

The spatial distribution of health establishments in Nigeria

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Abstract

The crisis in the health sector of Nigerian economy has been very obvious since the last decade. Unfortunately, no appreciable progress has been made in addressing the crisis and ensuring good health for the populace. One of the myriads of problems facing the Nigerian health system is limited access to health facilities. The distortions in the Nigerian health sector arising from both vertical and horizontal inequalities have negative implications for the health care delivery system and in meeting the health related Millennium Development Goals (MDGs). Since health is wealth, and like a vicious cycle, the crisis in the health sector will depress the economy and thereby causing further widening inequalities in the system. This paper, therefore, examines the spatial distribution of health establishments in Nigeria with a view to ascertaining whether there is any imbalance. Using the 2007 National Bureau of Statistics (NBS) survey of health establishment in Nigeria and the 2006 population census data, spatial statistical techniques were applied to the data. The Geographic Information System (GIS) software was used for data analysis. The results indicate that there are large inequalities in health care provision across the state, relative to the population size. The policy implication of this paper is that any effort aimed at improving the efficiency of the health care delivery system in Nigeria should ensure that health facilities are established relative to the structure of the population.

Key words: Nigerian economy, health care, health facilities, health policies and spatial distribution.

Introduction

Nigeria is the most populous country in Sub-Saharan Africa (SSA) and ranks

seven in the world. According to the 2006 national census, Nigeria has a population size of 140.4 million and an

annual growth rate of 3.2%. Therefore, an effective and efficient health system is very important in developing the abundant human capital. The popular phrase 'health is wealth' is a cliché. Poor health is indeed an obstacle to development, hence the need to break the vicious cycle of poverty and ill-health. The basic health indicators for Nigeria are not very encouraging which is evidence of the poor performance of the health system. For instance, life expectancy at birth for male and female are successively 53 and 54 years among the lowest in the world. (UNDP, 2008). Although, the 2008 Demographic and Health Survey (DHS) recorded slight improvement in maternal and child health indicators compared to the previous surveys, the statistics are still unacceptably high: an infant mortality rate of 75 per 1,000 live birth, an under five mortality rate of 157 per 1,000 and a maternal mortality rate of 545 per 100, 000 (NDHS 2008). One of the factors that has contributed to the poor performance of the Nigerian health system is limited access to health facilities. The worsening infrastructure of the health system in Nigeria needs to be investigated. Nigeria is one of the SSA countries characterised by poor development indicators. With a Gross national income per capita (PPP international \$) of 1,80, the probability of dying under age five is 138 per 1 000 live births and the probability of dying between 15 and 60 years for male and female is 377 and 365 per 1 000 population. This is against a background of low investments in health. The total expenditure on health per capita was 136 \$ in 2007 and the total expenditure on health as % of GDP in 2007 was

5.8% (Global Health Observatory, 2007). These statistics show that there is a major crisis in the Nigerian health system—hence something must be done to tackle these problems. To achieve this, expenditures on healthcare facilities by the government will have to be increased substantially.

No doubt, health for all citizens will be difficult to achieve as long as access to health facilities remain very limited. In particular, the attainment of the health related MDGs namely to reduce child mortality, improve maternal health and to combat HIV/AIDs, malaria and other diseases by 2015 may be an elusive agenda. This will lead to a vicious cycle of poverty, ill-health and widening inequalities in the economy. Succinctly put, a breakdown in the health care system will pose serious developmental challenges for Nigeria.

The major objective of this paper is to examine the spatial distribution of health establishments in Nigeria with a view to ascertaining whether there is any imbalance. It also highlights, from empirical literature, the factors that would influence the supply of and the demand for health services. Also, a brief review of the 2004 revised health policy is provided.

The remaining part of this paper is organized into four sections. Section two discusses the literature review, section three focuses on the methodology while section four analyzes and discusses the data. Finally, section five provides the summary and conclude the paper.

Health care crisis in Nigeria

The persistently low quality and inadequacy of health services provided in

public facilities has made the private sector an unavoidable choice for consumers of health care in Nigeria. Ineffective state regulation, however, has meant little control over the clinical activities of private sector providers while the price of medical services has, in recent years, grown faster than the average rate of inflation.

The result was the near-collapse of acute hospital services, characterized by frequent drug shortages, run-down physical structures and the influx of highly skilled but de-motivated medical specialists. Meanwhile the country's population has continued to grow at about 3% annually, placing additional strain on available resources.

A critique of health policy in Nigeria

The abysmal failure of the public health care system in Nigeria has attracted comments and criticisms at local and national levels. *Duru and Nwagbos (2007) opine that the provision of adequate health care services to the citizens, particularly those residing in rural areas has left much to be desired. In spite of media propaganda and the current health sector reforms by the government, the public health care system in Nigeria is still inefficient. It is therefore argued that the problems facing the public health care system in Nigeria could be traced to poor implementation of National Health Policy as well as other health-related policies and programmes. The lack of strategic leadership especially in the public sector is considered very vital (Nigeria Health Watch, 2011)*

Background literature review of the health system in Nigeria

Most of the literature on health and economic development emphasizes the need for improvement in the health system performance. In fact, some writers like Alabi and Obosi have described the health system of Nigerian economy to be in crisis. The writers noted lack of basic infrastructure such as an inefficient transport system (particularly with poor road network), epileptic power supply, inadequate water supply, weak legal and regulatory framework as some of the factors limiting access to health care. Access to quality health care should be seen as a fundamental human right because of the enormous benefit it will have on the individual and the economy. For instance, improved health has a direct link with productivity of labour force. Bloom and Canning (2000), Castro-Lea, et. al (2000), Hamoudi and Sachs (1999) and Barro (1996) are among a few of the authors who have established a link between health and economic growth of a nation. Although varying approaches and models have been proposed, there is a consensus of opinion by these authors on the importance of an efficient health care delivery system. For instance, Hamoudi and Sachs (1999) argue that there is a cycle of simultaneous impact between health and wealth. Similarly, Castro-Lea, et. al (2000) is of the opinion that health care is the most essential service in any effort to reduce poverty and achieve sustainable development. By the definition of the World Health Organization (WHO), good health is a state of complete physical, mental and social wellbe-

ing and not just an absence of disease or infirmity. This means that exposure to an unhealthy environment, stressful living and working conditions can cause ill-health and thereby reducing the productivity of labour. It can therefore be inferred that the “wealth of nations” depends on the “health of individuals in the nation”.

