical to choice of health care facility rather than distance of health facility to residence. Distance and quality of care could take pre-eminence differently in individuals at different times and in different health conditions. When the illness is perceived to be severe, quality of care takes pre-eminent status while the effect of distance pales (92, 263). However, when a health condition is deemed to be less serious, the reverse is usually the case (305). Choice of health facility can also be influenced by health facility factors such as the availability of quality health care service resources such as equipment, personnel, drugs and similar others (39, 90, 96). Studies have shown that ordinarily, individuals patronise nearby facilities for their health care needs; in a recent study on sexual and reproductive health among women in Mozambique, results indicated that most women utilised health facilities closest to their residence (92).

In a scoping review by Victoor and colleagues, findings were suggestive that patients prefer close-by health facilities to facilities that were far-off (90). Other studies conducted in other environments by Quian and colleagues in China (263), Odetola in Nigeria (305), and in a study by Tanou and Kamiya in Burkina Faso (110) were in support of this. However, once health care consumers perceive that a facility lacks basic medical equipment, drugs and or qualified health personnel, as much as available information affords them, they tend to search for better facilities that could meet their health care needs irrespective of the distance. In such instances, distance becomes insignificant, but quality of service becomes a greater priority especially when it is perceived that the health condition is severe (39, 92). Earlier studies on health-care facility choice and the phenomenon of bypassing averred that more severely ill individuals tend to bypass and travel further to perceived high quality health facilities than do the less severely ill. The study stated further that facilities with highly qualified personnel, drugs and equipment are less likely to be bypassed (306, 307). An earlier study (305) conducted in Nigeria is in agreement with the more recent findings.

6.5.5 Types of health services available

In addition to seeking a high-level quality of care, other reasons for the phenomenon of bypassing is the perceived lack of variation of available services at low level hospitals compared to higher-level ones. Individuals prefer a facility that could cater for their various health needs rather than being referred to another health facility that serves as a high referral centre. In earlier separate studies by Anselmi and colleagues conducted in Mozambique and the USA, on health service availability and health seeking behaviour, it was reported that lack of variation of health services at lower level facilities was a factor for the people bypassing such facilities for higher level facilities instead (39, 202).

Instances when individuals must travel further than it is necessary to access care has implications for health outcomes. Research workings on the effect of distance, travel time and cost of transportation has suggested a relationship between these entities and negative health outcomes. Distance has been shown to serve as a disincentive to seeking care, as well as an obstacle to reaching a health facility (26). Tanou and Kamiya in an earlier study in Burkina Faso demonstrated that longer distance to the health facility is associated with distance decay and low probability of the use of a health care facility (110). This was also corroborated in a related systematic review conducted across some SSA countries by Wong and colleagues ((111). In a recent multi-country study on the effect of travelling for longer distance on maternal and child health outcomes, Karra and colleagues demonstrated the likelihood of increased mortality among pregnant women with obstetric complications who had to travel over a long distance (19). Okonofua and colleagues (1992) in a similar study to Thaddeus and Maine demonstrated the likelihood of delays in reaching the health facility as a significant contributor to maternal mortality among individuals who died from pregnancy-related problems over a specified period of time (11). In a later study involving Nigeria, Sierra Leone and Ghana, Thaddeus and Maine corroborated earlier study findings by Okonofua and colleague and reported that, individuals from low socio-economic status and with little or no formal education were more likely to be affected (13).

Findings of more recent studies are in support of earlier ones. In a systematic review and meta-analysis of physical access to skilled care for childbirth in Sub-Saharan Africa, evidence suggests that health service uptake varies inversely with distance, that is, increased distance and travel time lower the likelihood of utilization of skilled care at birth in SSA (111, 308). In a multi-country study

by Karra and colleagues, it was demonstrated that longer distance to health care facilities is associated with lower health care utilization and higher mortality for children (19). The closer the health care facility is to place of residence, the more likely people are to seek care (39, 92, 110, 263).

When the volume of clients receiving care in a facility is consistently higher than it could cope with, the effect could be counterproductive to the goals of the health system. Long waiting times, dissatisfaction with and inability to have access to health services even when they have been paid for, as in the case of a health insurance scheme, is not unlikely (23, 24).

A study by Lagomarsino and colleagues (2012) that analyzed health insurance reforms in selected low-income and lower-middle-income countries across Africa and Asia, posits that financial coverage as it is available under a social health insurance scheme could be rendered useless when quality care is inaccessible (24). Quality care may be inaccessible despite financial accessibility when patronage of a health facility by consumers is much higher than it can cope with. Studies have shown that robust communication, acts of courtesy, listening to patients' complaints, respect for patients' opinion, perceived thoroughness during physical examinations, taking time to explain and listen to patients, respect for privacy and confidentiality among others are elements of functional quality of care (8, 106, 151).

With reference to earlier studies (17, 102) elements of functional quality of care fosters trust in a health system. Trust has been said to enhance the quality of communication between providers and consumers, make health care consumers a co-producer of health and foster the likelihood that consumers adhere to prescribed management. It has also been described as the element needed to turn health care consumers into agents of change for good health seeking behaviour in the community (71, 158, 159). As functional quality of care especially has been proven to be related to trust, so trust in turn has been linked to overall satisfaction with care (107), as a breach in any of the elements of functional quality of care predisposes the health system to low trust among consumers and a low level of satisfaction (103).

In instances such as this, when health care facilities consistently have heavy workloads and health care workers operate under pressure, health system responsiveness is likely to be slow, and long waiting times, causing a loss of productivity (23), are inevitable. This is much more so in developing countries with the persistent 'brain drain' of qualified health care workers to industrialized

economies, and the impact of this worsening an already weak health system with poor health outcomes of individuals and population health indices (19, 44, 87, 309). In addition, privacy and confidentiality are much more likely to be compromised especially in resource poor settings with inadequate infrastructure for visual and aural privacy. This contrasts with better-funded health systems in developed countries with better physical infrastructure that provide room for adequate space and enhance privacy. Heavy workload might jeopardize good communication between providers and clients because of insufficient time and work-pressure on providers (8). With this picture, health care consumers are more likely to be dissatisfied with care, with a consequent tendency to patronize lower quality alternative health care service providers (303), and a consequent worsening of health outcomes.

6.5.7. Limitations of the Study

The major assumption that led to this study was the idea that the observed unequal distribution of NHIS accredited health facilities in this study area was a result of poor technical and functional qualities of care. This was a bias partly due to the fact that the researcher was familiar with the challenges of the health system in the study area. We acknowledge selection bias since only those who received care in the selected health facilities for the study had the opportunity of being interviewed. The perceptions and positions of other enrolees who received care at some other health care facilities were therefore excluded. Also, there are definitely certain differences in the contextual factors between the study area and other areas in Nigeria and elsewhere. Also, the position of the researcher as an actor/stakeholder in the same health system, may have influenced the results, positively or negatively. these reasons, generalization of study findings to other parts of Nigeria and much more so, to other developing countries, should be made with an appropriate level of reservation.

CHAPTER SEVEN

7.0 Conclusion and Recommendations

7.1 Overall aim

This research work and the title was inspired by an earlier study (72) that showed the unequal distribution of accredited NHIS facilities and enrolees across the six states of the Southwest of Nigeria. Thus the main aim of the study, to assess the geographical distribution of NHIS accredited health care facilities and the determinants of choice of these facilities by health insurance enrolees in the study area, was conceived. The researcher's preconception was that the uneven distribution of health care facilities and the choice of enrolees across those facilities was highly likely to be influenced by poor health facility infrastructure, also referred to as the 'hardware' (62) of the health system. Findings from previous studies (39, 92) as well as a similar study (310) recently conducted among NHIS enrolees in the Ibadan metropolis on the pattern of bypassing of health facilities, have shown that the influence of the 'hardware' component of the health system is a major factor in the choice, distribution and patronage of health facilities by health care services consumers, and studies on the effect of the 'software' component of the health system (62, 153), such as trust and inter-stakeholder relationships, have mainly focused on the role of these elements in the working relationship of stakeholders, the efficiency and effectiveness and the overall performance of the health system in achieving its goals (71, 103, 116, 151, 158, 236). However, this study has demonstrated that, in addition to the influence of the 'hardware' component, the 'software' component of the health system, though often not accorded its place of influence in the workings of the health system, could be a major, mainly unrecognized and intangible factor in determining the geo-spatial distribution of health facilities, and health care consumers patronizing these facilities. To the best of our knowledge, there has not been any previous study that has systematically shown the effect of trust and other 'software' components of the Nigerian health system in determining the pattern and geo-spatial distribution of health care facilities. This is one of the major contributions of this study to health systems research.

7.2 Conclusion

The conceptual framework on accessing health care as designed by Peters and colleagues (5) highlighted the political factors that influenced the activities that led to the emergence of the NHIS in Nigeria, especially factors of access to care. The dimensions of access and the barriers – physical, financial - to delivery of services to beneficiaries even at the point of service have also been reported in a study by Largamasino and colleagues (24). This necessitated a reform in the health sector that emphasized the barrier posed by financial factors and the strategy to remove them, leading to the birth of the NHIS. Unfortunately, less attention was given to other forms of barrier to access to care. These other forms include, but are not limited to, quality of care (functional and technical) and the strength of relationships necessary for all stakeholders to co-produce needed health services.

Certain fundamental factors that were taken into consideration during the reform of the health systems of some of the countries in Latin America, such as Brazil, Argentina, Chile and Peru (76, 199, 311), and others in Africa such as Ghana (75) and Rwanda (312, 313), could also address demand- and supply-side factors of access to care under the NHIS of Nigeria. The distribution and location of health care facilities with reference to users' location (19, 136), availability of health human and material resources that influences access to available health care service (24, 39), as well as factors that determine acceptability of care with regard to users' satisfaction with care (90, 96) are pertinent. However, many of these pertinent issues were either not considered or were ignored completely at the steps that led to the emergence of the NHIS. Important factors among them are the quality of the relationship between the health system actors, beneficiary communities and CSOs, as well as the partnership with the lowest health care levels such as the PHC system (76).

In the same vein, the Donabedian Conceptual Framework on quality of health care designed in three phases of structure, process and outcome is able to explain only the availability of the health care services input of human and material resources needed for health care production (39, 90). It could also speak to the functional and technical qualities of health as depicted by satisfaction with the process of delivery and receiving of care (17, 102, 103, 106). However, it failed to recognise the importance of the relational aspect of stakeholders needed to co-produce health services. In a similar framework developed by the WHO (60), it shows the six (6) health systems building blocks (and the actors in each of these blocks) and how they inter-relate, with viable leadership and governance at

the centre to produce health. However, it fell short of demonstrating the importance and influence of other stakeholders outside of the health system as necessary factors in health service implementation.

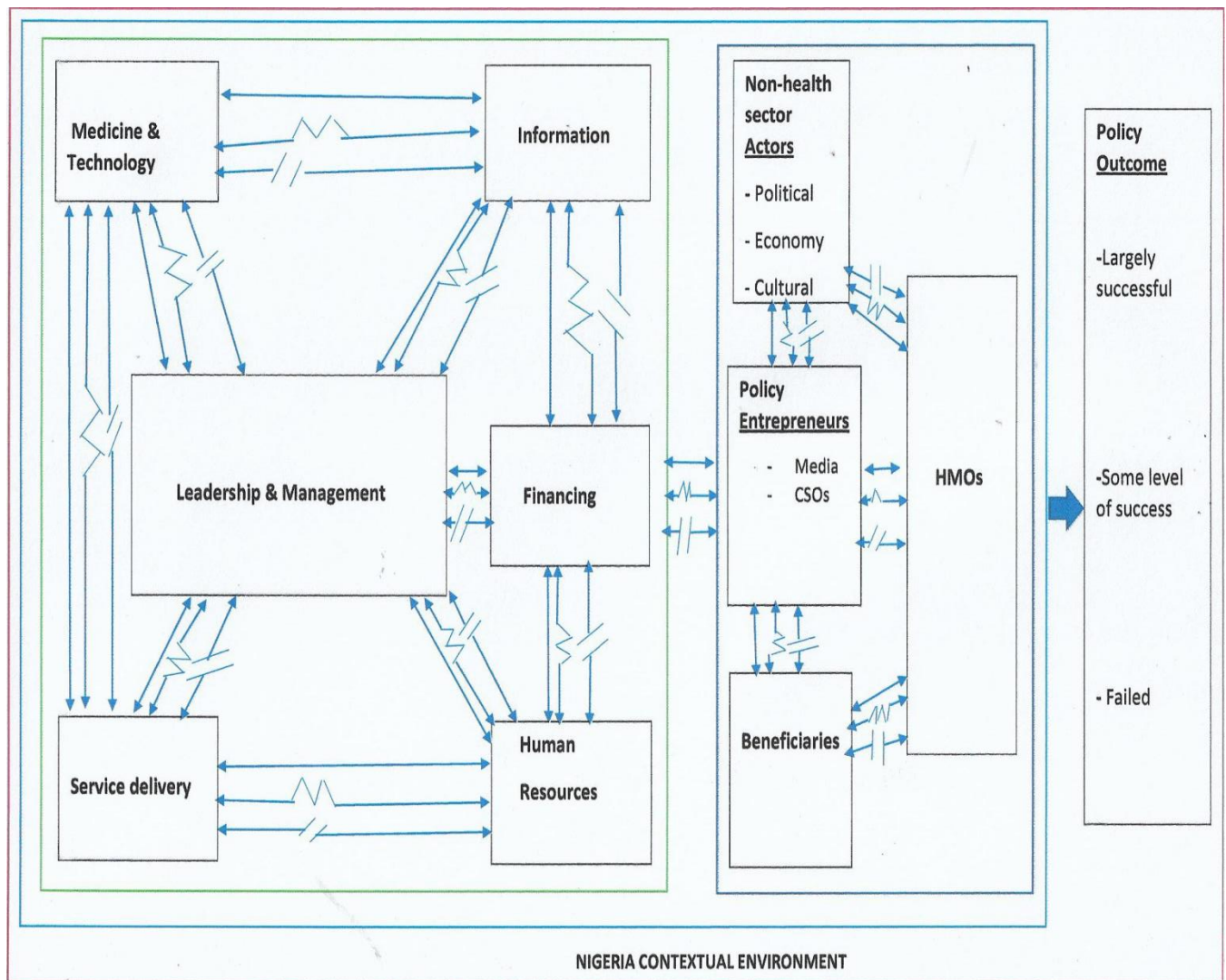
A conceptual framework designed by Gilson and colleagues (151) depicted the importance of micro-level, health facility-based intra-organizational trust in health care delivery in hospital settings and how low levels of trust could negatively affect delivery of effective health care services. In an earlier work by Gilson that examined trust and the development of health care as a social institution, the necessity of both the micro-level health system and the macro-level system that include other systems outside of health and that exist in the contextual environment, to co-produce health services was emphasised. It also highlights the importance of trust as a unifying factor necessary for both systems to relate and co-produce health (116). However, none of these two earlier works attempted to demonstrate the relationship of other health producing factors within and outside of the health system, particularly trust. Also, the frameworks, while they were able to foreground the role of trust in the working relationships of stakeholders in health organizations, they fell short of explaining the role of trust as a necessary factor in allowing important partners such as health care providers and potential beneficiaries of a health programme to partake in the implementation and delivery of health care services.

