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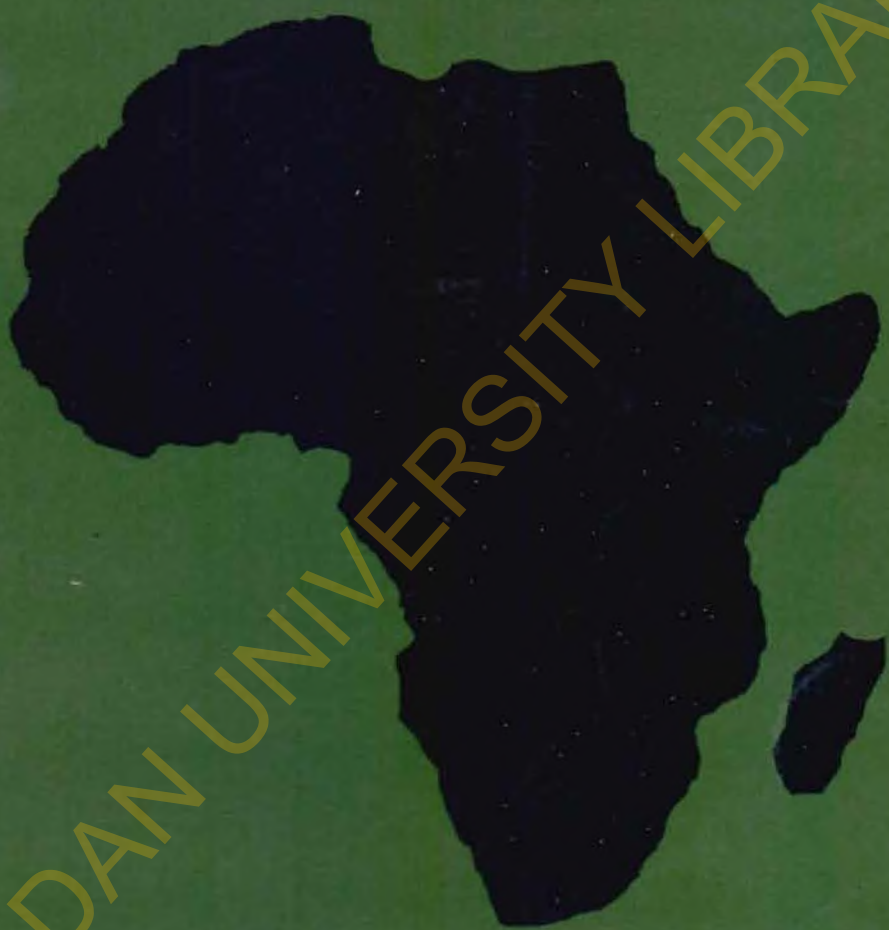

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National Health Accounts Estimation: Lessons from the Nigerian experience

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Abstract

Objective: This paper seeks to summarize the estimation of two rounds of Nigeria's National Health Accounts (NHA), 1998-2002 and 2003-2005 and draw some lessons on the NHA methodology and health financing policy challenges towards enhancing government stewardship role in the health sector.

Method: The paper uses the results of the two rounds of NHA estimations for Nigeria as basis for analysis. In each round of estimation, three matrices were estimated. Additional three matrices of sub-National Health Accounts were also estimated for 17states in the second round.

Results: With Nigeria's per capita Total Health Expenditure (THE) increasing from US$9.39 in 1998 to US$55.04 in 2005, the THE represent about 5% of GDP. The households accounted for around 68.6% of THE, while government shoulders about 25%. Major lessons learnt relate to skewed spending, challenges of recordkeeping and data collection at the federal and state levels, and commitment of government and other stakeholders in ensuring institutionalized procedures for collection, reporting, and retrieval of health financing data.

Conclusion: Though NHA results indicate increase in spending on health over time, there is a very high burden on households. Besides, there are institutional challenges inhibiting the estimation process. There is need for government to lessen burden on households to improve its stewardship by increasing its contribution. The institutional capacity need to be strengthen to collect and analyse health expenditure data and interpret results in terms of their policy implication, while government takes ownership of the process to ensure the institutionalization and sustainability of the estimation process.