Another important aspect of literature worthy of discussion relates to the factors that can contribute to good or ill-health. There are various opinions on this. While some researchers argued that income distribution and other socially related factors (social determinant argument) are the key issues, others argue that the availability of government provided health services is the fundamental issue. Hence, the argument of OECD/WHO (2003) on the need to assist the government of poor countries with additional resources so as to improve their health care system. There are also studies, which have questioned the validity of both the “social determinants” argument and the assumption that increasing public expenditure on health is the most effective means of improving health and wealth. Kaseje (2006) analysing lessons from African experience, acknowledged that the gains of investing in child and maternal health have been eroded due to economic stagnation, rapid population growth, the spread of HIV/AIDs, and inadequate allocation of funds to the health sector. Therefore, it should be noted that increasing public expenditure on health is necessary but not sufficient to guarantee an effective health system. The distribution of health facilities in a manner that ensures adequate spread and equal access is also impor-

tant. Therefore, it is important to review those aspect of the literature on the determinant of demand and supply for health services.

The determinants of health care delivery in Nigeria

The demand side

The demand for health is a derived demand and this explains why access to health care has been justified on economic grounds. Gulliford, *et al.* (2003) is of the opinion that access to health care is of great concern, most especially, among the low income countries. Thus, access to health care is defined as the ability of citizens to visit doctor or receive health care when it matters most.

Literatures that have discussed factors influencing the demand for health-care are quite many. For instance, Millman (1993) emphasized the significance of “relevance, effectiveness and access” in the promotion of demand for healthcare services. In his opinion, this represents the right services backed with the best possible outcomes. These factors spell out the quality of services anticipated by the patients.

The persistent low quality and inadequacy of health services provided in public facilities has made the private sector an unavoidable choice for consumers of healthcare in Nigeria (Ogunbekun, *et. al.*, 1999). This supports the view of Millman (1993) that “barriers to access may result in delay in treatment, which can cause dissatisfaction among users and may lead to worsening clinical and patient outcomes.

According to Grossman (1972) health is a durable capital stock that produces an output of healthy time. He

further argues that individuals inherit an initial stock of health that depreciates with age and can be increased by investments. In his opinion, two factors are fundamentals to the demand for healthcare services. These include lack of education and understanding of health problems as well as lower priority being given to the health needs of the people especially the poor, the majority of whom are women. Akin et al. (1995) argued that “prices” and “quality of care” are two factors that are capable of influencing the demand for out-patient healthcare. Tim and Cooper (2004) identified quality, income of the consumers/patients, social, household or cultural characteristics, knowledge of healthcare available and education as important factors.

Understanding the factors influencing the health-seeking behaviour of poor people will be useful to policy makers. Although studies in this regard are increasing, a more detailed understanding of the country and district levels is also necessary for planning purposes. The OECD/WHO (2003) identified six factors that are capable of influencing the demand for healthcare services. These include lack of physical access, and inconvenient opening/closing hours—the hidden costs of seeking treatment, inadequate/broken equipment and dirty facilities, absenteeism/lack of staff, the behaviour of medical/health staff, the quality of services and poor availability of drugs. The hidden cost includes opportunity costs of time spent in travel, waiting for treatment, and buying drugs, as well as the costs of transport, drugs, and informal payments demanded by health workers and other staff.

Action, Jan Paul (1975) analyzed the demand for healthcare services from a different perspective by focusing on non-monetary factors. The study argued that the role of non-monetary factors in the determination of demand for medical care cannot be over-emphasized. One such important factor is the travel distance. This is an important factor in the Nigerian context given the inadequacy of the transportation system especially the poor road network. This affects both the effectiveness and efficiency of health service delivery.

The supply side

The factors influencing the supply of healthcare services show a somewhat different dimension when compared with the demand factors. Since the mid-1980s, the market for private health care has been growing steadily. Yet, the supply of healthcare services is still inadequate when compared to the demand-side. Ironically, most of the challenges confronting the supply side arise from manpower shortage and distributional imbalance. The phenomenon is quite unique in Nigeria. This is because a majority of health workers, especially the physicians, who work in the public sector, also provide services to the private sector.

Distributional imbalances

One of the important conceptual issues in assessing equity in health is the distributional imbalance. According to Baasbas and Casas, discussions about health equity make reasonable claims that there are inequalities in health status and access to care for different categories of people whether identified by social class (as measured by income wealth

and/ or formal education), gender, ethnicity and spatial distribution. Here, it is important to note that equality is not the same as equity. In some situations equality may not be equitable. But, there has to be an ethical, social or economic justification why a given distribution is considered inequitable. This leads to the argument about vertical versus horizontal equity. Horizontal equity is the allocation of equal or equivalent resources for equal needs, vertical equity is the allocation of different resources for different levels of need. The two concepts have different policy implications. While a universal programme on health might appeal to horizontal equity, a targeted programme for the poor would appeal to vertical equity. Vertical equity has a higher potential for re-distribution of resources and therefore faces more political obstacles.