Efforts of the four frameworks described above in demonstrating the importance of the factors that were highlighted as important for health care production are highly commendable. However, these conceptual frameworks were mechanistic, assuming a perfect environment where all factors were always available for the implementation of an intervention. None of them emphasized the factor of political intrigue and power play that could be involved in stakeholders' relationships. Again, none of the frameworks realised that the presence of an actor, does not automatically translate to availability or willingness (of those actors) to participate. Although, the frameworks highlight in different combinations, the factors of health care service production, none was able to demonstrate all these factors in a single framework. The inability to bring together all the factors of health care production in a single framework and with an emphasis on trust as an important intangible binding factor required for health production is a gap that needs to be appropriately addressed.

The present study however has been able to fill this gap and highlight the vital role of trust as a factor necessary for the production and successful implementation and sustainability of public health interventions as is available in the NHIS of Nigeria. The study has also demonstrated and been able

to explain, how a low level, or the absence, of trust has affected the geo-spatial distribution of health care facilities and the subsequent skewed distribution of enrollees across these facilities. Building the trust of the people in the health system is one of the ways to address this (151, 235, 236). This will be useful as a vital decision-making guide in the planning for health care interventions in other settings that intends to embark on similar interventions. It will also be useful for correction purposes in the current NHIS as a tool to making amends in order to reposition the scheme.

To illustrate the inter-relationship between trust, as an intangible element, also referred to as the 'software' that is necessary for the optimal performance of the health system (62, 153), actors and health policy implementation, a model was developed as a hybrid of the WHO health system building blocks and other contextual factors outside of the health system. It demonstrates the relevance of the interaction of actors at the micro and the macro levels of the health system and other systems outside of the health system but in the same contextual environment. This illustration is also reiterated in a previous study by Meyers and Colleagues in 2008 (299) relating social theories to the functioning of health systems. It shows the interaction of different variables of the hybrid framework and how actors in the different domains of these variables are connected by trust in policy implementation and production of health services. Finally, it demonstrates the likely outcome of health intervention depending on the prevailing level of trust and factors that generate trust in the health system. The diagram depicts the contextual environment of Nigeria that includes the health and the non-health system compartments and the health outcome compartment. The contextual environment is a milieu of the complex interrelationship of actors that controls the economic, political, cultural and social entities, including the health system. The functionality of this complex interrelationship depends on the level of trust that exists between and among them (the actors). (Fig. 32).



. Fig. 32: WHO-modified health system building blocks, health system actors and trust relationship: A Theoretical Framework

In summary, trust, as the intangible ‘software’ in the health system, determines the degree of performance of all other variables, that is the ‘the hardware’ in the health system. The higher the level of trust, the better the health system is to perform.

Key to Fig. 32

- High level trust (Unbroken stem arrow) =
- Low level trust (Jagged stem arrow) =
- No trust/suspicion (Broken stem arrow) =

The compartment that indicates the health system consists of the WHO six building blocks, as shown in the diagram. The other compartment on the right side consists of the other systems including the political, economic and the social sectors. It also shows some of the actors that have direct and indirect relationship with the health sectors. Some of these actors are the beneficiaries of the NHIS (enrolees), policy entrepreneurs such as civil society and media organizations. The HMOs are also present as the business actors in the health system.

The arrows represent existing levels of trust between and among the actors in all the systems in the contextual environment, both the health and the non-health systems. The arrows are also in a two-way direction, indicating that trust between two contiguous blocks is bi-directional. The shapes of the arrows are in three different forms. The unbroken arrow depicts a high level of trust between actors in a health system block and the next contiguous block, and between them as individual blocks and the health system leadership in the middle. The arrow with a jagged stem depicts a low level of trust, while the one with a broken stem depicts that there is no existing trust and possibly, even suspicion. The same pattern exists between and among actors in each of the blocks of the political, socio-economic, the business sector (HMOs), the policy entrepreneurs and the beneficiaries (enrolees). The resultant level of trust that exists between the two compartments (health and the non-health systems) depends on the dominant arrow (trust). Trust is a proxy of the quality of the relationship that exists amongst actors in both the health and the non-health systems.

The degree of the quality of the interaction between the health and the non-health systems compartments determines just one of the three possible outcomes of the policy outcome compartment. When the dominant arrow between the two compartments (health and non-health) is high enough (unbroken arrow), the outcome of the health intervention implemented will be largely successful. When the trust is low (jagged stem), the health intervention will achieve some level of success. However, when the resultant level of trust is nil (broken stem), the health intervention implementation fails. As claimed in previous research (185, 186, 231), the outcome of policy intervention is a reflection of the quality of relationship that exists between and among actors and of the influence of the ‘street level bureaucrats’.

In general, this study shows that there is a low level of trust among actors in the health system. However, the cause of this low-level of trust differs across different categories of the actors or stakeholders in the NHIS of Nigeria. The identification and differentiation of the causes of mistrust among them is important in order to guide stakeholders to build trust and improve the level of quality of interaction among them in the efforts to reposition the scheme for better performance. It will also serve as a useful learning curve for similar schemes elsewhere.

The low level of trust of the enrolees in the health system and the NHIS in particular was a result of inadequate or non-availability of the structural and process components or phases of health service production, as typically shown by the Donabedian Conceptual Framework (98). Likewise in the dimensions of Access to Care framework by Peters et al. (5) and that of the WHO health system building blocks frameworks (60), the low level of trust that exists among the trio of the NHIS, HMOs and health care providers is more a matter of managerial or administrative and political power play. However, more specifically fund management and the absence of conflict resolution mechanisms play a vital role.

In essence, efforts to build enrolees trust in the NHIS and the health system should be directed at ensuring the production of quality health care including available functional medical equipment and machines, essential drugs and other consumables in health facilities, as well as ensuring the availability of qualified and responsive health personnel in the accredited health facilities. Building the trust of the trio of the NHIS, HMOs and the providers among themselves will also entail a re-design of the scheme's operational template/guideline with well defined, non-overlapping roles and responsibilities of each one of the stakeholders.

The study has shown the reason why no single individual stakeholder in the scheme should handle two or more roles that have the potential to result in conflict of interest for one of the stakeholders. An example is the payment for fee-for-services rendered and authorization of services that qualify as secondary care, the two that are currently handled by the HMOs.

It is pertinent to mention that the administrative and technical skills of NHIS officials need an improvement to enable the NHIS to play the leadership roles expected of it. This is necessary for the needed performance improvement of the scheme.

It is also important to note that the observed challenges and the corrective measures will require several factors to be addressed. Choosing a single approach to solve the problem runs the risk of different equity implications and is not likely to be successful (39). As revealed by increasing the supply of skilled health providers on pregnancy and birth outcomes through the midwives service scheme in Nigeria; a measure of success was achieved especially in the first year of the programme. However, it was reported that the effectiveness of the programme was compromised by multifaceted operational challenges, and thus, despite the presence of hired midwives, patronage of the health care facilities and facility deliveries dwindled over time. It was reported that the welfare of personnel including remuneration and accommodation were inadequate. However, what was reported to have a greater negative impact on the programme was the inadequate supply of drugs and medication, basic equipment and poor facility infrastructure such as water and electricity supply among others (26).

Anselmi and colleagues (39), in a study on health service availability and health seeking behaviour in resource poor settings conducted in Mozambique, proffered useful steps in addressing this challenge. Making health care services more accessible to a larger population by increasing the number of health facilities in a given area is one of the important steps to take. In addition to this, the study also suggested that the type of services provided in each locality could be expanded, with existing health facilities offering a wider range of health care services. Then lastly, the availability of input necessary to make health services effectively available in a given health facility, such as staff, equipment and drugs, should be increased. This is likely to minimise (or even reverse) the unequal distribution without having to compel enrollees to seek care in specifically prescribed health care facilities.

Except in a few countries, the implementation and expansion of social health insurance schemes for UHC health coverage in the majority of the developing countries especially in SSA, has not been encouraging (50). Organizations need the supportive capacities of stakeholders (both internal and external) to enable them to thrive. It is well documented that schemes in these environments characteristically do not have supportive internal and external capacities (50, 314).

The internal capacity dimension typically is the technical and the managerial skills of the personnel in the scheme who are responsible for its everyday operations. These skills include the capacity to purchase services, transparent facility accreditation to improve quality of care, verification of invoices

submitted by providers to ensure value for money of services rendered and robust payment systems which increases transparency and efficiency to reduce the chances of corruption. Other necessary internal capacities are supervision and monitoring providers to meet quality standards, ensure timely and accurate verification of quality and quantity of services by providers, as well as post facto verification (251, 314).

In addition to the internal capacities of the organization, the capacity of state and non-state actors/stakeholders external to the organization also play tremendous roles in its development. The necessary factors will include the active support rendered to the scheme by these actors, which includes institutional laws and regulations that ensure ease of doing business. It also entails the ability of government with a strong leadership to recognize windows of opportunity (184) needed to change the status quo when necessary. It is also instructive that the organization must have the capacity to adapt to change and learn from experience (314). However, inadequate capacity to design, implement and manage a sustainable scheme in many countries of the SSA, Asia and some countries of the former communist Soviet Union, is a challenge. In addition to this, a level of corruption and informal payment has been reported. In many of these countries, either the government was too weak or lacked the capacity to effect desired change in the system (50).

In conclusion, this study recommends that the recently approved State Supported Social Health Insurance Scheme (SSHIS) as a form of decentralization of the NHIS, should be encouraged as another platform to achieving a UHC for the people, driven by the sub-national entities such as the state governments. In this, the LGAs must be actively involved in service delivery through the PHC centres while the beneficiaries' roles in the design and implementation of the scheme should not be handled with levity. As time goes on and the capacity of the LGA personnel is developed progressively, more roles should be ceded to it to enhance closeness of the intervention to the grassroots as was done in other successful decentralised schemes such as in Ghana, Rwanda and Brazil. In addition, pockets of community-based health insurance schemes (CBHISs) could be organized in different LGAs, the CBHIs could be linked-up to the state platform as a form of re-insurance strategy for a wider fund pooling across these pockets of schemes. The pockets of CBHIs could be more applicable for informal population groups whose data are usually non-existent and difficult to generate, unlike in developed countries. The legal clause that has made membership of health insurance schemes in Nigeria voluntary should be addressed and changed to make it mandatory as it is available in many other successful schemes.

7.3 Recommendations

Specifically, the following recommendations are made to stakeholders in the scheme:

1. At the national level, the present budgetary allocation to the health system is poor. This should be improved as one of the efforts to strengthen the Nigerian Health system. The funding must be made to have positive impacts on all the building blocks of the health system as appropriate.
2. The NHIS should be repositioned to enable it to play its expected lead role. This should include technical and administrative skills acquisition by the NHIS officials. It is expected that this will empower the scheme to carry out statutory monitoring and supervisory oversight function on other stakeholders especially the HMOs and the service providers. It is also important that the trio of the NHIS, HMOs and the service providers must devise an effective and responsive conflict resolution mechanism to ensure an atmosphere conducive for the stakeholders in the industry to work together and enable the scheme to achieve its aims and objectives. Representatives of the enrollees should also be involved.

Using the WHO Ten Steps to Systems Thinking (61), as a guide, a two-phased action plan is advised. These are the intervention re-design and the evaluation re-design phases. Specifically, the intervention re-design phase must convene all stakeholders as listed in the paragraph above for active participation, and brainstorm the possible system-wide effects of the scheme. Stakeholders must conceptualise how the scheme will affect health and the health system. The scheme must also be re-designed to optimize synergies and minimize likely negative effects.