Keywords: *Health expenditure, National Health Accounts, Health financing, Nigeria*

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Résumé

Objectif: Le présent document vise à résumer l'estimation de deux séries de Comptes Nationaux de la Santé au Nigéria (CNS) : 1998-2002 et 2003-2005 ; d'en tirer des leçons sur la méthodologie des CNS et des défis concernant la politique de financement, et à renforcer le rôle de l'administration générale dans le secteur de la santé.

Méthode: L'étude fait usage des résultats des deux séries d'estimations CNS pour le Nigeria en tant qu'élément de base pour l'analyse. À chaque tour de l'estimation, trois « matrices » ont été estimées. Trois autres « matrices » de comptes sous-nationaux du domaine de la santé ont également été estimées pour 17 états au second tour.

Résultats: Au Nigeria, avec les Dépenses Totales par habitant pour la santé (DTH) augmentent de $ 9,39 en 1998 à $ 55,04 en 2005, elles représentent environ 5 % du PIB. Les ménages représentaient environ 68,6% du DTH tandis que le gouvernement représente environ 25%. Les principales leçons portent sur les dépenses asymétrique, les défis de la tenue des registres et de la collecte des données aux niveaux fédéral et des États, et l'engagement du gouvernement et d'autres acteurs intervenants pour assurer des procédures institutionnalisées pour la collecte, les reportages et la récupération des données sur le financement du secteur de la santé.

Conclusion: Bien que les résultats des CNS indiquent l'augmentation des dépenses pour la santé au fil du temps, il y a un très lourd fardeau sur les ménages. En outre, il y a des défis institutionnels inhibant le processus d'estimation. Il y a la nécessité pour le gouvernement de réduire le fardeau sur les ménages pour améliorer sa gestion en augmentant sa contribution. Les capacités institutionnelles doivent être renforcées pour recueillir et analyser les données sur les dépenses pour le secteur de la santé et d'interpréter les résultats en fonction de leur implication politique, tandis que le gouvernement s'approprie le processus pour assurer l'institutionnalisation et la pérennité du processus d'estimation.

Introduction

Nigeria is the most populous country in Africa and more than 54% of her 150 million people have been estimated as living in poverty [1]. Incidentally, the epidemiology profile of the country reflects a high prevalence of communicable diseases with its attendant high child and maternal mortality [2]. This profile is shaped by the structure of the country's

health system. Nigeria's health system is composed of and operated through a network of primary, secondary, and tertiary level facilities. Being a federal country, all the three tiers of government (Federal, State, and Local) are involved in the provision of health care, with their effort complemented by private (for-profit and not-for-profit) organizations. Hence local governments shoulder the major responsibility at the primary level, providing primary health care (PHC) services with active support from state governments. As the entry point of the health care system, the PHC provides curative, preventive, and promotion health services to the population.

The secondary health care level is mainly the responsibility of the state governments and provides specialized services to patients referred from the PHC level through outpatient and in-patient services in hospitals for general health care services. The tertiary health care level provides referral services to both primary and secondary levels of the health care delivery system. Health care services at this level are provided by teaching hospitals and specialist hospitals, covering general and specific diseases. Private providers, both non-profit and for-profit, constitute a significant and growing part of the Nigerian health sector. The activities and operations of the private health providers also cut across the three levels but featuring more prominently at the secondary level, majority of which are located in urban centres. Although there had been no consistent policy framework for health system in Nigeria, the National House of Assembly had just passed the first national health law for the country although it is yet to be signed into law by the President. Beyond policy, the health sector also faces enormous financing challenges. It is thus important to understand the financial profile of the health sector as many studies have argued that there is a positive relationship between adequate funding and health sector performance [3].