In Nigeria, health establishments are concentrated in the industrial and commercial parts of the country, the distribution of the state general hospitals and local community dispensaries is structurally and geographically imbalanced. Usually, the rural dwellers suffer more in this regard. The private sectors whose primary motive is profit maximization operate more in the urban centres. This results in inequitable distribution in the provisioning of services.

Several literatures have contributed immensely to the study of factors influencing the supply of health care services. For instance, Adano (2008) argues that factors capable of influencing the supply of health-care services revolve around the available manpower. The author identified the following fac-

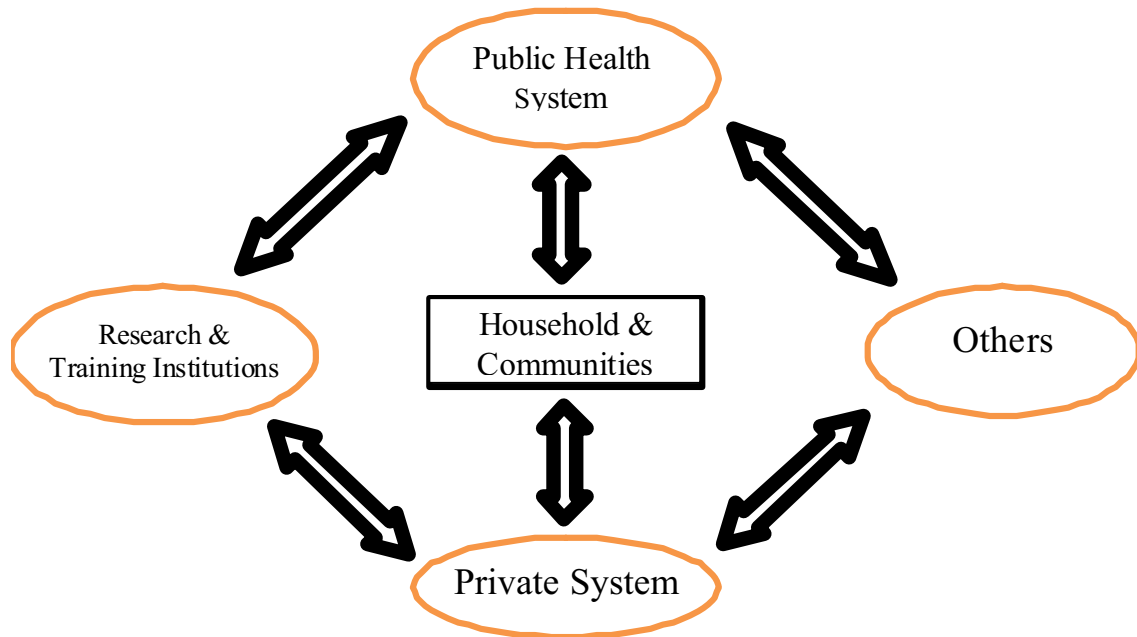
tors as influencing the availability of health manpower. They are the hiring plan of the health system, the recruitment and deployment procedure, the compensation packages. This leads to out migration of health care professionals with adverse consequences on the supply of health services. Marco, *et. al.* (2004) argued that the outflow of healthcare professionals has impact on the supply of healthcare services. The WHO (2004) focusing on the healthcare migrants cited three dimensions to the crises of human resources. They include: absolute shortage of health workers, mal-distribution of human resources, low productivity of human resources, in both cadre and mix as a whole. Other authors who argued that the role of healthcare workers cannot be over-emphasized in the supply of healthcare services include Dieleman, *et. al.* (2006). The author identified three categories of factors that can make or mar the efficient supply of healthcare services.

The desirable health system

Fuster *et. al.* (2007) advocates that an increasing consensus exists those stronger health systems are the key to achieving improved health outcomes. Travis *et. al.* (2004) shares this view and argued that a desirable health system should be able to address on a sustainable basis issues concerning financing, human resources, and service delivery. Their argument stimulated further interest and search for the qualities of a well functioning health system. This issue was resolved by the World Health Organization in its publication, "key components of a well functioning health system" which include service delivery, financing and human resource among

others. The inappropriate health system and human resource crisis call for partnership. Partnership for effective health action recognizes that there are multiple stakeholders with different interests, strenghts, capacities, resources, experiences and commitments but with similar concerns about

improvement in health status. A model for partnership has been since developed (Figure 1) which, identified as key stakeholders individuals, household, communities, the private sector, the public sector and research and training institutions.



Source: Tropical Institute of Community Health toolkit, 2002, cited in Kaseje (2006)

Figure 1 Model of partnership

According to Kaseje (2006), the critical aspect of strenghtening the health system lies with improved governance based on principles of decentralization, inclusive representation, defined constituency and mandate and democratic mechanisms of selection and accountability.

A brief review of health policy in Nigeria

Nigeria operates a 3-tier health care system. At the apex is the federal government who is responsible for the tertiary health care as well as formulating

policies. The goal of the national health policy is established as a comprehensive health care system based on primary health care that is promotive, protective, preventive, restorative and rehabilitative to every citizen of the country, within the available resources, so that individuals and communities are assured of productivity, social wellbeing and enjoyment of living” (FGN, 2004).

The Federal Ministry of Health is to develop and implement the policies and programs and undertake other actions to deliver effective, efficient, quality and affordable health services. In line with

the responsibility of formulating and implementing policies, the Federal Ministry of Health has quite a number of policies geared towards delivering effective, efficient, quality and affordable health services. These policies include: the Infant and Young Child Feeding Policy, The National Child Health Policy, Strategies for Strengthening Secondary Health Care, National Policy on Public-Private Partnerships for Health, Policy on National Health Management Information System, National Blood Policy, National Health Equipment Policy, Guidelines on Medical Equipment Management, Health Promotion Policy, An Integrated Disease Surveillance and Response (IDSR) policy.

