



**UNIVERSITY OF THE WESTERN CAPE**

**THE NIGERIAN HEALTHCARE SYSTEM: A STUDY OF ACCESS TO  
AFFORDABLE ESSENTIAL MEDICINES AND HEALTHCARE**

Thesis submitted in partial fulfilment of the requirements for the Degree of

Doctor of Philosophy

In

The Department of Anthropology and Sociology, Faculty of Arts

UNIVERSITY of the  
WESTERN CAPE  
University of the Western Cape

By

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**Key words**

Access to medicines, Essential medicines, Healthcare, Public health facilities, Counterfeit medicines, Traditional medicines, Health systems, Systems theory, Medicines, Clinics



## **Abstract**

*The concepts of availability, affordability, accessibility and acceptability otherwise known as the 4As of ATM are key factors that influence access to essential medicines in any given health system. However, the exact scale and extent to which these 4As affect various populations in Nigeria remains unknown. This study investigates the Nigerian healthcare system with special focus on access to quality and affordable essential medicines in three Nigerian States; Abuja, Kaduna and Nassarawa, by drawing upon primary data, using qualitative and quantitative research methods.*



**Declaration**

I, Chinwe Christopher Obuaku-Igwe, hereby declare that this PhD Thesis on The Nigerian Healthcare System: A study of Access to Affordable Essential Medicines and Healthcare is my own work, and that I have received no other assistance than the stated sources and citations.

Chinwe Christopher Obuaku-Igwe

**November 2015**

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Signed



## **Acknowledgement**

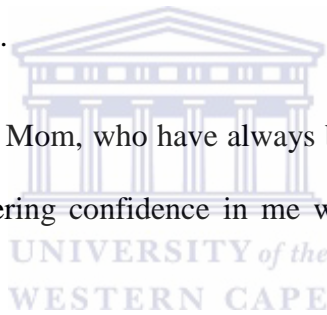
I wish to acknowledge the contributions, efforts and encouragement of the following:

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C C Obuaku

## Abbreviations and Acronyms

ATM	Access to Essential medicines
CMS	Central Medicines Store
EM	Essential medicines
EML	Essential Medicines List
LIC	Low Income Countries
LMICs	Low and Middle Income Countries
NAFDAC	National Agency for Food and Drug Administration and Control
WHO	World Health Organization
FMOH	Federal Ministry of Health



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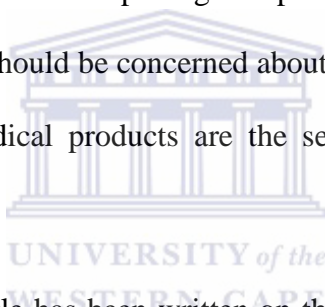
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## Chapter 1: INTRODUCTION

### 1.1. Introduction

Over the past 30 years, the issue of the ‘function of access to affordable essential medicine in a healthcare system’ has been a matter of worldwide concern<sup>1</sup>; in particular, since the Alma Ata of 1978 and the 2000 World Health Organization report<sup>2</sup>. Research has shown that the health of the general population of a nation depends partially on their access to health care<sup>3</sup>. But the access to health care is affected by a number of factors ranging from the availability / affordability of medicines to the availability of healthcare systems and the resources to make them effective<sup>4</sup>. Consequently, it is not surprising that policy makers, practitioners and other stakeholders in the health sector should be concerned about the inability of access to essential medicines, especially, when medical products are the second largest component of most health budgets (after salaries)<sup>5</sup>.



However, until quite recently, little has been written on this issue, especially in Nigeria and even now, it seems that governments and healthcare policy makers find Access to medicines (hereafter known as ATM) problematic, even though 30% of the world’s population, or between 1.3 and 2.1 billion people, are estimated not to have access to the essential medicines they need<sup>6</sup>. Although the percentage of the world’s population without access to essential

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<sup>1</sup> World Health Organization. (2010). Medicines strategy: framework for action in essential drugs and medicines policy 2000–2003. Geneva, World Health Organization.

<sup>2</sup> Murray, C. J., & Frenk, J. (2000). A framework for assessing the performance of health systems. *Bulletin of the World Health Organization*, 78(6), 717-731.