The second phase of the re-design efforts must determine indicators that are important to track in the re-design of the scheme. Methods to best track the indicators must be carefully selected. Also evaluation design that best fits the scheme must be chosen. This must be accompanied by a time-bound plan for the evaluation. It is of the utmost importance that sufficient budgetary allocation is made to the scheme and its evaluation. Sustainable funding sources must be secured for the scheme and its evaluation.

3. As part of the re-design strategies, the HMOs must not be allowed to be responsible for payment of services rendered by health care providers and at the same time be the body to authorise secondary care treatment and permit health care providers to deliver the needed services. In line with this, the two

functions (payment and authorization of treatment) must be assigned to two different autonomous bodies. Furthermore, the payments, which are payment of capitation and fees for service must be carried out when due. In addition to this, mechanisms to discourage corrupt practices especially the alliance between the HMOs and politicians must be developed. This could involve legislation and the involvement of anti-corruption agencies in the country. Compulsory declarations by any politician with a stake in the HMOs, either as a co-owner or as a board member of any HMO, must be made for transparency purposes.

4. Health care providers under the scheme must be monitored to ensure delivery of safe and efficient quality services, with specific focus on both the technical and functional components of quality of care. To ensure this, periodic clinical auditing of services rendered should be conducted especially to enable an assessment of the technical quality of care. The service recipients (enrolees) could be interviewed to enable an assessment of the functional component of the quality of care. Appropriate training should be conducted where there are gaps.
5. It is also important that drugs and service tariffs be reviewed to accommodate the current cost of health care. Health care facility infrastructure and consumables must be critically addressed to enable a more responsive health system and earn the trust of health care consumers.
6. Presently service provision under the scheme is carried out by accredited secondary and tertiary health facilities, leaving out the primary health care facilities that are usually patronized by the majority of people. The NHIS is encouraged to upgrade these facilities and make them adequate to provide services under the scheme, as is the practice in other countries where similar reforms as the NHIS exists.
7. The federal (national level of governance) should pay close attention to facility infrastructure for tertiary level facilities while state governments should do likewise for secondary health care facilities. The LGA level of governance should play supervisory roles on the PHC facilities and similar others at that level. However, the LGA officials need more skills to enable the discharge of this role. This calls for appropriate skills acquisition training for the responsible officials at that level of governance.
8. Private health care facilities operating at the three levels of tertiary, secondary and primary care, should be monitored by the corresponding level of governance for infrastructural adequacy.

It is expected that the trust that is much needed for these stakeholders to work together and ensure the sustainability of the scheme will be earned over time. This could grow in as much as each of the stakeholders in the group fulfils its expected role.

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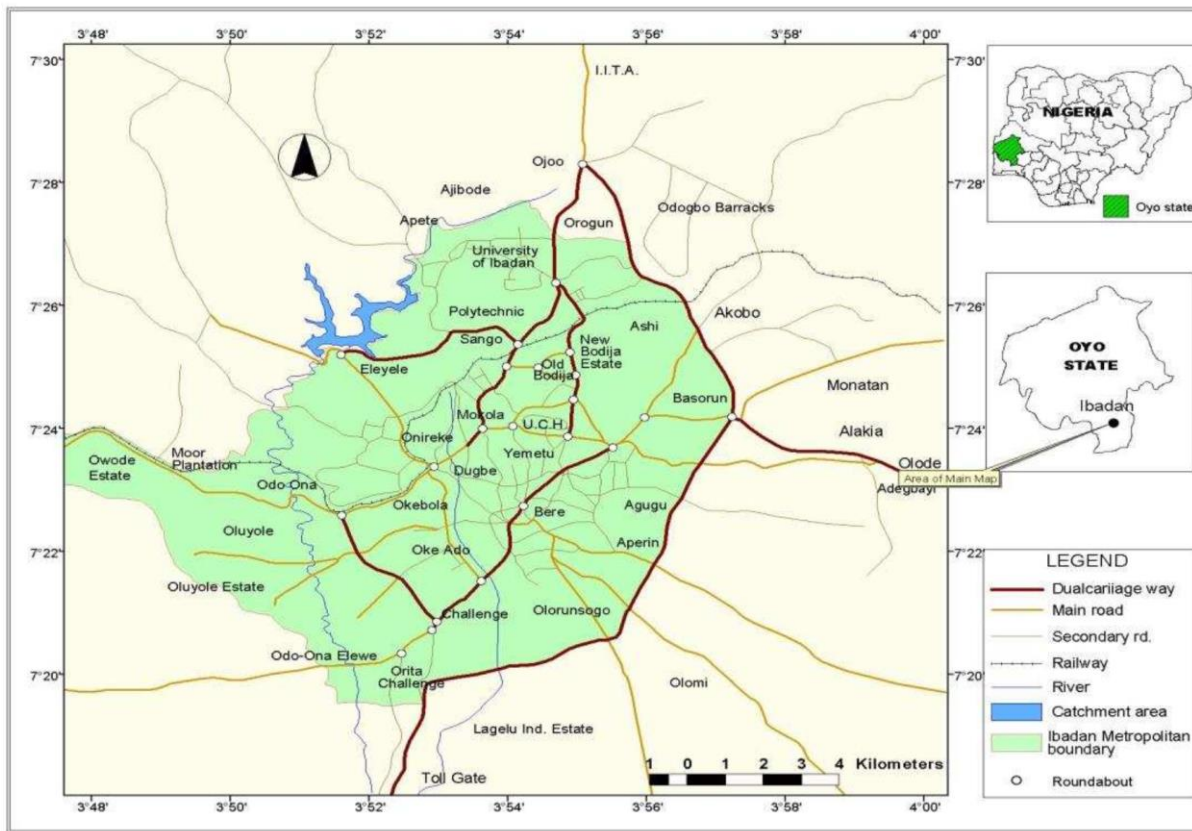
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9. Appendices



Appendix I: A typical bus stop in the city of Ibadan, Nigeria



Appendix II: Network of transit system in the City of Ibadan

Appendix III: Paired t- Test output for comparison of distances between enrollee’s household to the nearest facilities and the utilized facilities

Your temporary usage period for IBM SPSS Statistics will expire in 5234 days.

```
T-TEST PAIRS=VAR00001 WITH VAR00002 (PAIRED)
  /CRITERIA=CI(.9500)
  /MISSING=ANALYSIS.
```

T-Test

Notes

Output Created		01-SEP-2021 14:30:38
Comments		
Input	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	430
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
Syntax		T-TEST PAIRS=VAR00001 WITH VAR00002 (PAIRED) /CRITERIA=CI(.9500) /MISSING=ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

[DataSet0]

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Nearest Facility	1113.5519	430	1420.51831	68.50348
	Facility Utilized	6450.9932	430	4379.62031	211.20405

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Nearest Facility & Facility Utilized	430	.327	.000

Paired Samples Test

		Paired Differences			95% Confidence ...
		Mean	Std. Deviation	Std. Error Mean	Lower
Pair 1	Nearest Facility - Facility Utilized	-5337.44130	4138.72846	199.58721	-5729.73178

Paired Samples Test

		Paired ...	t	df	Sig. (2-tailed)
		95% Confidence Interval of the ...			
		Upper			
Pair 1	Nearest Facility - Facility Utilized	-4945.15082	-26.742	429	.000

Appendix IV Age and sex distribution of Nigeria population (116)

Age groups (in years)	Both Sexes	Sex	
			Females
0 – 4	22,594,967	11,569,218	11,025,749
5 – 9	20,005,380	10,388,611	9,616,769
10 – 14	16,135,950	8,504,319	7,631,631
15 – 19	14,899,419	7,536,532	7,362,887
20 – 24	13,435,079	6,237,549	7,197,530
25 – 29	12,211,426	5,534,458	6,676,968
30 – 34	9,467,538	4,505,186	4,962,352
35 – 39	7,331,755	3,661,133	3,670,622
40 – 44	6,456,470	3,395,489	3,060,981
45 – 49	4,591,293	2,561,526	2,029,767
50 – 54	4,249,219	2,363,937	1,885,282
55 – 59	2,066,247	1,189,770	876,477
60 – 64	2,450,286	1,363,219	1,087,067
65 – 69	1,151,048	628,436	522,612
70 – 74	1,330,597	765,988	564,609
75 – 79	579,838	327,416	252,422
80 – 84	760,053	408,680	351,373
85+	715,225	404,021	311,204
Total	140,431,790	71,345,488	69,086,302

Appendix V: Health Facilities per 100,000 population, per state and Zone in Nigeria in 2011
(105)

Zone and State	Population	No. of health Facilities	Facilities per 100,000 population
North Central			
1. Benue	4,979,230	1206	24
2. FCT	2,291,413	656	27
3. Kogi	3,879,355	1077	28
4. Kwara	2,768,837	740	27
5. Nasarawa	2,188,257	909	42
6. Niger	4,727,625	1335	28
7. Plateau	3,694,849	883	24
Total	24,529,566	6,806	28
North East			
8. Adamawa	3,701,733	1027	28
9. Bauchi	5,562,382	1034	19
10. Borno	4,986,233	474	10
11. Gombe	2,797,692	531	19
12. Taraba	2,672,183	1045	39
13. Yobe	2,789,589	697	19
Total	23,598,922	4,808	20
Northwest			
14. Jigawa	5,078,175	614	12
15. Kaduna	7,156,349	1560	22
16. Kano	11,179,667	1183	11
17. Katsina	6,791,223	1496	22
18. Kebbi	3,832,110	412	11
19. Sokoto	4,334,281	713	16
20. Zamfara	3,878,699	697	18
Total	42,250,504	5,492	13
Southeast			
21. Abia	3,278,699	615	19

22. Anambra	4,839,404	1485	31
23. Ebonyi	2,521,675	567	22
24. Enugu	3,825,267	868	23
25. Imo	4,646,058	1337	30
Total	19,111,103	4,872	26
Southwest			
26. Ekiti	2,822,955	459	16
27. Lagos	10,780,817	2253	21
28. Ogun	4,460,718	1520	34
29. Ondo	4,051,236	811	20
30. Osun	4,042,046	1095	27
31. Oyo	6,671,528	1237	31
Total	32,829, 300	7,375	23
South-south			
32. Akwalbom	4,664,601	543	12
33. Bayelsa	1,984,825	232	12
34. Cross-River	3,368,744	734	22
35. Delta	4,864,762	908	19
36. Edo	3,725,771	924	25
37. Rivers	6,214,664	476	8
Total	24,823,367	3,817	15
Grand total	166,053,652	34,173	21

Appendix VI: National Summary showing Health Facilities and Ownership (105)

Zone/State		Primary		Secondary		Tertiary		Total
		Public	Private	Public	Private	Public	Private	
North Central								
1.	Benue	771	340	17	77	1	0	1206
2.	FCT	179	380	14	76	2	5	656
3.	Kogi	823	45	55	153	1	0	1077
4.	Kwara	512	63	26	138	1	0	740
5.	Nasarawa	609	265	18	15	2	0	909
6.	Niger	1095	227	12	0	1	0	1335
7.	Plateau	729	104	26	23	1	0	883
Total		3,989	1320	142	459	8	5	6806
North East								
8.	Adamawa	939	59	18	10	1	0	1027
9.	Bauchi	960	50	22	0	2	0	1034
10.	Borno	409	12	42	10	1	0	474
11.	Gombe	447	61	18	4	1	0	531
12.	Taraba	895	153	13	1	1	0	1045
13.	Yobe	486	0	12	18	1	0	517
Total		4,136	335	125	43	7	0	4628
Northwest								
14.	Jigawa	595	3	11	3	2	0	614
15.	Kaduna	1007	516	33	6	2	0	1560
16.	Kano	1037	105	33	6	2	0	1183
17.	Katsina	1418	45	21	11	1	0	1496
18.	Kebbi	375	5	15	16	1	0	412
19.	Sokoto	668	0	22	21	2	0	713
20.	Zamfara	664	13	18	1	1	0	697
Total		5764	687	153	64	11	0	6675
Southeast								
21.	Abia	481	37	4	92	1	0	615
22.	Anambra	392	968	31	92	2	0	1485

23.	Ebonyi	38	133	14	34	3	0	567
24.	Enugu	438	86	48	294	2	0	868
25.	Imo	416	389	19	511	2	0	1337
Total		1765	1613	116	1023	10	0	4872
Southwest								
26.	Ekiti	294	101	18	44	2	0	459
27.	Lagos	257	1529	29	431	5	2	2253
28.	Ogun	474	899	28	116	3	0	1520
29.	Ondo	460	309	19	21	2	0	811
30.	Osun	678	353	54	6	4	0	1095
31.	Oyo	677	86	32	438	2	2	1237
Total		2840	3277	180	1056	18	4	7375
Southsouth								
32.	Akwalbom	354	1	41	146	1	0	543
33.	Bayelsa	172	0	37	22	1	0	232
34.	Cross-River	575	18	22	117	2	0	734
35.	Delta	437	367	60	42	2	0	908
36.	Edo	322	549	34	13	5	1	924
37.	Rivers	380	37	33	21	5	0	476
Total		2240	972	227	361	16	1	3817
Grand Total								
		20734	8204	943	3006	70	10	34,173

Appendix VII: Regional distribution of health workers and density per 1,000 population (106)