For the purpose of this paper, the focus is on the Health Promotion Policy and Strategies for strengthening health care. The Health Promotion Policy is designed with a view to creating positive outcomes such as empowerment for health action and increased community involvement. This policy has its policy objective, which is clearly stated as “to strengthen the Health Promotion Capacity of the national health system to fulfil the National Health Policy objective of improving the health status of Nigerians and the achievement of the health – related Millennium Development Goals”. The thrust of this policy points to the fact that reform is inevitable. The strategies should include equitable distribution of health establishments and personnel between urban and rural areas, and among various sociocultural and economic groups.

Methodology

The data for the analysis is obtained

mainly from the 2007 National Bureau of Statistics (NBS) survey of health establishment in Nigeria and the 2006 population census data. Other sources include the 2008 Demographic and Health Survey and internet materials.

The descriptive statistics and basic spatial statistical methods including the Geographic Information System (GIS) were applied to the data. The data includes the number of hospitals in Nigeria by ownership structure and legal status as well as the number of population per physician.

Analysis and discussions

Descriptive analysis

This section analyses the distribution of hospitals across Nigeria. The 2007 survey of health establishments in Nigeria by the National Bureau of Statistics is analysed. The report indicates that Nigeria has a total of 17,038 hospitals which are located in different states of the country. Both the public and private sectors provide health services. Either due to better access or quality of service, a majority of the population prefer the private hospitals. The distribution of hospitals, by mode of ownership, indicates that the Local Government Areas have a total of 7580 which is 44.41 percent. Next are the private hospitals, which are 7373 in number and 43.20 percent of the total. The State government owns 8.11 percent, religious institutions and communities own 1.33 percent and 1.46 percent respectively. The federal government owns 151 hospitals which is only 0.88 percent of the total. The statistics is shown on table 1, that is, distribution of hospitals in Nigeria by mode of ownership. Constitutionally, the federal government, state

and local governments are empowered to own hospitals – teaching hospitals, general hospitals and clinic/dispensaries respectively. However, by virtue of the

policy on public–private partnership, other private and non-governmental organizations are empowered to own hospitals as well.

Table I Hospitals in Nigeria by Mode of Ownership

Zone	Number of LGAs	Federal Government	State Government	L.G.A	Private	Religious	Community	Total	Percentage Distribution
North-East	112	24	124	1,044	1,215	25	05	2,437	14.28
North-West	186	33	138	1,028	587	01	04	2,700	15.82
North Centre	121	20	161	2,054	1138	141	177	4,501	26.00
South-East	05	25	300	325	1,057	04	57	2,758	16.16
South-West	134	24	124	1,044	1,215	25	05	2,437	14.28
South-South	126	25	538	285	1,261	35	01	2,145	12.57
Nigeria	774	151	1,385	7,580	7,373	330	240	17,068	100.00
Percentage Distribution		0.88	8.11	44.41	43.20	1.03	1.46	100.00	

Source: National Bureau of Statistics (2007).

It should be noted that the federal government provides healthcare at the tertiary level. At the Tertiary Health Care (THC) level emphasis is on the training of high level health manpower, research and taking care of cases that could not be handled at the secondary and primary levels. Hence, the importance of an effective and efficient referral system.

The effectiveness of services measures the possible outcomes delivered given the taste of the consumers. An effective delivery of services would motivate the consumers to demand more, that is, improve their health seeking behaviour. Ironically, a weighted average of the effectiveness of services delivered by the formal public sector is

low when compared with the private sector. For example, the number of Primary Health Care Centres (PHCs) rose from 15,266 (2002) to 18,402 (2005), while the number of General and Teaching Hospitals remain marginally low. In terms of financial commitment, the budgetary allocation to the health sector is abysmally low. The health expenditure as a percentage of GDP in 2004 was 1.4 for public and 3.2 for private while the per capita was 53 US dollar at the purchasing power parity (UNDP, 2008). The neglect of the health sector arising from inadequate and poor management of funds has led to the decay of most of the hospital buildings and facilities. The dilapidated structures and obsolete equipment

impacts negatively on the effectiveness of the service delivery.

To ensure an effective and efficient service delivery, the role of the three tiers of government is clearly defined in the Nigerian Constitution. The hospital is one of the necessary structures in the delivery of health services.

Table 2 shows that there are forty-eight Teaching Hospitals across the country, representing only 0.28 percent of the hospitals available. There are one thousand, one hundred and six general hospitals. This represents approxi-

mately 6.48 percent of the total distribution. The maternity hospital constitutes 13.32 percent of the distribution. The number of available clinic is the highest with a total of eight thousand, three hundred and sixty clinics, representing 48.8 percent of the distribution.

Other hospitals in the distribution include the Psychiatric Hospital (0.12 percent) Orthopaedic Hospital (0.06 percent) and others, representing 30.75 percent of the entire distribution (See Table 2).

Table 2 Hospitals in Nigeria by Legal Status

Zone	Number of LGAs	Teaching Hospital	General Hospital	Maternity Hospital	Clinic	Psychiatric Hospital	Orthopedic Hospital	Others	Total	Percentage Distribution
North-East	112	10	105	526	1175	06	01	624	2,437	14.28
North-West	186	5	115	31	405	01	01	2,134	2,700	15.82
North Central	121	6	107	241	4,100	02	01	144	4,511	26.80
South-East	105	8	552	718	744	03	07	646	2,758	16.16
South-West	134	10	105	526	1175	06	01	624	2,437	14.28
South-South	126	1	152	143	761	03	00	1,077	2,145	12.57
Nigeria	774	48	1106	2,273	8,360	21	11	5,241	17,068	100.00
Percentage Distribution		0.28	6.48	13.32	48.8	0.12	0.06	30.75	100.00	

Source: National Bureau of Statistics (2007).