<sup>3</sup> Arah, O. A., Klazinga, N. S., Delnoij, D. M. J., Ten Asbroek, A. H. A., & Custers, T. (2003). Conceptual frameworks for health systems performance: a quest for effectiveness, quality, and improvement. *International Journal for Quality in Health Care*, 15(5), 377-398.

<sup>4</sup> Astrazeneca Global. (nd) retrieved from : <http://www.astrazeneca.com/Responsibility/Access-to-healthcare> . accessed on 23/08/13

<sup>5</sup> World Health Organization. (2010). Key components of a well-functioning health systems. Geneva: World Health Organization.

<sup>6</sup> Hogerzeil, H. V., & Mirza, Z. (2011). The world medicines situation 2011: access to essential medicines as part of the right to health. Geneva: World Health Organization.

medicines has fallen from an estimated 30% in 1999 to around 20% in 2011, statistics show a large percentage of the population still do not have access to Essential Medicines ( hereafter known as EM). For example, in India, 499–649 million people (50% to 65% of the population) do not have regular access to essential medicines<sup>7</sup>. Throughout Africa, a further 267 million people (almost half the population or 15% of the world total) also lack access<sup>8- 9</sup>. In Nigeria, A Baseline Assessment<sup>10</sup> of the Pharmaceutical Sector in 2002 revealed that only 46% of the basic medicines were available in public health facilities in a situation where 23% of the average weekly expenditure of Nigerians went into the treatment of an ailment. These figures reflect poor access to essential medicines although the exact scale has not been accurately estimated.

Another survey by the Nigerian Ministry of Health in collaboration with the World Health Organisation and Health Action International in 2004<sup>11</sup> further showed that the question of access to medicines within the Nigerian context is not only limited to unavailability of generic medicines<sup>12</sup>, but also embraces unaffordability of medicines. The report<sup>13</sup> indicated that Patients in Nigeria pay more than international reference prices for medicines in various facilities in the public and private sectors of the country (which is usually out of their own pocket). This further confirms the report that medicines are the largest component of private

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<sup>7</sup> World Health Organization. (2007). Everybody's business--strengthening health systems to improve health outcomes: WHO's framework for action.

<sup>8</sup> Niëns, L. M., Cameron, A., Van de Poel, E., Ewen, M., Brouwer, W. B., & Laing, R. (2010). Quantifying the impoverishing effects of purchasing medicines: a cross-country comparison of the affordability of medicines in the developing world. *PLoS medicine*, 7(8), 1056.

<sup>9</sup> Auta, A., Bala, E. T., & Shalkur, D. (2014). Generic Medicine Substitution: A Cross-Sectional Survey of the Perception of Pharmacists in North-Central, Nigeria. *Medical Principles and Practice*, 23(1), 53-58.

<sup>10</sup>The Federal Ministry of Health & World Health Organization (2002) Baseline Assessment of the Pharmaceutical Sector. Federal Ministry of Health in collaboration with the World Health Organization

<sup>11</sup> World Health Organization. (2010). *World Health Statistics 2010*. World Health Organization.

<sup>12</sup> Cameron, A., Ewen, M., Ross-Degnan, D., Ball, D., & Laing, R. (2009). Medicine prices, availability, and affordability in 36 developing and middle-income countries: a secondary analysis. *The lancet*, 373(9659), 240-249.

<sup>13</sup> Federal Ministry of Health (2010) Nigeria: Access to and rational use of medicines at the household level. Retrieved from : [apps.who.int/medicinedocs/documents/s16887e/s16887e.pdf](http://apps.who.int/medicinedocs/documents/s16887e/s16887e.pdf)

health expenditure in low and middle income countries<sup>14</sup>. Medicines are unaffordable to 90.2% of Nigerians who live below the income level of US\$ 2 a day as well as the government worker that earns a minimum wage of US\$1.4 per day<sup>15- 16</sup>.