National Health Accounts (NHA) is an international established method of tracking the sources and uses of funds in the health sector of a country [4]. It provides a systematic, comprehensive and consistent monitoring of resource flows in a country's health system, using standardized tools of measurement to trace all resource flows within the health system over time [5]. It allows an analysis of the changes in the level and source of all public and private health care expenditures at the aggregate national level, as well as changes in public expenditures that affect allocative efficiency by the central and aggregate local levels of government [6]. Health expenditure relates to any spending designed to restore, improve and maintain the health of individuals or the nation [7,8]. There are three main groups of active participants in the health accounts space of any nation. The first group consists of those stakeholders or entities that mobilize health funds and are known as *financing sources* (or simply, *sources*). This group is made up of entities like government at all levels; households, firms, and development partners or international donor agencies. The second group referred to as *financing agents* consists of those entities and stakeholders that allocate health funds or pay directly to health care providers for the services, such as the Ministry of Health and other government agencies that spend significantly on health; out-of pocket (OOP) health expenditure of households; health insurance companies; health departments of firms; and non-government organizations (NGOs). The third group is the group of providers of health services, simply called *providers* or *uses*. In this group are health care providers at the primary, secondary and tertiary levels (in the public and private sectors including the not-for-profit private sector like the faith-based missions and NGOs); chemists/ pharmacies; traditional health care providers; and others consisting of administration/management of health and healthcare, training of health personnel, health research etc.

National Health Accounts (NHA) results have often found relevance in many of the countries where they had been estimated through the strengthening of the health system [9]. Like many other countries, NHA has been estimated for Nigeria as a means of strengthening the nation's health system. The estimation of NHA in Nigeria started as an initiative of some local researchers who sought external funding support when the internal sources were not available. Presently there have been two rounds of estimation of NHA in Nigeria. The first round produced estimates for five years viz. 1998-2002 and the second round of estimation provides estimates for three years, 2003-2005 [10, 11]. The experience of the two rounds has been profound and the main objective of this paper is to detail the experience of the NHA process in Nigeria and the lessons learnt from the experience. This will shape the next round of NHA estimation in the country as well as provide implications for other sub-Saharan African countries in the same stage of NHA estimation. This paper sets out the extent to which the past NHA approaches can begin to address some of health financing policy issues, draw lessons learnt from past estimates and suggest how the lessons can improve future estimates of National Health Accounts (NHA) in Nigeria.

Methods

The two rounds of NHA estimations followed the approach in the standard internationally agreed NHA methods. Health expenditure is defined as all expenditures for activities whose primary purpose is to restore, improve and maintain health for the nation and for individuals during a defined period of time, usually one year. The main sources of funds for health expenditures are government, private sector and the rest of the world. While the government funds comprise health funds of all the different tiers of government, private funds compose of those of household, employer, household funds and non-governmental organisations (NGOs).

NHA methodology provides estimates of health expenditures which are displayed in matrix or tabular forms. Three of such are estimated in the studies reported in this paper.

- Financing Sources (FS) × Financing Agents (HF);
- Financing Agents (HF) × Health Providers (HP);
- Financing Agents (HF) × Health Functions (HC);

The Financing Sources are those entities that provide the fund for health expenditure. The Financing Agents are those that manage health funds received from financing sources. Health providers are the different types of health facilities involved in delivery of health care, including orthodox and traditional health care providers. Health functions are the categories of health care services provided, such as preventive, curative, and rehabilitative care. Since NHA tracks the flow of funding to the health sector of the country, data are collected from sources, the financing agents, the spending at the facilities level, as well as the categories expenditures on which the available funds were expended. Thus data were collected from government, households, and development partners. To capture estimates by health providers and functions information on expenditure was obtained from both public and private health facilities, as well as traditional health care providers.

While the three matrices were produced in the two rounds of estimation for the whole country, the second round also include the estimation of the matrices also for 17 out of the 36 states of the country where we have complete data during the time available for the research. The data required for NHA estimation are both government and private sector data and as such, both primary and secondary data were collected for estimating expenditure within the NHA boundary. Three types of surveys were utilised for data collection. They include household survey for household responses, enterprises surveys for firms spending funds on health including NGOs and health insurance companies. In the case of the household level data, there was no consistent national household survey that could be used as at the time of the first round of estimation. The estimation however used General Household Survey of 2004 to estimate per capita household health expenditure before applying the results of the Benue State Household Health Expenditure Survey to distribute the expenditure by providers [12]. This assumed that Benue State is representative of Nigeria which is a major limitation of that round of estimation. For the second round, the 2004 National Living Standard Survey (NLSS) conducted by the National Bureau of Statistics was utilised. The survey covered the whole country with information on more than 90,000 individuals.