The distribution of health establishments is such that greater proportion falls under the domain of Local Government Authority (LGA) across the country. Unfortunately, the LGAs are least paid with respect to the share of budgetary allocation. The consequences of this is inadequate and poor maintenance of facilities. For instance, most of

the dispensaries across the countries have out lived their usefulness. The structures are weak and lack modern facilities. In fact, the primary Health Care System in Nigeria is performing below expectation. Apart from the hospital structures and facilities (that is, the carrying capacity) the human caring capacity is very low. The health man-

power is required in adequate number to improve on the human caring capac-

ity. The number of population per physician is shown in **Table 3**.

Table 3 Population per Physician/Nurses/Hospital Beds

	2000	2001	2002	2003	2004	2005
Population per Physician	4,520	NA	3,100	3,141	3,100	3,050
Population per Nursing Staff	20	NA	51	22	818	714
Population per Hospital Bed	1,611	NA	1,685	1,722	1,764	1,806

Source: National Bureau of Statistics (2008)

The number of health manpower available in Nigeria is not adequate to ensure an effective health system and this call for an urgent attention. From Table 3, it can be noted that the population per physician and population per nursing staff fall steadily between the years 2000 and 2005, while the population per hospital bed increases. The reason for the steady decline in the number of health personnel relative to the population is not unconnected to the poor remuneration. This has

resulted in frequent strikes and loss of lives that could have been avoided. Apart from poor remuneration, inadequate facilities such as diagnostic equipment and epileptic power supply could lead to job dis-satisfaction and consequently brain drain among the health personnel. A comparative analysis of the Nigerian situation with those of selected countries indicate that she is performing below the world average (**Table 4**).

Table 4 Physician per 1,000 People for Selected Countries

Country	Physician per 1,000 people	Year
China	1.51	2005
Cuba	5.01	2002
Egypt	0.54	2003
France	3.37	2004
Ireland	2.70	2004
Ghana	0.15	2004
Nigeria	0.28	2003
Russia	4.25	2003
Saudi Arabia	1.37	2004
South Africa	0.77	2004
United Kingdom	2.2	2003
United States of America	2.3	2002
World Average (weighted)	1.7	

Source: World Development Indicators Database.

In table 4, physicians are defined as graduates of any faculty or school of medicine who are working in the country in any medical field (practice, teaching and research). From Table 4 Cuba has the highest number of physician per 1,000 people. The world average is 1.7 and Nigeria has 0.28. This indicates a low human caring capacity for Nigeria.

Spatial analysis

This spatial dimension to the analysis is occasioned by recent recognition that spatial data analysis techniques are vital skills required by the government of

developing countries to meet the MDGs. It emphasizes the need for data to be made available at the most disaggregated level possible for easy use by planning authorities and communities. When the number of hospitals are analysed by state relative to the population size, it improves the understanding of distributional imbalance and hence access to health care. Using the GIS software, the data on health establishments in Nigeria were disaggregated. The results are presented in Figure 2 through 5.

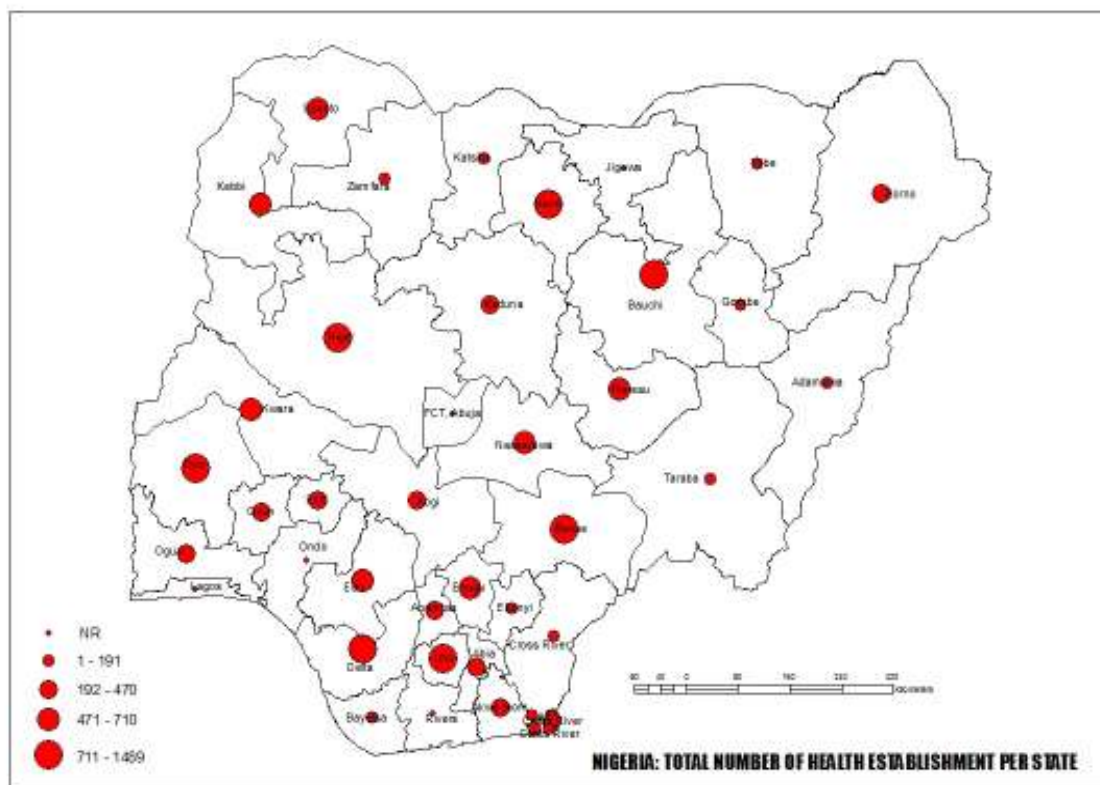


Figure 2 Nigerian total number of health establishment by state

From Figure 2, it can be observed that Bauchi, Benue, Delta, Imo, Niger, Kano and Oyo States respectively have number of hospitals between 711 and 1489. The States with a number of hospitals between 471 and 710 are Edo,