Health worker category	Total number	Density/1,000 Population *(2006 census)	North central %	North east %	North west %	South east %	South West %	South south %
Doctors	52,408	0.4	9.73	4.06	8.35	19.59	43.9	14.37
Nurses	128,918	0.9	16.4	11.65	13.52	15.29	15.35	27.75
Radiographers	840	0.006	14.3	3.66	5.97	15.0	43	18.3
Pharmacists	13,199	0.09	19.94	3.8	7.79	11.74	44	12.39
Physiotherapists	1,473	0.01	10.8	2.73	8.32	8.58	62	7.39
MLS	12,703	0.09	6.82	1.72	3.6	35.26	29	23.89
EPH work	4,280	0.03	9.39	11.27	18.94	12.36	32.08	15.69
HROs	1,887	0.008	13.34	4.85	11.6	14.64	26	29.9
Dental Technologists	505	0.003	14.08	5.92	5.92	12.96	44.5	16.62
Dental Therapists	1,102	0.007	13.19	10.29	21.88	10.19	31.5	12.99
Pharmacy Tech	5,483	0.04	6.17	9.12	18	8.58	46	11.8

***2006 Population Census figure for Nigeria 140,431,790**

MLS - Medical Laboratory Scientists

EPH - Environmental and Public Health

HROs - Health Records Officers

Appendix: VIII: Global distribution of Community health worker, Nurse and Midwife density per 1,000 population (17)

Region	Country	
	Highest value	Lowest value
1. Sub-Saharan Africa		
	Swaziland	Guinea
	10.6	0.1
2. Middle East & North Africa		
	Jordan	Djibouti
	3.4	0.4
3. South Asia		
	Maldives	Pakistan
	7.2	0.6
4. East Asia & Pacific		
	Timo-Leste	Papua New Guinea
	4.2	1.1
5. Latin American & Caribbean		
	Grenada	Guyana
	5.1	0.9
6. Europe & Central Asia		
	No data available	

Appendix IX: Urban – Rural distribution of Oyo State LGAs (113)

Number	LGA	Rural/ Urban classific ation	Head- quarters	Population @ 2.7% annual GR	Number of Health Facilities			
					Primary	Secondary	Tertiary	Total
1	Afijio	Rural	Jobele	134,173	22	2	-	24
2	Akinyele	Urban	Moniya	211,359	29	2	-	31
3	Atiba	Rural	Ofa-Meta	169,702	21	-	-	21
4	Atisbo	Rural	Tede	110,792	23	2	-	25
5	Egbeda	Urban	Egbeda	319,388	26	1		27
6	Ibadan North	Urban	Agodi- Gate	856,988	19	-	2	21
7	Ibadan North East	Urban	Iwo-Road	330,399	25	2	-	27
8	Ibadan North West	Urban	Onireke	152,834	14	2	-	16
9	Ibadan South East	Urban	Mapo	266,457	14	-	-	14
10	Ibadan South West	Urban	Ring-Road	283,098	24	7	-	31
11	Ibarapa Central	Rural	Igbo-Ora	116,809	15	1	-	16
12	Ibarapa East	Semi urban	Eruwa	118,288	20	3	-	23
13	Ibarapa North	Rural	Ayete	101,092	16	1	-	17
14	Ido	Semi urban	Ido	117,129	24	-	-	24
15	Irepo	Semi urban	Kisi	139,012	24	1	-	25
16	Iseyin	Urban	Iseyin	260,000	25	3	-	28

17	Itesiwaju	Semi urban	Otu	145,920	20	1	-	21
18	Iwajowa	Semi urban	Iwere-Ile	287,221	22	2	-	24
19	Kajola	Rural	Okeho	139,412	16	1	-	17
20	Lagelu	Urban	Iyana-Ofa	147,957	24	2	-	26
21	Ogbomoso North	Urban	Arowomole	113,853	17	-	1	18
22	Ogbomoso South	Urban	Ajaawa	73,939	15	2	-	17
23	Ogo Oluwa	Rural	Kinnira	225,561	26	-	-	26
24	Olorunsogo	Rural	Igbeti	92,739	18	1	-	19
25	Oluyole	Urban	Idi-Ayunre	734,377	28	1	-	29
26	Ona Ara	Rural	Igboho	118,465	23	-	-	23
27	Oorelope	Rural	Akanran	300,659	13	1	-	14
28	Oriire	Rural	Ikoyi-Ile	170,858	35	1	-	36
29	Oyo East	Urban	Kosobo	118,465	20	2	-	22
30	Oyo West	Urban	Ojongbodu	154,532	16	-	-	16
31	Saki East	Urban	Ago-Amodu	125,026	15	2	-	17
32	Saki West	Urban	Saki	278,002	32	2	-	34
33	Surulere	Rural	Iresa-Adu	126,692	31	1	-	32
Gross Total					712	46	3	761

Appendix X: Pattern of distribution of enrolees across South West Zonal states and NHIS accredited health facilities (110)

S/ No	State (A)	Principal (B)	Dependents (C)	Total NHIS accredited health facility in the State (D)	Total Enrolees (B + C)	Average no of Enrolees per Principal (C/B)	Average enrolees per facility (C/D)
1.	Ekiti	13592	22,555	27	36,147	1.7	1339
2.	Lagos	93643	155,312	578	248,955	1.7	269
3.	Ogun	21978	40,317	44	62,295	1.8	916
4.	Ondo	18193	32,926	63	51,119	1.8	522
5.	Osun	22440	38,244	49	60,684	1.7	780
6.	Oyo	40926	79,888	165	120,814	1.9	484
Regional estimate		210,772	369,242	926	580,014 1.7% of 2016 estimated Southwest Region population	1.8	718

Appendix XI: Observational Checklist for Provider-Client interaction

S/N	Provider Assessment Area	Yes	No	Satisfactory	Unsatisfactory
1.	Greeted patient and introduced himself/herself				
2.	Health worker invite patient to sit				
3.	Looked at patient directly from time to time				
4.	Encouraged patient to ask questions				
5.	Listened to patient attentively				
6.	Asked about patient's concerns				
7.	Used words that are easy to understand				
8.	Asked/checked whether patient is under treatment for a particular ailment and taking drug regularly				
9.	Checked patient treatment card				
10.	Explained procedures				
11.	Clinically examined patient				
12.	Washed hands immediately after physical examination of patient				
13.	Prescribed laboratory tests				
14.	Explained diagnosis				
15.	Explained treatment regimen				
16.	Reiterated the importance of treatment adherence				
17.	Explained possible treatment side effects				
18.	Health worker discussed next clinic appointment				

Appendix XII: Health facility assessment tool

Introduction

Greeting. My name is _____ I am here on behalf of the Principal Investigator in this research work. The goal of this study is to assess the quality of health service delivery in selected NHIS facilities like this. Your participation in this survey will be highly appreciated. Your participation is entirely voluntary and your decision whether or not to participate will involve no penalty or loss of benefits.

Remember:

This is not an examination, there are no right and wrong answers

Please answer all the questions as honestly and accurately as you can — this is very important and will help improve the delivery of care in this facility.

If you have further questions or concerns, please contact the undersigned

Dr. David Adewole (Lead Investigator), Room 4.34 Entrance 5, Falmouth building Division of Public Health Medicine School of Public Health and Family Medicine Faculty of Health Sciences Observatory 7925 University of Cape Town, Cape Town, South Africa. Email: adwdav001.ac.za; Phone number: +27643865918 & +2348034052838

NOTE TO INTERVIEWER: This tool must be completed by the facility head or designee

DEMOGRAPHIC INFORMATION OF PERSONNEL INTERVIEWED

Participant's title/designation

Primary Responsibilities

.....
.....
.....

Respondent's phone number

How long have you worked at this facility?

What is the designation of the person responsible for managing malaria commodities at this facility?

Medical Doctor

Nurse

Pharmacy Technician

Pharmacy Assistant

Pharmacist

Store Officer

Medical Attendant

Assistant Medical Officer

Laboratory Scientist

Laboratory Technician

Laboratory Assistant

Other

Section 1: Identification Particulars	
Q0.3	L.G.A:
Q0.4	Ward:

Section 2: Geographical information system						
1. Identification						
Item						
Facility Name:						
Facility type (tick where appropriate)	Tertiary	Secondary	Primaryy	Public	Private/ FBO	Other
Address of facility						
2. Position						
Elevation/Altitude/Height (Meter)						
	Degrees		Decimal Degrees			
Latitude N						
Longitude E						
Level of accuracy (meters)						

Section No.	Questions	Yes	No	Skip to
Q3.1	When was the facility built?	Year:..... Don't know.....		
Q3.2	Who owns the health facility? (Tick only one)	Government.....	<input type="checkbox"/>	
		Rented.....	<input type="checkbox"/>	
		Private.....	<input type="checkbox"/>	
		Community.....	<input type="checkbox"/>	
		Religious organization.....	<input type="checkbox"/>	
Q3.3	What is the source of water available at the health centre? Tick all that apply	Bore hole.....	<input type="checkbox"/>	
		Uncovered well.....	<input type="checkbox"/>	
		Covered well.....	<input type="checkbox"/>	
		Stream.....	<input type="checkbox"/>	
		Water tanker.....	<input type="checkbox"/>	
		Harvested rain water.....	<input type="checkbox"/>	
		Piped water.....	<input type="checkbox"/>	
		None.....	<input type="checkbox"/>	
		Others (specify)_____		
Q3.4	Is there electricity power supply at the facility?	No	Yes	If no, go to Q3.6
Q3.5	Indicate source(s) of power supply Tick all that apply	National grid.....	<input type="checkbox"/>	
		Solar power.....	<input type="checkbox"/>	
		Generator.....	<input type="checkbox"/>	
		Combination with Inverter.....	<input type="checkbox"/>	
		Others (specify)_____		
Q3.6	Toilet facilities available (Tick all that apply)	None	<input type="checkbox"/>	
		Flush latrine (WC).....	<input type="checkbox"/>	
		Ventilated improved pit latrine.....	<input type="checkbox"/>	
		Open pit latrine.....	<input type="checkbox"/>	
		Hanging toilet.....	<input type="checkbox"/>	
		Open Defecation.....	<input type="checkbox"/>	
		Others (specify) _____		
Q3.7	Is the health facility fenced?	No	Yes	
Q3.8	How many security personnel are there in the health facility? (write number)			
Q3.9	Is there any major road leading to the facility?			If no, go to
Q3.10	If yes, what type? (Tick all that apply)	Tarred road.....	<input type="checkbox"/>	
		Foot path.....	<input type="checkbox"/>	
		Untarred road.....	<input type="checkbox"/>	
		Others (specify)_____		

Q3.11	Is there any structural problem in the building? Roof Ceiling Wall Floors Painting Plumbing Drainage	No	Yes	Specify

Section 4: Human Resources for Health and TB service Provision

Now we would like to ask questions related to staffing in the this health facility

Q4.1	In total, how many health workers are there in this facility? (Please write the total number)		
Q4.2	Can you tell us the number of staff by cadre?	Cadre	Number
		Physicians	
		Surgeons	
		Internal physicians	
		Obstetrics & Gyneacologists	
		Pediatricians	
		Public health physicians	
		Pathologists	
		Radiologists (RadioDx, RadioRx)	
		Pharmacists	
		Nurse/Midwives (All Categories)	
		Public Health Nurse	
		Midwives	
		Nurses	
		Radiographers	
		Health attendants	
		Laboratory	
		Heamatology Chemical pathology Microbiology Histopathology	
		Environmental Health Officers	
		Pharmacy Technicians	
		Medical Records Officers	
		Nutrition Officers/Dieticians	
		Laboratory Technicians	
Support staff			
Drivers			
Caterers			
Security personnel			

		Maintenance (Instrument & Equipment)		
		Administrative personnel		
		Others (please specify)		
	Now we would like to ask questions related to staff training and development in your facility			
Q4.3	In total, how many health workers in this facility attended any job-related training in the last 3 years? (Please write the total number).			
Q4.2	Can you tell us the number of staff by cadre?	Cadre	Number	
		Physicians		
		Surgeons		
		Internal physicians		
		Obstetrics & Gyneacologists		
		Pediatricians		
		Public health physicians		
		Pathologists		
		Radiologists (RadioDx, RadioRx)		
		Pharmacists		
		Nurse/Midwives (All Categories)		
		Public Health Nurse		
		Midwives		
		Nurses		
		Radiographers		
		Health attendants		
		Laboratory		
		Heamatology Chemical pathology Microbiology Histopathology		
		Environmental Health Officers		
		Pharmacy Technicians		
		Medical Records Officers		
		Nutrition Officers/Dieticians		
		Laboratory Technicians		
	Support staff			
	Drivers			
	Caterers			
	Security personnel			
	Maintenance (Instrument & Equipment)			

		Administrative personnel		
		Others (please specify)		
Section 5: Managerial Capacity				
Team building				
Q5.1	How often do departmental/facility staff hold management meetings? (check one only)	Never..... <input type="checkbox"/>	Weekly..... <input type="checkbox"/>	Monthly..... <input type="checkbox"/>
		Quarterly..... <input type="checkbox"/>	Annually..... <input type="checkbox"/>	Others..... <input type="checkbox"/>
Q5.2	If the Officer in Charge is away from duty who takes responsibility for running the department/facility? (designation)			
Supervision				
No.	Questions	No	Yes and sighted	Yes but not sighted
Q5.3	Have you received any supervisory visit by the hospital management? (Check visitors' book, if necessary, and site copies of the supervisory checklists/feedback reports).			
Q5.4	If yes, how often does the supervisory visit takes place? Specify		Monthly..... <input type="checkbox"/>	Quarterly..... <input type="checkbox"/>
			Annually..... <input type="checkbox"/>	Never..... <input type="checkbox"/>
			Not specific <input type="checkbox"/>	Others <input type="checkbox"/>
Q5.5	When was the most recent supervisory visit? Indicate the date			
Q5.6	How many supervisory visits have been conducted in the last 3 months? (Please write the total number)			
Q5.7	Who do they supervise/? (List the designations/units below) Write in the space below: units supervised			
Q5.8	Is there a checklist for supervision?	No	Yes	Don't know
Q5.9	Do they provide feed back to the person(s) /units supervised?			
Q5.10	Have you received any training on supportive supervision in the last one year?			
Section 6: Planning and budgeting				
No.	Questions	No	Yes	
Q6.1	Does this facility have a workplan?			