Medicines play a major role in protecting, maintaining and restoring people's health. The provision of appropriate medicines of assured quality, in adequate quantities and at reasonable prices is therefore of utmost priority. Research on the subject is very vital. To this extent, the current study concerns itself with investigating ATM. The investigation is within the immediate context of the Nigerian health system. The focus here is how the interaction between ATM and other components otherwise known as sub systems of the Nigerian health system, function together to achieve the bigger objective of healthcare delivery to all.

This study will pay particular attention to the determinants of the prices of essential medicines in public and private sector in Nigeria. Factors that determine availability of medicines in the country would be investigated as well as determinants of affordability and acceptability, especially in private clinics and public health facilities. Suggestions would be made regarding potential ways that access to essential medicine can be enhanced for a functional healthcare system, when other factors are in place. The study will also focus on evaluating the cost, outcomes, impact, performance metrics, organizational issues, and policies in the domain of essential medical products; vaccines and diagnostics in Nigeria.

Given the fact that 'Health and healthcare systems' are characterized by complexity and interconnectedness, where "everything affects everything else" this study therefore, seeks to examine ATM as part of the Nigerian healthcare system because it forms an integral part of

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<sup>14</sup> Opcit- (key components of a health system, pp 2-3)

<sup>15</sup> McIntyre, D., Thiede, M., Dahlgren, G., & Whitehead, M. (2006). What are the economic consequences for households of illness and of paying for health care in low-and middle-income country contexts?. *Social science & medicine*, 62(4), 858-865.

<sup>16</sup> Wambebe, C., & Ocheke, N. (2011). *Pharmaceutical sector profile: Nigeria*. Vienna: United Nations Industrial Development Organization.

the system and without it, the system will disintegrate. In doing that, the study will focus on issues and aspects that are crucial to the delivery of a good healthcare system, using “systems theory”.

## **1.2. Conceptual Framework**

### **1.2.1. The Concept of Essential Medicines: Definition and Origin of Essential Medicines**

#### **1.2.1.1. Definition of Essential Medicines**

As previously mentioned medicines play a major role in; protecting, maintaining and restoring people’s health. To this extent, the notion of essential medicines becomes critical. Those in the health field tend to isolate medicines that are considered essential, which are according to the WHO<sup>17</sup> Executive Board defined as “*those medicines that satisfy the priority health care needs of the population and as such, has to be available at all times in adequate amounts and in appropriate dosage forms, with assured quality, at a price the individual and the community can afford*”. However, an earlier definition of essential medicines by the WHO in 1977<sup>18</sup> and other health sector actors<sup>19</sup> describes ‘essential medicines’ as medicines that were ‘of utmost importance, basic, indispensable, and necessary for the healthcare needs of the population’...a list of medicines to treat priority diseases and to support a minimum essential level of primary care<sup>20</sup>. This definition marked the conceptualisation of what is

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<sup>17</sup> Report to World Health Organization Executive Board, January 2002 on essential medicines.

<sup>18</sup> World Health Organization. (1977). WHO model list of essential medicines: 1st list, 1977.

<sup>19</sup> Kar, S. S., Pradhan, H. S., & Mohanta, G. P. (2010). Concept of essential medicines and rational use in public health. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine, 35(1), 10.

<sup>20</sup> Opcit; see WHO Model List of Essential Medicines (1977)

known today as essential drugs and was subsequently mentioned in one of the ten points of the Alma Ata Declaration on primary health care in 1978<sup>21</sup>.

As a dominant means of promoting health equity, essential medicines are intended to be available within the context of functioning health systems at all times<sup>22</sup>. Therefore, they are not second rate medicines for the impoverished, rather they are carefully chosen with due regard to disease prevalence, public health relevance, *evidence on efficacy and safety* and comparative *cost-effectiveness*<sup>23</sup>. In addition, the implementation structure of essential medicines is intended to be flexible and adaptable to many different situations where countries are at will to determine what constitutes essential medicines, beyond the WHO approved lists of essential medicines for adults and children<sup>24</sup>.