In the case of government data, administrative data were collected from Federal, State and Local Government Ministries and establishments in the seven selected states of the country and Federal Capital Territory (FCT) in the first round. Nigeria is divided into six geopolitical zones and therefore one state per geopolitical zone of the country was purposively sampled. The criteria for choosing the state from each zone were based on states with former regional headquarters as capitals (i.e. Enugu (South East), Kaduna (North West), Oyo (South West)), and religious balance consideration (i.e. Akwa-Ibom (South-South), Bauchi (North-East), and Benue (North-Central)). In addition, Lagos State and the Federal Capital Territory were selected as self-representative samples, being the commercial and administrative capitals of the country, respectively. In the second round, institutionalization of the process was initiated by incorporating the officials of the state ministries of health in the data collection process, which allowed for collection of data on government expenditure from 17 states out of 36 states in Nigeria. Apart from household data obtained from NLSS, other data used were collected from enterprises survey, and survey of the development partners and the NGOs in the country at their regional and federal offices levels.

Results of NHA estimation in Nigeria

The results of the NHA estimations from Soyibo (2005) and Soyibo *et al.* (2011) revealed that Total Health Expenditure (THE) has increased over the years. The estimates show that the average total health expenditure in Nigeria was an annual average of 217 Billion Naira (approximately US$1.4billion, and US$10per capita) for the 1998-2002 as against 809

Table 1: Health Financing Sources by Financing Agents (Annual Average for 1998-2002) ₦ million

	Federal Govts.	State Govts.	Local Govts.	Households	Firms	Develop. Partners[1]	TOTAL
FMOH[2]	26,892.63	-	-	-	-	14,207.36	41,099.99
SMOHs[3]	-	13,323.65	-	-	-	2,214.00	15.537.65
LGA Health Departments[4]	-	132.07	4,402.44	-	-	2,249.42	6,783.93
Out-of-Pocket[5]	-	-	-	139,714.90	2,701.91	-	142,416.81
Health Insurance	-	-	-	-	7,924.77	-	7,924.77
NGOs	-	-	-	-	-	3,676.23	3,676.23
Total	26,892.63	13,455.72	4,402.44	139,714.90	10,626.69	22,347.01	217,439.39

Computed from Soyibo, 2005
[1] *Development partners are foreign donor agencies supporting health care activities in the country.*
[2] *FMOH: Federal Ministry of Health*
[3] *SMOHs: States Ministries of Health*
[4] *Equivalent of Ministry of Health at the Local Government level*
[5] *The payment made directly by the household from their personal resources*

Table 2: Health Financing Sources by Financing Agents (Annual Average for 2003-2005) ₦ million

	Federal Govts.	State Govts.	Local Govts.	Households	Firms	Develop. Partners	Total
FMOH	55,139.95	-	-	-	-	6,579.31	61,718.27
Other Fed. Agencies	41,665.64	-	-	-	-	589.52	42,255.16
SMOHs	-	23,090.89	-	-	-	14,397.96	37,488.85
HMBs[1]	-	30,994.45	-	-	-	-	30,994.45
LGA Health Depts.	-	6,615.28	36,117.46	-	-	11,109.17	53,841.91
Out-of Pocket	814.04	554.24	363.72	554,550.25	1,704.07	-	557,986.33
Firm Health Depts	-	-	-	-	5,419.97	-	5,419.97
Health Insurance	-	-	-	363.16	18,230.13		18,593.30
NGOs	-	-	-	-	-	2,178.98	726.33
Total	97,618.64	61,254.86	36,481.18	554,913.41	25,354.18	33,402.28	809,024.56

Computed from Soyibo et al., 2009
[1] *HMBs: Hospital Management Boards*

Table 3: Total Health Expenditure (THE) per capita in US$ by Source

	1998	1999	2000	2001	2002	2003	2004	2005
Government sources	1.40	1.74	2.28	3.83	3.21	7.10	11.86	14.32
Donor sources	1.23	1.45	1.97	0.78	0.91	1.33	0.54	0.53
Private sources	6.76	7.27	7.90	9.45	10.74	29.57	32.54	40.18
Per capita THE	9.39	10.45	12.15	14.07	14.87	38.01	44.94	55.04

Computed from Soyibo 2005 and Soyibo et al, 2009.