Enugu, Kebbi, Kwara, Plateau and Sokoto. Also, Anambra, Akwa Ibom, Borno, Ekiti, Kaduna, Kogi, Ogun and Osun states have between 192 and 470 hospitals respectively. Each of Bayelsa, Cross River, Katsina and Yobe have less

than 100 hospitals. Figures 3 and 4 show the ownership structure, which is more in the hands of the local government, private individuals and religious organization. More of the private initiatives are in the southern states.

Figure 5 indicates that there are more clinics than maternity and general hospitals. It could equally be observed, from Figure 5, that Niger State has the highest number of clinics.

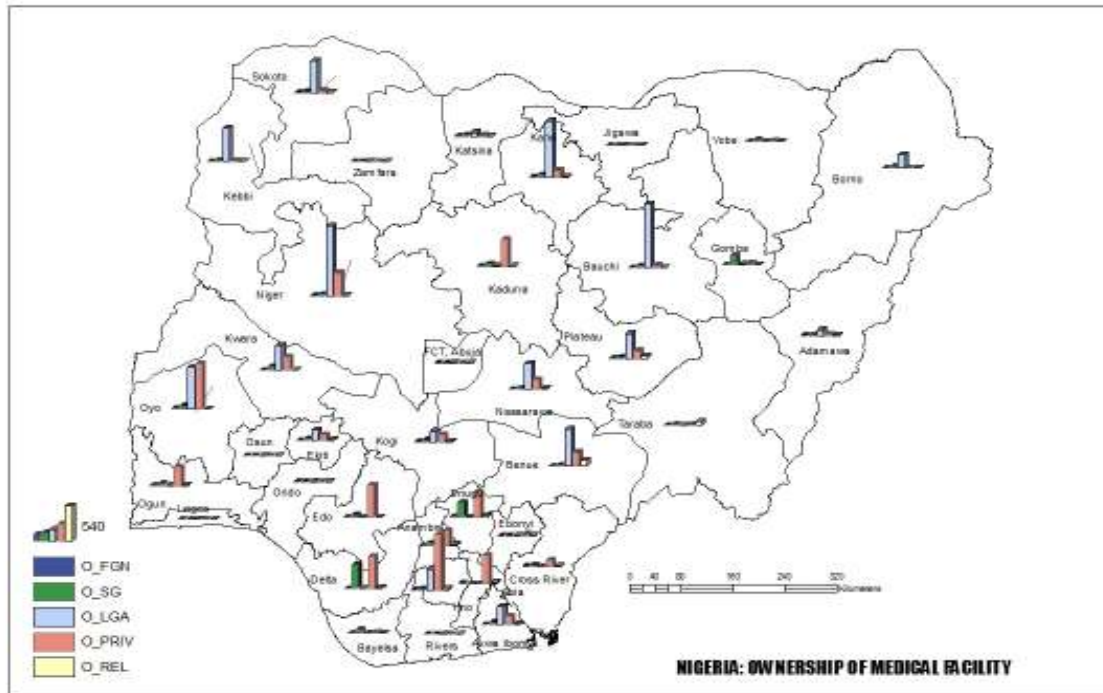


Figure 3 Nigerian ownership of medical facility by state

Summary and conclusions

The burden of global economic melt-down and poor governance has led to stagnant economic performance, corruption, inequalities, worsening poverty and ill-health. Against this background, this paper has discussed the Nigerian health system with emphasis on the spatial distribution of health establishments. The results indicate that health establishments across the states are imbalanced. It was noted that a greater proportion of the hospitals are privately owned by individuals and religious organizations. Across states, it was noted that clinics are more in number than any other type of health establishment. It was also noted that Niger State

has the highest number of clinics.

Apart from the sheer number, the paper emphasized that the functionality of these hospitals should be given important consideration. Such consideration should include the adequacy of the physical structures and equipment, availability of health manpower and service delivery in general. Comparing Nigeria with some selected countries, the paper noted that she has a very low human caring capacity given the high proportion of the population per health personnel. This implies that the demand for the services of the health workers exceeds their supply and this contributes to the crisis in the health system.