Q6.2	Who developed it? (specify)	In collaboration with Health workers..... <input type="checkbox"/> In collaboration with Community..... <input type="checkbox"/> In collaboration with LGA..... <input type="checkbox"/> In collaboration with hospital Head..... <input type="checkbox"/> In collaboration with others (Specify) _____		
Q6.2	Does this facility have a budget?	No	Yes	
Q6.3	Who developed it? (specify)	In collaboration with Health workers..... <input type="checkbox"/> In collaboration with Community..... <input type="checkbox"/> In collaboration with LGA..... <input type="checkbox"/> In collaboration with hospital Head <input type="checkbox"/> In collaboration with others (Specify) _____		
		No	Yes	
Q6.4	Have you received training on micro-planning?			If no, go to Q7.1
Q6.5	If yes, when?	dd/ mm/yyyy		
Q6.6	Does this facility have a catchment area?			If no, go to Q7.1
Q6.7	If yes, estimate the target population.			
Section 7: Resource mobilisation				
No.	Questions	No	Yes	Skip to
Q7.1	Does the health facility mobilise resources outside statutory allocation?			If no, go to Q8.1
Q7.2	If yes, state other sources of support/resources (Write in the space below)			
Section 8: Service Delivery (Anchored primarily on service provision using minimum health care package)				
No.	Questions	No	Yes	
Q8.1	Is/are there laboratories in this health facility where tests are performed to meet patients need?			
Q8.2	If no laboratory is available at this facility, how are patients diagnosed for different ailments? (Tick all that applies)	Patients are sent to laboratories in other hospitals Patients' samples are sent to laboratories in other hospitals Others (Specify)		
		No	Yes	Skip to
Q8.3	Does this facility have a Standard Operating Procedures/guidelines (a document) on the management of common health conditions?			If no, go to Q8.5

Q8.4	Do all health workers in this facility make use of these SOPs/guidelines? (Ask for a copy)				
Q8.5	Does this facility provide the following services?				
		No	Yes	If so, how frequently are these services	
				Rarely	Sometimes
	Communication on common health conditions				
	IEC campaign on common health conditions				
	Community outreach on common health conditions				
Q8.6	Does the health facility provide outreach services			Yes	No
	Follow Up				If no, go to Q8.8
	Home Visit				
	Phone Calls				
Q8.7	If yes, indicate how often	Rarely	Sometimes	Regular	
	Follow Up				
	Home Visit				
	Phone Calls				
Q8.8	Have some health workers in the ANC/family medicine clinic received training on provision of ANC/malaria services?		No	Yes	
				If no, go to Q9.1	

Q8.9	If yes, indicate training received and date.	Type of training	No. trained	In the past 3 months	In the past 6 months	In the past 1 year	>1-3 years	>3-5 years	

Section 9: Strengthen of NHMIS for programme monitoring and management in the Health Facility

No.	Questions	No	Yes	Skip to			
Q9.1	Do you use NHMIS forms in this facility?			If no, go to Q9.3			
Q9.2	If yes which of the following forms are available and adequate in your health facility/ward?						
		Available			Adequate (probe for ease of use)		
		No	Yes	N/A	No	Yes	N/A
		General outpatient clinic register					
		ANC register					
		No		Yes	Skip to		

Q9.3	Is/are there designated Health /Medical Records Officer?			If no, go to Q9.9	
Q9.4	Is/are these staff qualified Health/Medical Records Officer?				
Q9.5	Have these staff been trained in NHMIS in recent times?				
Q9.6	If yes when?	____/____/____ dd/ mm/yyyy			
Q9.7	Is this designated staff involved in routine M & E activities?	No	Yes	If yes, go to Q9.10	
Q9.8	If No, give reasons (Write in the space below) (a) (b) (c)				
Q9.9	Are the data generated from routine M & E activities available at the facility?	No	Yes		
Q9.10	Are the data analyzed and reviewed at the facility?				
Q9.11	Are data submitted to the LGA/State?			If no, go to Q9.15	
Q9.12	If yes, how often? Tick one that applies	Weekly..... <input type="checkbox"/>	Bi-weekly..... <input type="checkbox"/>		
		Monthly..... <input type="checkbox"/>	Quarterly..... <input type="checkbox"/>		
Q9.13	Has there been any feed back from the LGA/ State from the data submitted?	Never	Rarely	Sometimes	
Q9.14	How was the feedback information from the LGA used? (Write in the space provided below)				
Q9.15	Rate (by circling) the extent to which the following activities are provided in your facility	Activity	Not at all	Partially provided	Fully Provided
		Routine data collection	0	1	2
		Data storage	0	1	2
		Data Entry	0	1	2
		Data Cleaning	0	1	2
		Data analysis	0	1	2
	Dissemination and information sharing	0	1	2	
Q9.16	Is there a dedicated office for Medical Records in this health facility?	No	Yes		
Q9.17	How many employees work in this Records Unit/Department?	Female: _____ Male: _____			

		Total: _____		
Q9.18	Which of the following equipment do you have dedicated to data processing, information and communication?			
	EQUIPMENT	AVAILABLE AND FUNCTIONAL (Indicate Number)	AVAILABLE NOT FUNCTIONAL (Indicate Number)	NOT AVAILABLE (Mark X)
	Calculator			
	Mobile Phone			
	Laptop			
	Pencil			
	Eraser			
	Ruler			
	Cardboard			
	Marker (coloured)			
	Desktop computer with necessary accessories			
	Others (specify)			
Q9.19	In what mode is data displayed at the facility? Tick all that apply	Reports..... <input type="checkbox"/> Tables..... <input type="checkbox"/> Charts..... <input type="checkbox"/> Graphs..... <input type="checkbox"/> Others (specify)		
Section 10: Logistics system and infrastructure				
Q10.1	How do you receive medical supplies and commodities? Tick all that apply	From donors..... <input type="checkbox"/> (Specify donor)..... Purchased by facility..... <input type="checkbox"/> From Government..... <input type="checkbox"/> No delivery of supplies..... <input type="checkbox"/>		
Q10.2	Does the medical supplies sent to you “PUSH” method?	No	Yes	
Q10.3	Do you go make request to collect the medical supplies “PULL”?			
Q10.4	How do you determine your requirement of medical supplies? Tick all that apply	Based on consumption..... <input type="checkbox"/> Demographic data..... <input type="checkbox"/> Storage capacity..... <input type="checkbox"/> Service statistics..... <input type="checkbox"/>		

		Others (specify) _____		
Q10.5	Who bears the cost of delivery of medical supplies and commodities? Tick all that apply	Government..... <input type="checkbox"/> Facility..... <input type="checkbox"/> Others (specify)_		
Q10.6	Does this health facility have a store for medical supplies and commodities?	No	Yes	Skip to
Q10.7	Does the DOTs centre/ health facility have a solar refrigerator?			
Q10.8	Do you use safety boxes for sharp objects?			
Q10.9	How are medical wastes disposed of at this facility? Tick all that apply	Burn & Bury..... <input type="checkbox"/> Incinerator..... <input type="checkbox"/> Open dumping <input type="checkbox"/> Others (specify)_____		
Q10.10	Please sight and describe the waste disposal site (Write in the space below)			
Q10.11	Is the essential drugs list displayed in your health facility?	No	Yes	
Q10.12	Do you keep ledgers for the essential drugs? Tick yes only if sighted			
Q10.13	Do you have bin cards? Tick yes only if sighted			
Q10.14	Do you use Stores Issued Vouchers and Stores Received Vouchers (SIV and SRV respectively)?			
Q10.15	Do you use stock ledger to manage health commodities in the facility			
Q10.16	Have you experienced stock-outs of essential drugs in the last three months? Please check records Tick yes only if both vouchers are being used			
Q10.17	If yes, please list the type of essential drugs that were stocked-out. (Write in the space below:			
Q10.18	How do you replenish your drug supply? Tick all that apply	From Government <input type="checkbox"/> Ad hoc..... <input type="checkbox"/> At open market..... <input type="checkbox"/> Others specify)_____		

Q10.19: Please complete the table 1 on stock availability below. Circle which drug or medical supply (if any) that is currently stocked out.

Table 1: Stock Availability

Product	Unit	Used at this facility? (Y/N)	Physical verification of product (Y/N)	Stock out today? (Y/N)	Stock card available? (Y/N)
Antimalarial (specific name)	Tab				
Haematinics	Tab				
Analgesics (Paracetamol)	Tab				
Storage area for drugs (comment freely)					
Laboratory supplies (comment freely)					

Q10.21 Challenges encountered in service delivery:

.....

Q10.22 Recommendations for improved service delivery:

.....

Thank the interviewee for participation!

Appendix XIII: Key informant interview guide for NHIS focal persons at the facility

Introduction

Greeting. My name is _____ I am here on behalf of the Lead Investigator in this research work. The goal of this study is to assess the quality of health service delivery in selected NHIS facilities like this. Your participation in this survey will be highly appreciated. Your participation is entirely voluntary and your decision whether or not to participate will involve no penalty or loss of benefits.

Remember:

There are no right and wrong answers, this is not an examination.

Please answer all the questions as honestly and accurately as you can — this is very important and will help improve the delivery of care in this facility.

If you have further questions or concerns, please contact the undersigned

Dr. David Adewole (Lead Investigator), Room 4.34 Entrance 5, Falmouth building Division of Public Health Medicine School of Public Health and Family Medicine Faculty of Health Sciences Observatory 7925 University of Cape Town, Cape Town, South Africa. Email: adwdav001.ac.za; Phone number: +27643865918 & +2348034052838

Note to Interviewer: Share the study information sheet and request for signed consent

Demographics, TAKE NOTES (identifying information to be kept separate from interview transcripts)

Sex of interviewee:

Just to confirm that I have your details right.....

How old are you please?

Participant's name & organization and email/ contact details (fill in beforehand if possible):

Participant's title/designation and primary responsibilities:

What year did you start working in this organization? What year did you start in this particular position?

REQUEST TO TURN ON RECORDERS AT THIS POINT IN THE INTERVIEW

S.No.	Questions	Probes
	<p>What do you think about the NHIS generally and how clients come about using the facility?</p>	<p>How your facility was selected, what were the criteria used in selecting your facility? Probe; what is the current pattern of distribution of enrolees among providers in Ibadan city to be specific, do you know? (If he does not know, tell him about the fact that > 50% of the current enrolees are shared between just 3 providers out of 132 accredited providers) What is the process of enrolees distribution to accredited health facilities Are you aware that enrolees distribution in accredited health facilities is lopsided (some have a high clientele load, some very low)? In your own opinion, what is/are responsible for this skewed distribution? What are the roles of the; NHIS, HMOs, facilities and the enrolees in this distribution pattern What is the catchment area of your facility, do you know if enrolees come from much further away places than the catchment area In your own opinion, what is/are the factors responsible for clients choosing to go to some places especially further away facilities rather than those that are close by</p>
	<p>What are your views on the likely effect of skewed distribution of enrolees across NHIS accredited facilities?</p>	<p>In your own view, what are the likely consequences of patient lopsided distribution across health facilities; If patient are too many; if they are too few Effect on physical infrastructure and health personnel especially if patients are too many Effect on waiting time, and quality of services rendered Effect on general patient satisfaction What are the likely consequences on health outcomes if patients come from far away places Probe for and help him/her discuss Cost of transportation to and fro health facility Late presentation at health facility, and the likely consequences Inefficient service delivery because of heavy workload in preferred facilities and likelihood of poor quality services eventually Likelihood of prolonged waiting time for patients Difficulties in reaching health facilities especially in emergency situations that happens at odd hours How could the challenges be addressed? In your own opinion, what are the likely reasons patients chose some facilities and not others especially those that are closer to their places of residents (ask about drugs, personnel, equipment, attitude of health workers etc etc) What do you advise to correct this (on the parts of the stakeholders (HMOs, NHIS, Providers, enrolees)</p>

	<p>Can you explain the how health care services are provided to NHIS enrolees in your facility and its influence on client satisfaction and treatment outcomes?</p>	<p>Client load Client satisfaction with quality of care Working relationship between health care facility, HMOs and the NHIS office What are the services rendered to enrolees What are the services not covered Do enrolees still make payments, and if yes, what are the payments meant to cover Adequacy and functionality of infrastructural facilities</p>
	<p>In your views, does the facility have adequate skilled staff to cope with your current enrolees load?</p>	<p>Availability and competency of staff by cadres to cope with clientele load Frequency of training/refresher training and type of training (i.e. in different specialities) Attitude and general disposition of staff members to enrolees Sometimes complain do come up that people who are not on health insurance are treated better than NHIS enrol less, are you aware about this What do you think is responsible for this and how do you want to correct it</p>
	<p>What are the facility infrastructure that are available to cope with your clientele load</p>	<p>Availability of diagnostic and therapeutic equipment Laboratory logistics and supplies Adequacy of waiting area and general infrastructure to support patients while in the process of receiving care Availability of water, toilets, and conducive environment</p>
	<p>Please describe the adequacy of the National Health Information System for care and service provision?</p>	<p>Probe for Availability and actual use of registers Extent of submission of data reporting tools to the next level and frequency of written or oral feedback from national level Frequency of Data audit/assessment at facilities Data quality issues</p>
	<p>Can you describe the drug and supplies logistics system for your facility and gaps or strengths with regards to its effective management</p>	<p>Probe for Availability of drugs Standardized protocol for forecasting drugs Mechanisms for forecasting, procurement, and distribution of drugs; Supervisory mechanism for forecasting, procurement, and drug distribution Episodes and duration of stock out in the last 6 months and mitigation efforts</p>
	<p>What are the challenges hindering service delivery?</p>	<p>Heavy client patronage sometimes Drug availability Adequacy and functionality of equipment Staff adequacy and competence</p>

	What would you recommend for improved service provision?	Probe: Staffing, Drug and Supplies, Health Information System, Infrastructural Facilities, Health financing etc Any mechanism to solicit patient feedback on satisfaction
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Thank the interviewee for participation!