Billion Naira (approximately US$5.22billion, and US$45.01 per capita) for the 2003-2005 estimation.

Presented in Tables 1 and 2 are the annual average values of NHA matrix of Financing Sources (FS) by Financing Agents (HF) for years 1998-2002,

and 2003-2005, respectively. The matrix shows interrelationship between the various sources of health funds and the financing agents for the health funds. The tables further reveal that health funds were sourced from both government and private sources. Households constitute the main source of health financing in Nigeria accounting for more than two thirds of all funds spent on health.

Figure 1 presents a summary of results from the two rounds of estimations and reveals that the funds coming from household and government increased between the two periods with increases from 20.58% and 64.25% to 24.2% and 68.6% by government and households respectively.

The distribution of total health expenditure by financing agents is presented in Table 4. While the per capita THE for Nigeria has consistently increased from $9.36 in 1998 to $55.04 in 2005, the household out-of-pocket (OOP) payment on health remains the major component in Nigeria. OOP, which are payments made directly by the household, during the period of analysis was more than two thirds of all health expenditure.

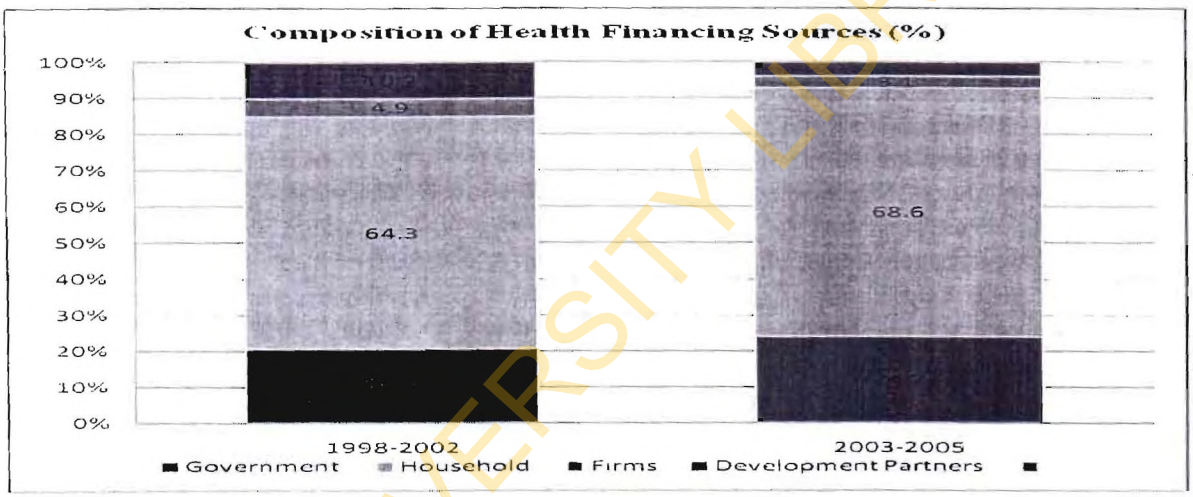

Fig. 1: Composition of Health Financing Sources (%)

Table 4: Total Health Expenditure (THE) per capita in US$ by Financing agent

	1998	1999	2000	2001	2002	2003	2004	2005
Govt. Financing Agents	2.45	3.04	4.07	4.41	3.80	8.58	13.79	16.21
Out-of Pocket	6.59	7.02	7.49	8.82	10.01	28.29	29.70	37.20
Health Insurance	0.17	0.25	0.41	0.63	0.74	0.90	1.07	1.20
Others Incl. firms and NGOs	0.18	0.14	0.19	0.20	0.32	0.24	0.38	0.43
Per capital THE	9.39	10.45	12.15	14.07	14.87	38.01	44.94	55.04

Computed from Soyibo, 2005 and Soyibo et al, 2009

Table 3 shows that per capita THE increased from US$9.39 in 1998 to US$55.04 in 2005. Most of the financing comes from the private sector with households contributing the largest share of average of 79.6% over 1998-2002, which reduced to 77.8% in the period 2003-2005. Thus government share increased from 20.6% to 24.2% over the same period.