### 1.2.1.2. The Rationale Underlining Essential Medicines –EM

The essence of making the EM list flexible, according to the World Health Assembly<sup>25</sup> was to increase the collection and availability of medicines for areas with poor access<sup>26</sup> and also, to ensure that countries create their own lists to suit their primary healthcare needs as affirmed by the 1978 Alma ata declaration on primary healthcare, which states that “the provision of essential medicine is a vital and dominant part of primary healthcare”..<sup>27</sup>. In 1977, the WHO established an Expert Committee on Essential Medicines to help member countries in the selection and procurement of medicines. The report of the expert committee marked the formal launch of the concept known as Essential Medicines given the fact that it

<sup>21</sup> Conference Report (1978) Primary Health Care: Report of the International Conference on Primary Health Care AlmaAta, USSR, 6-12 September 1978. Geneva. World Health Organisation 1978 p. 6

<sup>22</sup> Opcit;

<sup>23</sup> World Health Organization. (2013). WHO model list of essential medicines: 18th list, April 2013. Retrieved from <http://www.who.int/mediacentre/factsheets/fs325/en/index.html>

<sup>24</sup> World Health Organization. (2002). Full description of essential drugs Expert Committee Report, April 2002)

<sup>25</sup> Laing R, Waning B, Gray A, Ford N, 't Hoen E. (2003). 25 years of the WHO essential medicines lists: progress and challenges. Lancet 2003 May 17;361(9370):1723-9

<sup>26</sup> <http://stopstockouts.org/stop-stock-outs-campaign/what-are-essential-medicines/> last accessed on: 27<sup>th</sup> august, 2013

<sup>27</sup>The Alma mata declaration. (1978). Retrieved from: [http://www.who.int/hpr/NPH/docs/declaration\\_almaata.pdf](http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf) last accessed on : 27<sup>th</sup> august 2013.



established the criterion for medicine classification<sup>28</sup> as well as the introduction of the first Essential Medicine list (WHO EML) which comprised approximately 200 medicines then, but thereafter, is being revised every two years<sup>29</sup>. The Model List of Essential medicines is now being used by countries as a guide for the development of their own national essential medicines list<sup>30</sup> which serves as the basis for procurement and supply of medicines in the public and private sector, development of schemes that reimburse medicine costs, medicine donations and to guide local medicine production<sup>31</sup>.

The conceptualisation of ‘essential medicines’ was predicated on the fact that Medicines are fundamental parts of the health care and the idea of present day health care systems are inconceivable without the availability of essential medicines. Medicines do not only save lives and promote health, but prevent epidemics and diseases too. Therefore, the notion that medicines are undeniably one of the means for controlling diseases makes it the fundamental right of every human. This further implies that accessibility to medicines is equally the fundamental right of every being. The issue of right’ in the field of health dates back to the WHO constitution of 1946, as part of social rights details the progressive realization of the right to health through four concrete steps, which includes access to health facilities, goods and services<sup>32</sup>. Furthermore, the General Comment 14<sup>33</sup> of the 22nd Session of the UNHCR Committee on Economic, Social and Cultural Rights affirmed rather authoritatively, the principles of essential medicines as accessibility, availability, acceptability and assured

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<sup>28</sup>World Health Organization. (2002). promoting rational use of medicines: core components.

Retrieved from: <http://apps.who.int/medicinedocs/en/d/Jh3011e/2.html>. last accessed on 27<sup>th</sup> august,2013

<sup>29</sup> WHO Policy perspectives on Medicines: (2002). The selection of essential medicines. Available from: [http://whqlibdoc.who.int/hq/2002/WHO\\_EDM\\_2002.2.pdf](http://whqlibdoc.who.int/hq/2002/WHO_EDM_2002.2.pdf). last accessed 28<sup>th</sup> august,2013.

<sup>30</sup> Ruxin, J., Paluzzi, J., Wilson, P., Tozan, Y., Kruk, M. & Teklehaimanot, A. (2005). Emerging consensus in HIV/AIDS, malaria, tuberculosis, and access to essential medicines. *Lancet* 365, 618–621.

<sup>31</sup>Stolk, P., Willemen, M. J., & Leufkens, H. G. (2006). Rare essentials: drugs for rare diseases as essential medicines. *Bulletin of the World Health Organization*, 84(9), 745-751.