Appendix XIV: Key informant interview guide for HMOs and NHIS focal persons

Introduction

Greeting. My name is _____ I am here on behalf of the Lead Investigator in this research work. The goal of this study is to assess the quality of health service delivery in selected NHIS facilities like this. Your participation in this survey will be highly appreciated. Your participation is entirely voluntary and your decision whether or not to participate will involve no penalty or loss of benefits.

Remember:

This is not an examination, there are no right and wrong answers

Please answer all the questions as honestly and accurately as you can — this is very important and will help improve the delivery of care in this facility.

If you have further questions or concerns, please contact the undersigned

Dr. David Adewole (Lead Investigator), Room 4.34 Entrance 5, Falmouth building Division of Public Health Medicine School of Public Health and Family Medicine Faculty of Health Sciences Observatory 7925 University of Cape Town, Cape Town, South Africa. Email: adwdav001.ac.za; Phone number: +27643865918 & +2348034052838

Note to Interviewer: Share the study information sheet and request for signed consent

Demographics, TAKE NOTES (identifying information to be kept separate from interview transcripts)

Sex of interviewee:

Just to confirm that I have your details right.

How old are you please?

Participant's name & organization and email/ contact details (fill in beforehand if possible):

Participant's title/designation and primary responsibilities:

What year did you start working in this organization? What year did you start in this particular position?

REQUEST TO TURN ON RECORDERS AT THIS POINT IN THE INTERVIEW

S.No.	Questions	Probes
	<p>What do you think about the NHIS generally and how clients come about selecting a particular facility?</p>	<p>How was are facilities selected, what were the criteria used in selecting NHIS accredited facilities? Probe; what is the current pattern of distribution of enrolees among providers in Ibadan city to be specific, do you know? (If he does not know, tell him about the fact that > 50% of the current enrolees are shared between just 3 providers out of 132 accredited providers) How do clients come to choose the facility (personal choice, HMOs, NHIS, workplace, provider) Are you aware that some clients travel a great distance to reach your health facility In your own opinion, what is/are the factors responsible for clients choosing to go to some places especially further away facilities rather than those that are close by In your own opinion, what is responsible for this skewed distribution?</p>
	<p>What are your views on the likely effects of skewed enrolees distribution across NHIS accredited facilities?</p>	<p>In your own view, what are the likely consequences of patient lopsided distribution across health facilities; If patient are too many; if they are too few Effect on physical infrastructure and health personnel especially if patients are too many Effect on waiting time, and quality of services rendered Effect on general patient satisfaction What are the likely consequences on health outcomes if patients come from faraway places Probe for and help him/her discuss Cost of transportation to and fro health facility Late presentation at health facility, and the likely consequences Inefficient service delivery because of heavy workload in preferred facilities and likelihood of poor quality services eventually Likelihood of prolonged waiting time for patients Difficulties in reaching health facilities especially in emergency situations that happens at odd hours How could the challenges be addressed?</p>
	<p>Can you explain the how health care services are provided to NHIS enrolees in your facility and its influence on client satisfaction and treatment outcomes?</p>	<p>Client load Client satisfaction with quality of care Working relationship between health care facility, HMOs and the NHIS office What are the services rendered to enrolees What are the services not covered Do enrolees still make payments, and if yes, what are the payments meant to cover Adequacy and functionality of infrastructural facilities</p>
	<p>In your views, does the facilities have</p>	<p>Availability and competency of staff by cadres to cope with clientele load</p>

	adequate skilled staff to cope with your current enrolees load?	<p>Frequency of training/refresher training and type of training (i.e. in different specialities)</p> <p>Attitude and general disposition of staff members to enrolees</p> <p>Sometimes complain do come up that people who are not on health insurance are treated better than NHIS enrollees, are you aware about this, possibly from complaints lodged in your office</p> <p>What do you think is responsible for this and how do you want to correct them?</p>
	What are the facilities infrastructure that are available to cope with your clientele load	<p>In your own view as a HMO Rep, how about the following services in accredited facilities;</p> <p>Availability of diagnostic and therapeutic equipment</p> <p>Laboratory logistics and supplies</p> <p>Turn-around times for lab results</p> <p>Adequacy of waiting area and general infrastructure to support patients while in the process of receiving care</p> <p>Availability of water, toilets, and conducive environment</p>
	Please describe the adequacy of the National Health Information System for care and service provision?	<p>Probe for</p> <p>Availability and actual use of registers</p> <p>Extent of submission of data reporting tools to the next level and frequency of written or oral feedback from national level</p> <p>Frequency of Data audit/assessment at facilities</p> <p>Data quality issues</p>
	Can you describe the drug and supplies logistics system in your partner facilities and gaps or strengths with regards to its effective management	<p>Probe for</p> <p>Availability of drugs</p> <p>Standardized protocol for forecasting drugs</p> <p>Mechanisms for forecasting, procurement, and distribution of drugs;</p> <p>Supervisory mechanism for forecasting, procurement, and drug distribution</p> <p>Episodes and duration of stock out in the last 6 months and mitigation efforts</p>
	What are the challenges hindering service delivery?	<p>Heavy/low client patronage sometimes</p> <p>Drug availability</p> <p>Adequacy and functionality of equipment</p> <p>Staff adequacy and competence</p>
	What would you recommend for improved service provision?	<p>Probe:</p> <p>Staffing, Drug and Supplies, Health Information System, Infrastructural Facilities, Health financing etc</p> <p>Any mechanism to solicit patient feedback on satisfaction</p>

Thank the interviewee for participation!

Appendix XV: In-depth Interview Guide to Assess Clients' Satisfaction with Quality of Care

Introduction

Greeting. My name is _____ I am here on behalf of the Lead Investigator in this research work. The goal of this study is to assess the quality of health service delivery in selected NHIS facilities like this. Your participation in this survey will be highly appreciated. Your participation is entirely voluntary and your decision whether or not to participate will involve no penalty or loss of benefits.

Remember:

There are no right and wrong answers, this is not an examination.

Please answer all the questions as honestly and accurately as you can — this is very important and will help improve the delivery of care in this facility.

If you have further questions or concerns, please contact the undersigned

Dr. David Adewole (Lead Investigator), Room 4.34 Entrance 5, Falmouth building Division of Public Health Medicine School of Public Health and Family Medicine Faculty of Health Sciences Observatory 7925 University of Cape Town, Cape Town, South Africa. Email: adwdav001.ac.za; Phone number: +27643865918 & +2348034052838

Note to Interviewer: Share the study information sheet and request for signed consent

Demographics, TAKE NOTES (identifying information to be kept separate from interview transcripts)

a. Name of Facility: _____

b. Town/LGA : _____

Location: 1. Urban [] 2. Semi-urban []

Type of Facility: 1. Private [] 2. Government owned []

Facility level: 1. Tertiary [] 2. Secondary []

Sex of respondent: _____

Age (in years): _____

S.No.	Questions	Probes
1	What do you think about the NHIS generally and how client come about using the facility?	<p>How did client come to choose the facility (personal choice, HMOs, NHIS, workplace, provider)</p> <p>Distance between health facility and residence of client</p> <p>Ease of access to health facility and cost of transportation</p> <p>Any (untoward) experience in the past as a result of having to travel for a long distance to reach health facility (traffic hold up, worsened health condition, death etc)</p> <p>Are there some NHIS accredited facilities closer to your residence?</p> <p>If yes, why did you choose this (further away) facility instead of the nearer ones?</p>
2	What is your general perception about the quality of care in this facility?	<p>Probe for</p> <p>Type of services received</p> <p>Relationship between the enrolees and health providers</p> <p>Quality of service delivery</p> <p>Availability of trained/skilled medical personnel at the clinics</p> <p>Availability of essential drugs, products and technologies</p> <p>Clients' financial expenditure on care during a visit (out of pocket, health insurance etc)</p> <p>Quality and cleanliness of infrastructure, and facilities</p> <p>Availability of toilets – is it for health workers alone?</p> <p>Is water available for cleaning purposes</p> <p>Satisfaction with quality of care received</p> <p>Clients' willingness to visit the facility for subsequent care</p> <p>Client's willingness to recommend the facility to friends and relatives</p> <p>Does the type of ownership have anything to do with how services are rendered in this facility? (this question is for the faith-based facilities).</p>
3	Can you comment freely on clients' waiting time for care in this facility?	<p>Probe for waiting time at the records unit, laboratory, pharmacy, nursing unit, medical unit and total time usually spent (in hour)s at the clinic</p> <p>Probe for how comfortable the waiting area is</p>
4	In your opinion, what do you think about client-provider relationship in this facility?	<p>Probe for the courtesy and respect given by health worker</p> <p>Privacy and confidentiality</p> <p>Client's ability and trust to discuss problem with the health provider</p> <p>Satisfaction with explanation about the diseases or treatment</p> <p>Perceived quality of treatment received during visit to the clinic</p> <p>Perceived health providers' thoroughness in examining the client and ensuring the comfort of the patient</p> <p>Is there a designation centre/unit in the facility for general enquiries/information?</p>
5	What actions would you recommend to improve clients' satisfaction with care in this facility?	

Marital status: 1. Married 2. Single 3. Others (Please specify)

Duration of accessing care at the facility(months/years)

REQUEST TO TURN ON RECORDERS AT THIS POINT IN THE INTERVIEW

Thank the interviewee for participation!

Appendix XVI: Client exit questionnaire to assess satisfaction with quality of care

Introduction

Greeting. My name is _____ I am here on behalf of the Lead Investigator in this research work. The goal of this study is to assess the quality of health service delivery in selected NHIS facilities like this. Your participation in this survey will be highly appreciated. Your participation is entirely voluntary and your decision whether or not to participate will involve no penalty or loss of benefits.

Remember:

There are no right and wrong answers, this is not an examination.

Please answer all the questions as honestly and accurately as you can — this is very important and will help improve the delivery of care in this facility.

If you have further questions or concerns, please contact the undersigned

Dr. David Adewole (Lead Investigator), Room 4.34 Entrance 5, Falmouth building Division of Public Health Medicine School of Public Health and Family Medicine Faculty of Health Sciences Observatory 7925 University of Cape Town, Cape Town, South Africa. Email: adwdav001.ac.za; Phone number: +27643865918 & +2348034052838

Coordinates (Latitude and Longitude in decimal):

Accuracy of coordinates:

Interviewer's Name: _____ Signature _____ Date _____

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. House/residential address

.....

2. Name of most popular area/landmark closest to your residence and the coordinate

.....

3. LGA/Ward

.....

4. Name of closest NHIS accredited health facility to residence

5. Name of chosen NHIS facility to receive care

6. Age at last birthday (in years)_____

7. Sex (1) Male (2) Female

8. Marital status (1) Single (2.) Married (3) Others

9. Religion 1. Christianity 2. Islam 3. Traditional 4. Others (specify)_____

10. Ethnicity 1. Yoruba 2. Hausa 3. Igbo 4. Others Specify_____

11. Highest level of education 1. No formal education 2. Primary 3. Secondary 4. Tertiary 5. Others, specify_____

12. Occupation: Civil servant Artisan Traders/business Others (please specify)

.....

13. Where do you work? (please specify the location/address) _____

14. Do you have any dependent enrolled with you on this scheme?

(1). Yes (2) No

15. Which household items do you have? (Multiple choices allowed)

- | | | | | |
|-------------------|--------|--------------------------|--------|--------------------------|
| a. Electricity? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| b. Radio? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| c. Television? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| d. Telephone? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| e. Refrigerator? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| f. Electric fan? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| g. Gas cooker? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| h. Electric iron? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| i. Motorcycle? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |

- | | | | | |
|----------------------------------|--------|--------------------------|--------|--------------------------|
| j. Car? | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| k. Pipe borne water | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| l. Borehole water | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| m. Well water | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| n. Water closet | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| o. Air conditioner | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |
| p. Solar/inverter
electricity | i. Yes | <input type="checkbox"/> | ii. No | <input type="checkbox"/> |

7b. The main material for the floor of your home is:-

- | | |
|------------------------------|--------------------------|
| a. Natural floor – Sand/Dung | <input type="checkbox"/> |
| b. Wood planks/Palm/Bamboo | <input type="checkbox"/> |
| c. Polished floor | <input type="checkbox"/> |
| d. Ceramics tiles | <input type="checkbox"/> |
| e. Cement | <input type="checkbox"/> |
| f. Carpet/Rug | <input type="checkbox"/> |

SECTION B: CHARACTERISTICS OF NHIS ENROLEES

16. How long have you been on this scheme? _____

17. What is your mode of enrolment in this scheme?

Voluntary contributor (ii). Government/private sector sponsored

18. Which of the ailments below do you receive care for in this hospital? (multiple responses allowed, tick \checkmark as are applicable)

Hypertension Diabetes Arthritis Sickle cell anaemia Retroviral illness

Long-time respiratory illness Malaria Others (please specify)

.....