Table 5 presents the percentage allocation of health expenditure by functions. Health system in Nigeria is still largely curative with about 74 percent of all health expenditure spent on curative. The least considered is the rehabilitative care which accounts for less than 1% of total health expenditure.

Table 5: Proportion of Total Health Expenditure (THE) By Functions (percentage)

	1998	1999	2000	2001	2002	2003	2004	2005
Public Health Preventive	0.50	0.20	0.31	0.18	0.20	14.39	9.99	13.87
Curative Care	72.33	70.52	66.24	68.49	73.57	74.03	74.81	73.95
Rehabilitative Care	0.22	4.82	1.04	0.87	1.02	0.22	2.96	0.06
Training and Research and Others including administration	26.95	24.46	32.41	30.46	25.22	11.35	12.25	12.12

Computed from Soyibo, 2005 and Soyibo et al, 2009.

Discussion and lessons learnt from NHA estimation in Nigeria

In the second round, there was an improvement in the sample size for government health expenditure as data was collected from 17 states (out of 36 states in Nigeria) as against the seven states used for the 1998-2002 estimation. This was as a result of more funding for the project as well as better appreciation of NHA data by the government officials as a result of some measures of institutionalization. We believe that the quality and credibility of NLSS data suggests that the latest estimates are better than the results from the first round of estimation. As a result of improved access to data and institutionalization of the estimation process in the second round, the estimates for more entities, such as other federal agencies, Hospital Management Boards, firm health departments, were made possible.

The Nigerian annual average of US$5.22billion in the period 2003-2005 which is more than 5% of GDP is comparable with some African countries like Kenya, Ethiopia, and Ghana, with THE of 5.4%, 4.5%, and 4.8% of GDP, respectively. However, this is far behind that of Namibia, with THE accounting for 8.3% of GDP. Although the private share of THE declined from 79.6% in 1998-2002 to 77.8% in 2003-2005, it did not reduce the implication of higher risk of catastrophic spending by the households as their share increased from 64.3% to 68.6%. While government health spending has been on the increase in Nigeria, analysis of budget implementation reveals that federal government expenditure on health was less than 10% of the total government expenditure over the period covered. The increase in the proportion of funds through government financing agents from $2.45 to $16.21 per capita over the period was mainly accounted for by donor funds passing through government agents. Though Nigeria THE satisfies the recommendation of the Commission on Macroeconomics and Health, which recommended a spending of US$ 30-40 per capita to deliver a basic package of health services in low-income countries, it is however far below the Abuja target, which committed governments in Africa to allocate at least 15% of their national budget on health.

The last two estimation processes have shaped our understanding of the challenges inherent in the Nigerian system especially as it affects accessing health financing information from the different stakeholders. The exercise provides some lessons for future NHA activities. First, funding sources for NHA estimation process is a key issue for ownership and sustainability of the NHA in the country. In the last two sets of estimates, the first was funded by development partners and donors while the second was funded by the Federal Ministry of Health (FMOH) with support on institutionalization from development partners. Sustainability of the funding should involve all the stakeholders including government at all levels, private sector and development partners. This is the only way to ensure buy-in and the willingness to supply information needed for the estimation of NHA.

The collection of government data is also problematic. This is based on the federal nature of the country. Nigeria is a federation with three tiers of government including 36 States and 774 local governments. Health funds are appropriated at the different levels of government with National House of Assembly appropriating federal government health spending and state houses of assembly appropriate state funds etc. This means that information is to be collected at all the levels of government for completeness. In the first rounds, data from a sample of seven state governments were utilized due to fund limitations and other logistic problem of collecting government data. The NHA steering committee in order to solve the problem identified focal persons at each states of the country. However, because they are not answerable to the FMOH, focal persons in charge of NHA are changed at will which does not help in building a critical mass of officers who can garner enough experience quickly and continue on

the job for some time. Eventually government data were collected from 17 out of the 36 states of the country. The idea was that when focal persons from each state are used for data collection, it will ensure buy-in by the States in the NHA process. Incidentally, few Ministries of Health appreciate the results of the NHA as many State Ministries and departments and agencies seem to view the NHA as an audit tool which makes it difficult for them to fund and/or cooperate fully in the process.