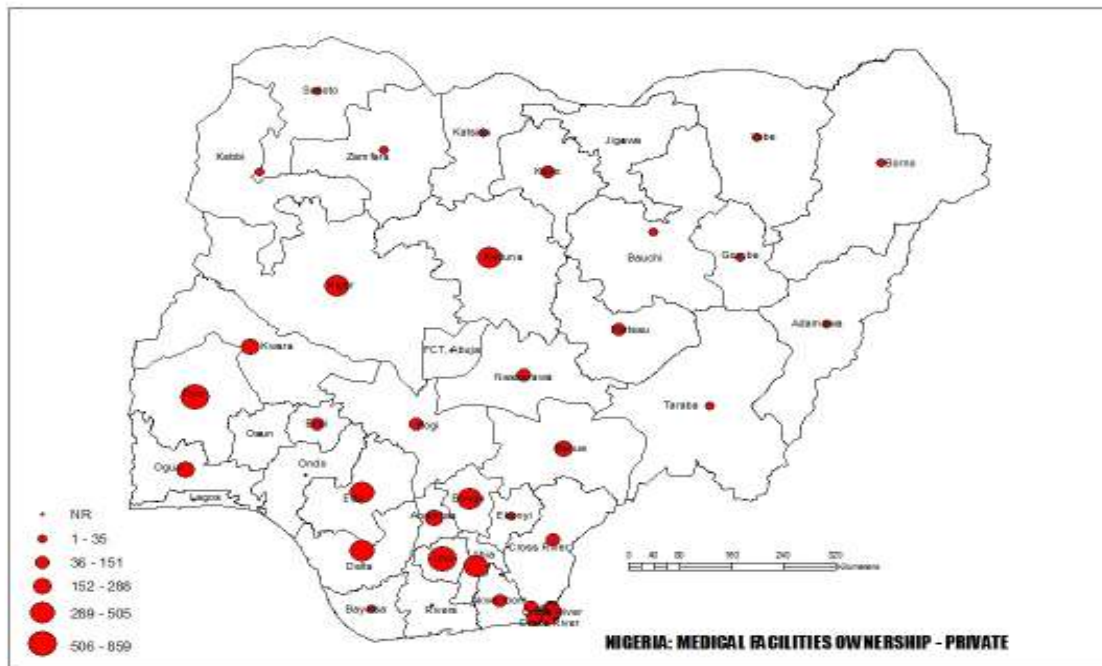


Figure 4 Nigerian ownership of private medical facility by state

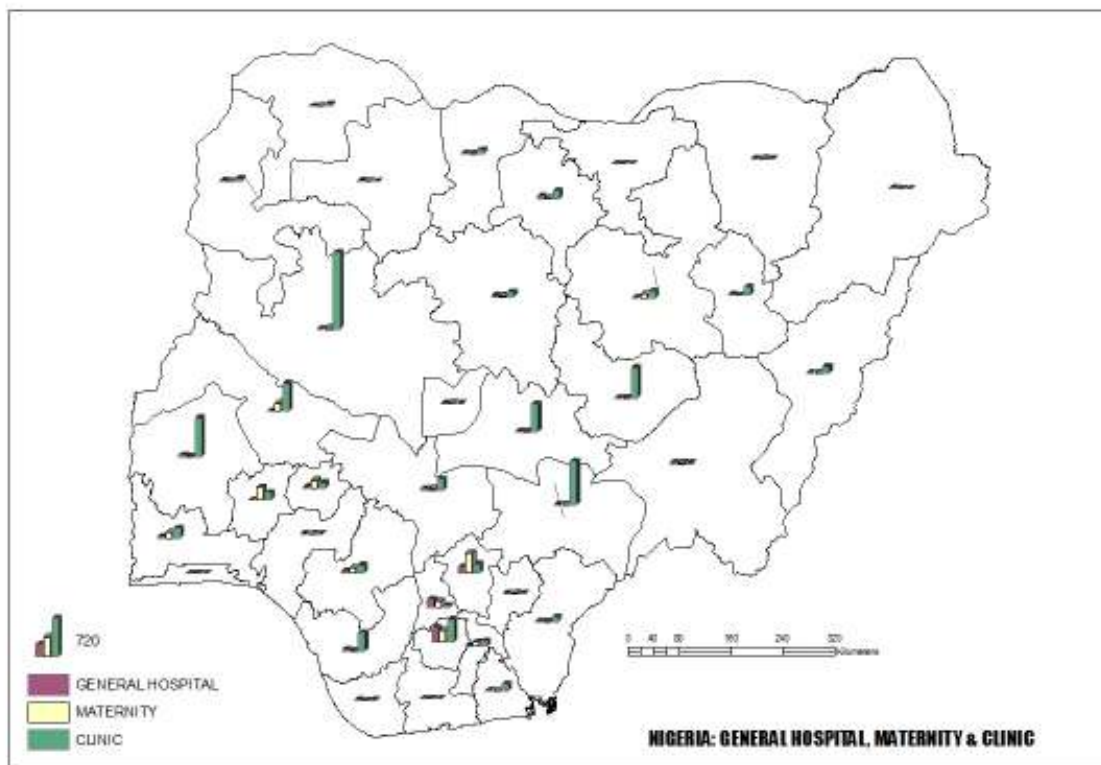


Figure 5 Nigerian general hospital, maternity and clinic by state

The paper also noted that a breakdown of the health system might pose the biggest challenge to the economy particularly with wealth creation. This is because to create wealth Nigeria needs healthy individuals. Hence, a strong economic justification to strengthen the health care system of the Nigerian economy. In conclusion, the crisis in the health sector will depress the economy and thereby cause further distortions which could lead to a vicious cycle of poverty, ill-health and low development.

To overcome the challenges that are facing the health sector in the attempt to provide quality health care services to Nigeria's fast growing population, the following are suggested.

- An integrated approach that will recognize the intersectoral linkages since health care is more than just medical care. Health care includes medical care, sanitation, safe water and nutrition among others.
- Adequate remuneration and effective utilisation of health manpower thereby stemming their out migration.
- Improved funding, proper management of the resources and improved maintenance culture.
- Regular power supply and an efficient transport system. Efficient transportation will improve the referral system which links the primary, secondary and tertiary levels of health care.
- The legal and regulatory framework should be strengthened. For instance, it should empower relevant medical associations and agencies for effective surveillance on quality and safety.
- To ensure better re-distribution of

health establishments and resources, vertical equity should be adopted. This is important because a mere increase in health establishments does not necessarily ensure an increase in health coverage.