<sup>32</sup> WHO Constitution. 1946. Retrieved from: <http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf> accessed : 27<sup>th</sup> august,2013.

<sup>33</sup> CESCR : The right to the highest attainable standard of health : . 08/11/2000.

E/C.12/2000/4. (General Comments) Geneva, 25 April-12 May 2000 . available at :

<http://www.unhcr.ch/tbs/doc.nsf/%28symbol%29/E.C.12.2000.4.En> accessed: 28<sup>th</sup> august 2013.

quality to goods and services, which include essential medicines<sup>34</sup>. These pronouncements marked the confirmation that access to medicines was a global issue. However, the debate on Access to Essential Medicines, started in the late 1970s and 1980s when strong pressure from public health advocates led the pharmaceutical industry to accept the concept, which is now back on the international health policy agenda<sup>35</sup>.

### 1.2.1.3. Conceptualisation of Access to Medicines –What is ATM?

The clear identification of EM and the consequent provision of a list helped in firming up the notion of ATM due to concerns. These concerns were also intensified by the prevalence of very toxic or ineffective medicines and difficulty in treating patients due to the fact that the required medicines are too expensive or no longer manufactured<sup>36</sup>.

Although Oliver and Mossialos<sup>37</sup> are of the view that there is no universally accepted definition of Access, Peters et al's (2008)<sup>38</sup> definition of 'access' as 'the timely use of services according to needs'..., reflects to a great degree, Penchansky's (1981)<sup>39</sup> point that access is a general concept that sums up a set of more precise dimensions which defines the fit between the patient and the health care system. Penchansky further suggested that, ATM is influenced by several factors out of which the demand and supply side<sup>40</sup> features

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<sup>34</sup> Ibid.

<sup>35</sup> Ralyn S.R., (2010) Bridging the Gap in Access to Medicines.

The Lancet Infectious Diseases, 10(8), 514 – 515.

<sup>36</sup> Butler, Christopher. (2007). "Human Rights and the World Trade Organization: The Right to Essential Medicines and the TRIPS Agreement". *Journal of International Law & Policy* 5: 1–27. Accessed :7 April 2013

<sup>37</sup> O'Donnell O. (2007). Access to health care in developing countries: breaking down demand side barriers. *Cadernos de Saú de Pu'blica*, 23 (28), 20–34.

<sup>38</sup> Peters, D. H., Garg, A., Bloom, G., Walker, D. G., Brieger, W. R., & Hafizur Rahman, M. (2008). Poverty and access to health care in developing countries. *Annals of the New York Academy of Sciences*, 1136(1), 161-171.

<sup>39</sup> Penchansky, R., & Thomas, J. W. (1981). The concept of access: definition and relationship to consumer satisfaction. *Medical care*, 19(2), 127-140.

<sup>40</sup> Ensor T, Cooper S. (2004). Overcoming barriers to health service access: influencing the demand side. *Health Policy and Planning* 19(2), 69–79.

prominently. These dimensions<sup>41</sup> are; geographical and financial accessibility, availability, acceptability and quality otherwise known as the 4As. The 4As was first suggested by Penchansky in 1981, but later also adopted and popularised by the WHO years later<sup>42</sup>. The application of the demand and supply dimension to the understanding of ATM incorporates the ability of individuals', households' and communities' to use services vs aspects of health services and the health sector that hinder service utilization.

For millions of people worldwide, medicines and diagnostic products are costly, non-existent, difficult to get or of low quality<sup>43</sup> However, in Africa, more than 70% of the population are affected<sup>44</sup> given the fact that from 2001 – 2007, essential medicines were available only in 30% of all public and private health facilities in Africa<sup>45</sup>. Conceivably, this present state of global healthcare<sup>46</sup> prompted the WHO and African leaders under the platform of the African Commission Resolution on the Right to Health and Access to needed Medicines in Africa<sup>47</sup> into contextualising the 4As of ATM thus:

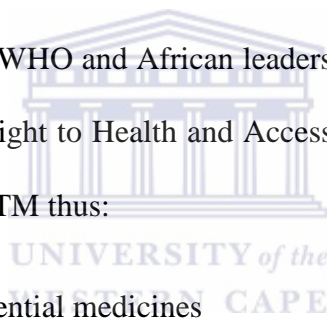


Table 1: The 4As of access to essential medicines

Availability	The availability in sufficient quantities of needed (essential) medicines, including
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<sup>41</sup>Bigdeli, M., Jacobs, B., Tomson, G., Laing, R., Ghaffar, A., Dujardin, B., & Van Damme, W. (2012). Access to medicines from a health system perspective. *Health policy and planning*, czs108. Retrieved from: <http://heapol.oxfordjournals.org/> on: 22<sup>nd</sup> august, 2013.

<sup>42</sup> opcit

<sup>43</sup>Strategy, W. M. (2004). Countries at the core. Retrieved from: [http://whqlibdoc.who.int/hq/2004/WHO\\_EDM\\_2004.5.pdf](http://whqlibdoc.who.int/hq/2004/WHO_EDM_2004.5.pdf) Accessed 26 august 2013.

<sup>44</sup>Backman, G., Hunt, P., Khosla, R., Jaramillo-Strouss, C., Fikre, B. M., Rumble, C., ... & Vladescu, C. (2008). Health systems and the right to health: an assessment of 194 countries. *The Lancet*, 372(9655), 2047-2085.

<sup>45</sup> African Commission on Human and Peoples right. 2008

<sup>46</sup>Pecoul, B., Chirac, P., Trouiller, P., & Pinel, J. (1999). Access to essential drugs in poor countries: a lost battle?. *Jama*, 281(4), 361-367.

<sup>47</sup> Resolution on the Right to Health and Access to Needed Medicines in Africa. (2008). The African Commission on Human and Peoples' Rights, meeting at its 44th Ordinary Session held in Abuja, Federal Republic of Nigeria, from the 10th to 24th November 2008: Accessed on: 28<sup>th</sup> august, 2013. Retrieved from: [http://www1.chr.up.ac.za/images/files/research/ahrru/news/ahrru\\_news\\_15\\_resolution\\_access\\_health\\_need\\_medicines\\_africa.pdf](http://www1.chr.up.ac.za/images/files/research/ahrru/news/ahrru_news_15_resolution_access_health_need_medicines_africa.pdf)

	existing medicines and the development of new medicines needed for the highest attainable level of health
Accessibility	The accessibility of needed medicines to everyone without discrimination, including i. Physical accessibility of needed medicines to all
Affordability	Affordability or economic accessibility of needed medicines to all; Information accessibility about the availability and efficacy of medicines
Acceptability	The Acceptability of medicine supplies, being respectful of cultural norms and medical ethics
Quality	The quality of medicine supplies, ensuring that available medicines are safe, effective and medically appropriate

*World Health Organisation: 2000 & Penchansky et al: 1981*

The use of the term Access to Medicine- ATM in this study is based on the notion that it is the “percentage of population who have access to a minimum list of 20 essential medicines, which are continuously available and affordable at a health facility or medicines outlet, within one hour’s walk from the patient’s home”<sup>48</sup>. Besides, rational use and the quality of medicines also form part of the definition of ATM as contained in the WHO policy document of 2007. This is in understanding and acknowledging the fact that the concept of access goes

<sup>48</sup> World Health Organization. 2007: 1.

beyond the general understanding. This definition proposes that in order to guarantee full access to medicine, countries and health systems must ensure that their strategies include but not limited to what would be regarded as the four A's<sup>49</sup> of access: Availability, Affordability, Accessibility and Acceptability with its associate demand and supply aspects as proposed by Penchansky<sup>50</sup>. These four dimensions of ATM would form the basis for analysing Access to Essential Medicines in Nigeria within the context of the Nigerian Healthcare system.