There were difficulties in accessing health expenditure from development partners. Although the best approach would have been to collect the information from the head offices of the development partners and international NGOs so as to be sure of the correctness or consistency of the data, our experience was that it was difficult to access the information in this way. The other approach would have been to go through the National Planning Commission (NPC). This is because NPC is the agency of government in charge of donor coordination and every development partner /donor in the country has to submit returns to NPC every year concerning how much was spent in the country. Our experience was that it is either that NPC did not request for the full information or the development partners did not submit the returns.

In the case of household data, there was no national household survey to be used for the 1998-2002 estimates. Hence data on the survey for only one state was used to estimate health expenditure by provider choice for the whole country. However, by the time of the second round of estimation a nationally representative survey of National Living Standard Survey, 2004 was available. This was used to estimate the household health expenditure for the second round. Accordingly, the second round gave a better estimate of government health expenditure at all levels than the earlier exercise. This is not peculiar to Nigerian estimations as had been shown from a synthesis of NHA findings in 26 developing countries that second round estimation always provide higher estimates than the first estimates [13]. We believe that the quality and credibility of NLSS, 2004 data suggests that the latest estimates are not likely to be overestimation but a better estimation than those obtained in the first round of estimation. Indeed, it is generally believed that Nigeria spends more on health than it has always been thought [14].

The data problem suggests that there is the need for legal and legislative support for access to information and data gathering from government ministries, departments and agencies. However, it requires high degree of political support from government at all levels. The starting point for political support is adequate institutionalisation of NHA in the country.

The regularity at which NHA information is made available is also an issue. Due to the complex federal nature of the country it might be difficult to conduct the NHA every year. The NHA can be produced every three years in order to get adequate information. In Nigeria, official actual expenditure figures are not released until after six months into the following year. In fact, for 2009 and 2010 fiscal years, the budget implementation by the Federal government was extended till April of the following year which indicates that actual expenditure might not be ready until after October of the following year. This makes it difficult to collect government data before then. The financial and other resource constraints make the yearly estimates difficult to implement for now. Before that can be done, it is necessary to build local capacity to oversee and monitor NHA activities and also to build trust and commitment of all the three tiers of government.

Based on findings from the two rounds of estimations, it is suggested that the FMOH should coordinate NHA estimation and seek support from development partners if necessary. It should ensure that NHA is integrated into other health financing efforts including health sector management information system (HMIS), Public Expenditure Review (PER), Millennium Development Goals (MDG), Virtual Poverty Funds (VPF) and Medium Term Expenditure Framework (MTEF). In addition, there should be timely reporting of NHA results and estimations should be done as soon as possible so as to reduce the lag in the availability of the NHA results. There should be efforts at full institutionalisation of NHA as soon as possible. In doing this, a critical mass of local experts within the Ministry of Health and government statistical agency should be developed to carry out the NHA estimation on a regular basis. This should be accompanied with advocacy and comprehensive dissemination of the NHA results.

Conclusion

Though the health expenditure in Nigeria has significantly increased over the years, the burden has consistently rest on the household. There is need for increase role of government to lighten the burden on the household. NHA may not be a panacea to all health financing problems; it is however a channel of gauging health financial flows in any country. Its results can be a useful entry point for policy dialogue particularly in relation to issues such as resource envelopes and

prioritisation of scarce resources and sustainability. There is therefore the need to strengthen the technical body to collect and analyse data and to interpret results in terms of their policy implication. Even with the National Health Financing policy document in place in Nigeria, it is still difficult to access information on health expenditure in the country. It has however been demonstrated that institutionalization initiative of the process can significantly improve the outcomes. It is therefore necessary for the FMOH to coordinate health financing estimations, seek assistance if need be, and ensure that NHA is integrated into other health financing efforts, and become institutionalized. Within this framework however, government must take ownership of the process as only this will ensure the sustainability of the estimation process.

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