- Government's commitment in terms of public expenditure to health as a percentage of GDP should be increased.
- Improved partnership and synergy among the stakeholders namely the public, private, household and communities, research and training institutions etc.

References

- Acton, Jan Paul (1975): "Non-monetary Factors in the Demand for Medical Services: Some Empirical Evidence". *Journal of Political Economy*, University of Chicago Press, Vol. 83 (3), pp 505 – 614.
- Adano, Ummuro (2008) "The Health Worker Recruitment and Deployment Process in Kenya: An Emergency Hiring Program". *Management Sciences for Health*, Cambridge M. A., U.S.A. in *Human Resources for Health* Vol. 8:1.
- Akin John, Guilkey David and Hazel Denton (1995): "Quality of Services and Demand for Healthcare in Nigeria: A Multinational Probit Estimation". *Social Science and Medicine*, Elsevier, Vol. 40 (11), 1527 – 37.
- Alabi, Adebayo "Crisis of Health Care System", <http://www.humanrights.de/doc-en/archiv/n/nigeria/book-t-alabi.htm>.
- Baasbas, Alexander and Casas Juan Antonio, 'Assessing Equity in Health: Conceptual Criteria', <http://>

- www.pahro.org/english/dbi/Op08_02.pdf.
- Barro, Robert (1996) "Three Models of Health and Economic Growth. in Andres, et. Al. (2005) "Empirical Evidence of the Impact of Health on Economic Growth". Issues in Political Economy, Vol. 14 August, 2005.
- Berta R. and Currais L. (2003) "The Effect of Health Investment on Growth: A Causality Analysis". International Advances in Economic Research, (4), Pp. 312 – 323.
- Bloom, David E. and David Canning (2000): "The Health and Wealth of Nations". Science 287:1,207 – . In Adres, et. al. (2005).
- Dan Kaseje (2006) "Health Care in Africa: Challenges, Opportunities and an Emerging Model for Improvement". Paper presented at the Woodrow Wilson International Centre for Scholars, Nov. 2.
- Dieleman Marjolein, Jorren Toonon, Hama Dassalin Toure and Tim Martineau (2006) "The Match Between Motivation and Performance Management of Health Sector Workers in Mali", Human Resources for Health, 4:02.
- Duru E J and Nwagbos C I. (2007), "The problems and prospects public care development in Nigeria's local government system." Global Journal of Social Sciences Vol. 6
- Federal Republic of Nigeria (2004), Revised National Health Policy, Ministry of Health, Abuja, Nigeria.
- Federal Republic of Nigeria (2006), The Official Gazette of the 2006 Population Census Result, Abuja, Nigeria..
- Fuster Valentin, Janet Voute, Marlyn Hunn and Sidney C. Smith (2007), Low Priority of Cardiovascular and Chronic Diseases on the Global Health Agenda: A Cause for Concern", Journal of American Heart Association, Volume 116
- Global Health Observatory, (2006) <http://www.who.int/countries/nga/en/>
- Grossman, Michael (1972) "On the Concept of Health Capital and the Demand for Health". Journal of Political Economy, University of Chicago Press, Vol. 80 (2), pp. 223 – 55
- Gulliford M. Jose Figureora – Munoz, and Myfanuy Morgan (2003) "Meaning of Access In Health Care". In "Access to Health Care" edited by Martin Gulliford and Myfanwy Morgan (2003) Routledge Taylor and Francis, London.
- Hamoudi, Amar and Jeffery Sachs (1999), Economic Consequences of Health Status, A Review of Evidence. CID working paper, Issue no 30.
- Marko Vujicis, Pascal Zurn, Knassoum Siallo, Orvil Adams and Mario Dal Poz (2004), The Role of Wages in the Migration of Health care Professionals from Developing Countries. Human Resources for Health, Volume 2, number 3.
- Millman, M. L. (1993) "Access to Health Care in America". Washington, D. C.: Institute of Medicine, National Academy Press.
- National Population Commission (2008), The Nigeria Demographic and Health Survey, Abuja, Nigeria.
- Nigeria Health Watch, (2011) <http://www.nigeriahealthwatch.com>
- Obosi, Jide, 'Health care crisis in Nigeria. <http://>

- www.jideobosi.blogspot.com/2007/06/health-care-crisis-in-nigeria-when-did.html.
- OECD/WHO (2003) "DAC Guidelines and Reference Series: Poverty and Health". OECD Publication, France.
- Ogunbekun I, Ogunbekun A, and Orobato, N (2004), "Private health care in Nigeria: walking the tight rope", *Health Policy Plan*, Jun Vol. 14, no 2 pp 174-181.
- Ogunbekun Ibukun, et al., (2004), *Private healthcare in Nigeria: Walking the Tightrope*. *Health Policy and Planning* 14(2): 174–181, Oxford University Press.
- Sachs, J. D. and McArthur J. W. (2005) "The Millennium Project: A Plan for Meeting the Millennium Development Goals". *Lancet* Vol. 365: 347 – 353.
- Travis, P., Bennetts. S, Haines A., Pang, P., Bhutta Z., Hyder, A. A., and Evans. T. (2004): "Overcoming Health – Systems Constraints to Achieve the Millennium Development Goals". *Lancet*: Vol. 364L 100 – 106.
- World Bank (2005) *World Development Indicators*.
- World Health Organization (2004), "Health Workforce Challenges: Lessons from Country Experiences". Paper for the High – Level Forum on the Health MDGs, Abuja (December). Available at: <http://www.hcfhealthmdgs.org/Documents/HealthWorkforceChallenges-find.pdf>.
- World Health Organization. <http://apps.who.int/aboutwho/en/definitio.html>