SECTION C: KNOWLEDGE OF NHIS

19. What is the meaning of NHIS _____
20. Do you know what HMO stand for (1) Yes (2) No
21. Do you know the name of your HMO (1) Yes (2) No
22. What is the name of your HMO? _____

SECTION D: NHIS ENROLEES' CHOICE OF FACILITY

23. How did you get enrolled in this hospital? (i) I was instructed to do so (ii) Personal choice (iii) Others (specify).....

If your choice in Q23 is (i), who directed you to enrol in this hospital?

- (i) Friends/close Associates/relatives (ii) Directive from my employer/place of work (iii) Physicians (iv) HMOs (v). Others (specify)

24. Did you seek information about the quality of this health facility before choosing it? (i) Yes (ii) No (iii) unsure

25. Do you know of any other NHIS accredited health facility closer to your house than the present one? (i). Yes (ii) No (Go to Q 28)

26. Why did you choose the present facility rather than the facility closer to your house? (Multiple responses allowed) (i). I like the way health care workers attend to me (ii). I am able to get all the services in the same hospital (iii). I like the general physical environment (v). Other reasons (Please specify)

27. What is the cost of transportation between your house and the nearest NHIS accredited health facility where you do not attend for health care? (Please specify amount)

28. How much is the cost (one way alone) of transportation between your house and the current health facility that you attend each time you need to visit? (Please specify amount)

29. Have you ever been registered with any other NHIS accredited health facility before the present one? (i). Yes (ii) No (Go to Q 31)

30. If yes to Q29, why did you leave the former health facility to come to the present health facility?

- (i) I don't like the way health care workers attend to me
- (ii) I am not able to get all the services in the same hospital
- (iii) I don't like the general physical environment
- (iv) Other reasons (Please specify)

31. If you are allowed, would you want to leave this present health facility for another NHIS accredited facility? (i). Yes (ii) No (Go to Q33)

32. If yes to Q31, what are your reasons for your decision to leave?

- i. Inconvenient operating hours
- ii. No medicine and or diagnostic equipment
- iii. Don't like health personnel/poor attitude of health personnel
- iv. Other reason(s) Please specify

SECTION E: CLIENT ASSESSMENT OF WAITING TIME FOR SERVICE UTILISATION

33. I will like to ask you questions on the time spent at some sections/department, How long did you have to wait (indicate actual time) during your visit to the clinic today

	Place	Estimated Time duration	Time longer than expected	Time was just right	Time shorter than expected
I	At the reception area				
Ii	Records area				
Iii	At the laboratory if you have been there, if not, skip				
Iv	Length of time while waiting to see the nurse/doctor				
V	Length of time spent with the nurse/doctor				
Vi	At the Pharmacy before getting your drugs				
Vii	What is the total time spent during your last visit to this clinic				
viii	Total time spent at the clinic today				

SECTION F: CLIENT’S ASSESSMENT OF SERVICE PROVISION

34. I will like to ask you questions on services provided during your visit to the clinic today

	Item	Yes	No	Can’t remember
I	During your visit of today, did the nurse/doctor assess your vital signs (weight, blood pressure, pulse rate, temperature etc)?			
ii	During your visit of today, did the nurse/doctor allow you to finish your complaints before making his/her diagnosis?			
iii	Did the nurse/doctor explain how to take the prescribed drugs?			
iv	Did the nurse/doctor inform you about the side effects of the drugs?			
v	Did the nurse/doctor inform you about your next clinic appointment/visit?			

SECTION G: PATIENTS’ SATISFACTION WITH SERVICES PROVIDED BY HEALTH WORKERS

35. Rate the following services by ticking (√) the appropriate box

		Now I am going to ask about some common problems clients have at health facilities. As I mention each one, please tell me whether you are satisfied or Dissatisfied with it.	
		Satisfied	Not satisfied
I	Amount of explanation you received about the problem or treatment		
ii	Opportunity to discuss problems on your health with nurse/doctor		
iii	Time you waited to see a provider		
iv	How the staff treated you		
v	The cleanliness of the facility		
vi	Examination and treatment provided		
vii	Availability of medicines at this facility		
viii	Privacy from others seeing you being examined		
ix	Privacy from others hearing your discussion		
x	The ease of locating the clinic during your first visit		
xi	To what extent did the clinic meet all your health needs today		
xi	The hours of service at this facility, i.e., when they open and close		
xii	Any comment or clarification?		

**36. How strongly do you AGREE OR DISAGREE with each of the following statements
(Tick one per row)**

	QUESTION	AGREE	UNDECIDED	DISAGREE
I	The medical care I have been receiving is inadequate			
Ii	Sometimes health workers make me wonder if their diagnosis is correct			
Iii	During my medical visits, I am always allowed to say everything that I think is important			
Iv	When I go for medical care, they are careful to check everything when treating and examining me			
V	It is hard for me to get medical care on short notice			
Vi	The health workers who treat me have a genuine interest in me as a person			
Vii	Sometimes I don't understand the medical terms health workers use to speak with me			
Viii	The clinic should be opened for more hours than it is			
Ix	Health workers sometimes ignore what I tell them			
X	I have some doubts about the ability of the health workers who treat me			
		Yes	No	Don't Know
Xi	Will you recommend this health facility to a friend or family member?			

27. Comment freely by suggesting ways the Healthcare services of this clinic can be improved

.....

.....

.....

.....

.....

Thank the interviewee for participation!

Appendix XVII: Informed Consent form for patient participants

A. Study title

Geospatial patterns and determinants of choice of secondary healthcare facilities among National Health Insurance enrollees in Ibadan Nigeria

B. Name(s) and affiliation(s) of researcher(s)

This study is being conducted by **David Adewole**, a PhD Student of the Research Initiative for Cities & Health School of Public Health and Family Medicine, University of Cape, South Africa.

C. Sponsor(s) of research

This study is sponsored by Postgraduate Academic Mobility for African Physician Scientists (PAMAPS)

D. Purpose(s) of research

There is some information about what informs the choice of health facilities among patients in developed countries and the potential of this on how they receive care and effect of this on their well-being, however, such is not common in developing countries like Nigeria. The purpose of this research is to identify the pattern of distribution of National Health Insurance Scheme (NHIS) accredited health facilities and what determines the choice of health care facilities among NHIS enrollees in the city of Ibadan. We hope that the information we get may benefit you and others in the future. Please ask us questions about anything you do not understand or if you would like more information. We are happy to explain this to you more than once. Please take whatever time you need to talk about the study with your doctor or nurse, the study staff, your family and friends.

E. Procedure of the research, what shall be required of each participant and approximate total number of participants that would be involved in the research

Using appropriate research methods, health workers and patients (NHIS enrollees) will be selected. Information will be collected with the aid of an interviewer administered questionnaire, a focus group discussion and one on one interview with a study staff. We plan to recruit and obtain information from a total of 1650 individuals in this study.

F. Expected duration of research and of participant(s)' involvement

Data collection is expected to last for a period of six months. Participant interviews are estimated to take an average of an hour.

G. Risk(s)

Your participation in this research will not put you at any health risk, since the study does not involve any invasive method such as collection of blood or any other body fluids.

H. Cost(s)

Your participation in this research will not have any financial implication on you.

I. Benefit(s)

Information obtained from this study is intended to influence policies on and approaches to distribution of health care facilities in such a way as to ensure the distance between health care facilities selected by individuals and the residence is within reasonable distance to ensure access to needed health care in good time and as well as to ensure receiving quality health care. We believe this will go a long way to improve health services delivery and patient outcomes.

J. Confidentiality

All information collected in this study will be given code numbers and no name will be recorded. This cannot be linked to you as a study participant in any way and your name or any other identifier will not be used in any publication or report from this study. However, we are obliged to allow officials from the National Health Research Ethics Committee have access to these records.

K. Voluntariness

It is a personal decision whether you take part in the study. In other words, it is up to you whether you want to participate in the study. You can say “yes” and join the study; or you can also say “No,” you don’t want to join. If you participate in the study, you can change your mind later and decide that you don’t want to participate anymore and you do not want your information to be used in this study. Please let us know and we will destroy the data. If the data obtained from you have already been analysed at the time you change your mind, your results and other data may have already been shared with other investigators. In that case, we will not be able to destroy this data. Your data can be removed from the central repository, however. That means that no additional researchers can get your data. Whether you decide to join or not to join the study, the way we look after you in this health facility will be the same. It is your decision whether to be in the study or not.

L. Participant compensation

We will cover the costs of your travel to get back home today.

M. Consequences of participants’ decision to withdraw from research and procedure for orderly termination of participation

You can also choose to withdraw from the research anytime. Please note that some of the information that has been obtained about you before you chose to withdraw may have been modified or used in reports and publications. These cannot be removed anymore. However, the researcher promises to make effort in good faith to comply with your wishes as much as is practicable.

N. What happens to research participants and communities when the research is over

The researcher will inform you of the outcome of the research through a news bulletin. During the course of this research, you will be informed about any information that may affect your continued participation or your health.

O. Statement about sharing of benefits among researchers and whether this includes or excludes research participants

There is no plan to contact you or any other participant now or in future about any commercial benefit.

P. Any apparent or potential conflict of interest

The researcher does not have any conflict of interest that may hinder his work with fear or favor.

Statement of person obtaining the informed consent

I have fully explained this research to -----and have given sufficient information, including risks and benefits, to make an informed decision.

DATE: ----- SIGNATURE: -----

NAME: -----

Statement of person giving consent

I have read the description of the research and I understand it. I have discussed with the researcher to my satisfaction. I understand that my participation is voluntary. I know enough about the purpose, methods, risks and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep for myself.

DATE: ----- SIGNATURE/THUMBPRINT: -----

NAME: -----

Detailed contact information including contact address, telephone, fax, e-mail and any other contact information of researcher(s), institutional HREC and head of the institutions

This research has been approved by the Ethics Committee of the University of Cape Town, South Africa. The Chairperson of this committee can be contacted at Floor E53, Room 46 Old Main Building Groote Schuur Hospital Observatory, 7925. Telephone: +27216501236. Email address: research.health@uct.ac.za

In addition, if you have any question about your participation in this research, you can contact the Principal Investigator,

Name: David Adewole

Department: Research Initiative for Cities and Health School of Public Health and Family Medicine, University of Cape, South Africa

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Appendix XVIII: Informed Consent form for non-patient participants

A. Study title

Geospatial patterns and determinants of choice of secondary healthcare facilities among National Health Insurance enrolees in Ibadan Nigeria

B. Name(s) and affiliation(s) of researcher(s)

This study is being conducted by **David Adewole**, a PhD Student of the Research Initiative for Cities & Health School of Public Health and Family Medicine, University of Cape, South Africa.

C. Sponsor(s) of research

This study is sponsored by Postgraduate Academic Mobility for African Physician Scientists (PAMAPS)

D. Purpose(s) of research

There is some information about what informs the choice of health facilities among patients in developed countries and the potential of this on how they receive care and effect of this on their well-being, however, such is not common in developing countries like Nigeria. The purpose of this research is to identify the pattern of distribution of National Health Insurance Scheme (NHIS) accredited health facilities and what determines the choice of health care facilities among NHIS enrolees in the city of Ibadan. We hope that the information we get may benefit you and your patients in the future. Please ask us questions about anything you do not understand or if you would like more information. We are happy to explain this to you more than once.

E. Procedure of the research, what shall be required of each participant and approximate total number of participants that would be involved in the research

Using appropriate research methods, health workers and patients (NHIS enrolees) will be selected. Information will be collected with the aid of an interviewer administered questionnaire, a focus group discussion and one on one interview with a study staff. We plan to recruit and obtain information from a total of 1650 individuals in this study.

F. Expected duration of research and of participant(s)' involvement

Data collection is expected to last for a period of six months. Participant interviews are estimated to take an average of an hour.

G. Risk(s)

Your participation in this research will not put you at any health risk, since the study does not involve any invasive method such as collection of blood or any other body fluids.

H. Cost(s)

Your participation in this research will not have any financial implication on you.

I. Benefit(s)

Information obtained from this study is intended to influence policies on and approaches to distribution of health care facilities in such a way as to ensure the distance between health care facilities selected by individuals and the residence is within reasonable distance to ensure access to needed health care in good time and as well as to ensure receiving quality health care. We believe this will go a long way to improve health services delivery and patient outcomes.

J. Confidentiality

All information collected in this study will be given code numbers and no name will be recorded. This cannot be linked to you as a study participant in any way and your name or any other identifier will not be used in any publication or report from this study. However, we are oblique to allow officials from the National Health Research Ethics Committee have access to these records. Only the researcher and assistant will have access to your study records and the tape-recordings. After the interviews have been copied from the tapes, the tapes will be destroyed. Your individual identities will not be used in any reports or publications that may result from this study.

K. Voluntariness

It is a personal decision whether you take part in the study. In other words, it is up to you whether you want to participate in the study. You can say “yes” and join the study; or you can also say “No,” you don’t want to join. If you participate in the study, you can change your mind later and decide that you don’t want to participate anymore and you do not want your information to be used in this study. Please let us know and we will destroy the data. If the data obtained from you have already been analysed at the time you change your mind, your results and other data may have already been shared with other investigators. In that case, we will not be able to destroy this

data. Your data can be removed from the central repository, however. That means that no additional researchers can get your data. It is your decision whether to be in the study or not.

L. Participant compensation

Your patients travel costs back home will be covered.

M. Consequences of participants' decision to withdraw from research and procedure for orderly termination of participation

You can also choose to withdraw from the research anytime. Please note that some of the information that has been obtained about you before you chose to withdraw may have been modified or used in reports and publications. These cannot be removed anymore. However, the researcher promises to make effort in good faith to comply with your wishes as much as is practicable.

N. What happens to research participants and communities when the research is over

The researcher will inform you of the outcome of the research through a news bulletin. During the course of this research, you will be informed about any information that may affect your continued participation or your health.

O. Statement about sharing of benefits among researchers and whether this includes or excludes research participants

There is no plan to contact you directly or any other participant now or in future about any commercial benefit.

P. Any apparent or potential conflict of interest

The researcher does not have any conflict of interest that may hinder his work with fear or favor.

Statement of person obtaining the informed consent

I have fully explained this research to -----and have given sufficient information, including risks and benefits, to make an informed decision.

DATE: ----- SIGNATURE: -----

NAME: -----

Statement of person giving consent

I have read the description of the research and I understand it. I have discussed with the researcher to my satisfaction. I understand that my participation is voluntary. I know enough about the purpose, methods, risks and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep for myself.

DATE: ----- SIGNATURE/THUMBPRINT: -----

NAME: -----

Detailed contact information including contact address, telephone, fax, e-mail and any other contact information of researcher(s), institutional HREC and head of the institutions

This research has been approved by the Ethics Committee of the University of Cape Town, South Africa. The Chairperson of this committee can be contacted at Floor E53, Room 46 Old Main Building Groote Schuur Hospital Observatory, 7925. Telephone: +27216501236. Email address: research.health@uct.ac.za

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Department of Health Policy and Management, Faculty of Health Sciences, College of Medicine University of Ibadan, Nigeria

Phone: +2348034052838

E-mail: ayodadewole@yahoo.com

Appendix. XIX: Budget for research work

S/No	Activity	Expenses (ZAR)	Expenses (€)
1.	Pre-Testing of all instruments	5,450	350.20
2	Internet Subscription (Literature Review)	4,300	276.30
4.	Ethical Approval	2,750	176.70
5.	Stationary Costs	5,000	321.30
6.	Printing (Survey Instruments)	7500	481.90
7	Equipment (Recorders)	11,500	738.90
7.	Data Collection Research Assistants	18,276	1,174.30
8.	Communication and Supervision	9,750	626.50
10.	Data Analysis (Entry and Transcription)	10,500	674.70
11.	Airfare (travels between South Africa and Nigeria to collect data) x 3 events	32,361	2,079.30
	Report Writing & Dissemination	8,578	551.20
	Total	R115,965	€7,451.10

Appendix. XX: Time plan

Deliverables	2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Registration												
Proposal Development												
Submit to Research Ethics Committee												
Study participants Recruitment												
Qualitative data collection												
Qualitative data analysis												
Quantitative data collection and analysis												
Interim presentation												
Fine tune study work												
PhD work Submission												
Graduation												

Appendix. XXI: Pattern of bypassing in Teju Specialist Hospital

Closest NHIS Facility	Frequency	Percentage
Baptist Cottage Hospital	5	8.33
Anu Oluwa Hospital & Maternity	1	1.67
ASVON Hospital	1	1.67
Continental Medical Centre	1	1.67
Dorjil Clinic	1	1.67
Fadebi Hospital	1	1.67
First Life Hospital	2	3.33
Full House Specialist Hosp.	2	3.33
God's Knot Hospital	1	1.67
Jericho Hospital	1	1.67
JVM Hospital	1	1.67
Lad Hospital	4	6.67
Lagelu Medical Cengre	4	6.67
Lanark Specialist Hospital	1	1.67
Lead City Hospital	1	1.67
Odunkakin Specialist Hospital	1	1.67
Ola Oluwa Medical centre	1	1.67
Oluwafemi Specialist Hospital	3	5.0
Oluwaseun Clinic & Maternity	5	8.33
Oni Wumi Medical centre	2	3.33
Oyin Specialist Hospital	1	1.67
Police Cottage Hospital	1	1.67
Ramoth-Gilead	1	1.67
Safepath Hospital	1	1.67
Samrom.specialist.hospital	1	1.67
Segun Adeniyi Memorial Health Clinic & Maternity Home	1	1.67
Shiloh Medical Centre & Maternity	2	3.33
St Dominic Catholic Hospital	1	1.67
St.Jacob's Mission Hospital	1	1.67

Teju Hospital	1	1.67
Tobi Medical Centre	4	6.67
U.I Health Centre Jaja	1	1.67
Closest NHIS Facility	Frequency	Percentage
Unity Medical Center	2	3.33
Welfare Hospital Ltd	2	3.33
Zion Hospital & Maternity	1	1.67
TOTAL	60	100

Appendix XXII: Pattern of bypassing in St. Mary Catholic Hospital

Closest NHIS Facility	Frequency	Percentage
Alms Hospital	1	1.70
Anu oluwa hospital & maternity	12	20.34
Cocoa Research Institute of Nigeria Health Centre	3	5.08
College Medical Centre	4	6.78
Durojaiye Memorial Hospital	1	1.70
Fadebi Hospital	1	1.70
First life hospital	2	3.39
Hamdala Hospital	2	3.39
Jericho Hospital	1	1.70
Lad Hospital	6	10.17
Lagelu Medical Centre	1	1.70
Lead City University	4	6.78
Metropolitan Specialist Hospital	1	1.70
Mobolaji hospital	3	5.08
Moviv Specialist Hospital	1	1.70
New day hospital	2	3.39
Odinjo primary health center	2	3.39
Oluwaseun Clinic & Maternity	3	5.08
Oyin specialist hospital	2	3.39
Safepath Hospital	1	1.70
Shiloh Medical Centre & Maternity	2	3.39
St.Jacob's Mission Hospital	1	1.70
Sure Hope Clinic	1	1.70
Tobi Medical Centre	1	1.70
Unity Medical Center	1	1.70
TOTAL	59	100

Appendix XXIII: Pattern of bypassing in St. Marelo Hospital

Closest NHIS Facility	Frequency	Percentage
Anu oluwa hospital & maternity	8	27.59
Christhope Hospital	1	3.45
Cocoa Research Institute of Nigeria Health Centre	6	20.69
Fadebi Hospital	1	3.45
First life hospital	1	3.45
Hamdala Hospital	1	3.45
Lad Hospital	4	13.79
New day hospital	2	6.90
Oyin specialist hospital	1	3.45
Providence Polyclinic	1	3.45
Safepath Hospital	1	3.45
Sunnydale Hospital	1	3.45
Zenith Hospital	1	3.45
TOTAL	29	100

Appendix XXIV: Pattern of bypassing in St. Dominic Catholic Hospital

Closest NHIS Facility	Frequency	Percentage
Adeoto memorial hospital	1	2.70
Asvon Hospital	1	2.70
Camaria Specialist Hospital	1	2.70
Divine Favour Hospital	3	8.12
Fadebi Hospital	2	5.41
Ibadan Central Hospital	4	10.82
Mercyland hospital	2	5.41
New Bodija Hospital Group	5	13.51
Oluwaseyi Hospital	1	2.70
Oyin specialist hospital	5	13.51
St Dominic Catholic Hospital	7	18.92
St. Marelo Hospital	1	2.70
The Rock Medical Services	1	2.70
Welfare Hospital Ltd	3	8.11
TOTAL	37	100

Appendix XXV: Pattern of bypassing in Police Cottage Hospital

Closest NHIS Facility	Frequency	Percentage
Adeoto memorial hospital	1	2.44
Agugu Central Hospital	1	2.44
Ayofunmi hospital	1	2.44
Beta	1	2.44
Cocoa Research Institute of Nigeria Health Centre	1	2.44
Durojaiye Memorial Hospital	1	2.44
Eyiolawi (Iyolawi) Memorial Hospital	1	2.44
First life hospital	1	2.44
God's Knot Hospital	5	12.20
Jericho Hospital	2	4.88
Metropolitan Specialist Hospital	1	2.44
Oke Ado hospital	1	2.44
Oluwafemi Specialist Hospital	1	2.44
Oyin specialist hospital	1	2.44
Police cottage Hospital	2	4.88
Ramoth-Gilead Hospital	1	2.44
Saanu Memorial Hospital	1	2.44
Shiloh Medical Centre & Maternity	1	2.44
St Anne's Specialist Hospital	1	2.44
St Patrick's Hospital	4	9.76
Sure Hope Clinic	5	12.20
Unity Medical Center	4	9.76
Victory Medical Center	1	2.4
Welfare Hospital Ltd	2	4.88
TOTAL	41	100

Appendix XXVI: Pattern of bypassing in Lafia Hospital

Closest NHIS Facility	Frequency	Percentage
Alms Hospital	3	4.76
Baptist Cottage Hospital, Omi-Adio	6	9.52
Ebimaac Health Clinic	1	1.59
God's Knot Hospital	4	6.35
Lad Hospital	3	4.76
Lead City University	1	1.59
Moviv Specialist Hospital	1	1.59
Oluwafemi Specialist Hospital	3	4.76
Oluwaseun Clinic & Maternity	18	28.57
Oluwaseyi Hospital	7	11.11
Oni wumi Medical center	1	1.59
Safepath Hospital	1	1.59
Shalom Hospital	1	1.59
St.Jacob's Mission Hospital	7	11.11
Sunnydale Hospital	2	3.17
U.I Health Centre Jaja	1	1.59
Unity Medical Center	1	1.59
Welfare Hospital Ltd	1	1.59
Zenith Hospital	1	1.59
TOTAL	63	100

Appendix XXVII: Pattern of bypassing in Lad Hospital

Closest NHIS Facility	Frequency	Percentage
Alms Hospital	1	2.08
Cocoa Research Institute of Nigeria Health Centre	17	35.41
Delight Hospital & Fertility Centre	2	4.17
Lad Hospital	9	18.75
Lead City University	3	6.25
New day hospital	4	8.33
Oranyan Pry Health Center	1	2.08
Shalom Hospital	1	2.08
Shiloh Medical Centre & Maternity	7	14.58
St. Marelo Hospital	2	4.17
The Vine Hospital and Maternity Centre	1	2.08
TOTAL	48	100

Appendix XXVIII: Pattern of bypassing in Jericho Hospital

Closest NHIS Facility	Frequency	Percentage
Alafia Hospital	1	7.14
Durojaiye Memorial Hospital	1	7.14
Medical Practitioners services	1	7.14
Oluwaseun Clinic & Maternity	3	21.42
Police cottage Hospital	1	7.14
St Patrick's Hospital	1	7.14
St. Jacob's Mission Hospital	2	14.29
Unity Medical Center	4	28.57
TOTAL	14	100

Appendix XXIX: Pattern of bypassing in Immaculate Hospital

Closest NHIS Facility	Frequency	Percentage
Anu oluwa hospital & maternity	2	4.0
Ayofunmi hospital	1	2.0
Baptist Cottage Hospital, Omi-Adio	5	10.0
Beta	1	2.0
Ebimaac Health Clinic	1	2.0
First life hospital	2	4.0
Lad Hospital	1	2.0
Moviv Specialist Hospital	3	6.0
Oluwafemi Specialist Hospital	1	2.0
Oluwaseun Clinic & Maternity	17	34.0
Oluwaseyi Hospital	6	12.0
Shiloh Medical Centre & Maternity	2	4.0
St.Jacob's Mission Hospital	6	12.0
Zenith Hospital	2	4.0
TOTAL	50	100

Appendix XXX: Pattern of bypassing in Doctor's Polyclinic Hospital

Closest NHIS Facility	Frequency	Percentage
Christ Hope Hospital	3	20.0
College Medical Centre	1	6.67
Doctors Poly Clinic	5	33.3
Hamdala Hospital	1	6.67
Popular Hospital	1	6.67
Saanu Memorial Hospital	1	6.67
U.I Health Centre Jaja	3	20.0
TOTAL	15	100

Appendix XXXI: Pattern of bypassing in Chrisbo Hospital

Closest NHIS Facility	Frequency	Percentage
Adeoto memorial hospital	2	13.3
Banby hospital,akobo	2	13.3
Chrisbo Health Centre Akobo	2	13.3
Divine Favour Hospital	2	13.3
Evangel Med Center	1	6.6
Fadebi Hospital	1	6.6
Hamdala Hospital	1	6.6
J. Rapha Hospital	1	6.6
Kay Kay Hospital	1	6.6
NAF Medical Centre	2	13.3
TOTAL	15	100

Appendix XXXII: Average distance travelled by enrolees to health facilities

Serial No.	Hospital	Average distance travelled by enrolees by health facilities	
		Shortest distance (Km)	Longest distance (Km)
1.	Chrisbo	1.095	2.732
2.	Doctors Polyclinic	1.021	3.731
3.	Immaculate	1.141	7.617
4.	Jericho	0.763	3.805
5.	Lad	0.513	6.062
6.	Lafia	1.157	7.329
7.	Police Cottage	0.833	5.709
8.	St. Marelo Catholic	1.932	8.595
9.	St. Mary Catholic	1.752	7.234
10.	St. Dominic	0.978	6.156
11.	Teju	0.866	6.089
	Total average	1.096	5.914