#### **1.2.1.4. Rationale of the Study: ATM -Access to Medicines as part of the Health System**

Theoretical and empirical studies of access to health care have emphasized the importance of access to medicines<sup>51</sup> and how this affects healthcare<sup>52</sup> outcomes<sup>53</sup>. ATM and access to health care are closely intertwined given the fact that the commonest constraints in access to healthcare facilities, either public or private, affect ATM. Furthermore, availability of Medicines has been cited in literatures<sup>54, 55</sup> as a key factor in access to healthcare as well as utilization<sup>56</sup> of healthcare. When assessing a health system from a holistic perspective, availability of essential medicines has been used as a measure of quality of care by the WHO

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<sup>49</sup>Penchansky, R., & Thomas, J. W. (1981). The concept of access: definition and relationship to consumer satisfaction. *Medical care*, 19(2), 127-140.

<sup>50</sup> ibid

<sup>51</sup>Rohde, J., Cousens, S., Chopra, M., Tangcharoensathien, V., Black, R., Bhutta, Z. A., & Lawn, J. E. (2008). 30 years after Alma-Ata: has primary health care worked in countries?. *The Lancet*, 372(9642), 950-961.

<sup>52</sup> Saleh, K., & Ibrahim, M. I. (2005). Are essential medicines in Malaysia accessible, affordable and available?. *Pharmacy World and Science*, 27(6), 442-446.

<sup>53</sup>Mavalankar, D. V., & Rosenfield, A. (2005). Maternal mortality in resource-poor settings: policy barriers to care. *American Journal of Public Health*, 95(2), 200.

<sup>54</sup>Chukwuani, C. M., Olugboji, A., & Ugbene, E. (2006). Improving access to essential drugs for rural communities in Nigeria: the Bamako initiative re-visited. *Pharmacy World and Science*, 28(2), 91-95.

<sup>55</sup>Kiwanuka, S. N., Ekirapa, E. K., Peterson, S., Okui, O., Rahman, M. H., Peters, D., & Pariyo, G. W. (2008). Access to and utilisation of health services for the poor in Uganda: a systematic review of available evidence. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 102(11), 1067-1074.

<sup>56</sup>Pariyo, G. W., Ekirapa-Kiracho, E., Okui, O., Rahman, M. H., Peterson, S., Bishai, D. M., & Peters, D. H. (2009). Changes in utilization of health services among poor and rural residents in Uganda: are reforms benefitting the poor?. *International Journal for Equity in Health*, 8(1), 39.

and other stakeholders in healthcare<sup>57</sup>. However, irrespective of the significant progress made by the WHO in advertising the EM list and publicising the concept of Essential Medicines - EM, the benefit has not been far reaching<sup>58</sup>, especially, in Africa and Asia. This raises the question of access to these essential medicines; what are the demand / supply constraints regarding ATMs? And, can one say the global community is equipped to tackle the complexities surrounding ATM if countries do not understand the importance of ATM as a part of the health system? This study therefore becomes a useful part of attempts to achieving goals four, five and six of the Millennium Development Goals- MDGs<sup>59</sup>. This is because the number of preventable deaths; under five mortality rate, maternal mortality, and diseases; resistance to malaria etc. could be reduced if quality medicines are accessible, affordable and equitably distributed in time. With Sub Saharan Africa having the highest mortality rate in 2013<sup>60</sup> and Nigeria being counted as one of the three countries with the highest number of under-five deaths alongside Sierra Leone and Somalia, with rates of 184 to 201 per 1,000 live births<sup>61</sup> This research will hopefully, stir up renewed interest and commitment towards increasing Access to Medicines if the MDGs objectives of reducing mortality rates and achieving global health for all must be achieved by 2015, particularly in Nigeria.

Access as a term in healthcare has often been mistaken for entry and or use of a healthcare facility/ services. Whereas, Access to Medicine as a concept, comprises distinct dimensions<sup>62</sup>, which are influenced by an array of specific relationships. These specific

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<sup>57</sup>Ameli, O., & Newbrander, W. (2008). Contracting for health services: effects of utilization and quality on the costs of the Basic Package of Health Services in Afghanistan. *Bulletin of the World Health Organization*, 86(12), 920-928.

<sup>58</sup>Quick, J. D., Hogerzeil, H. V., Velásquez, G., & Rågo, L. (2002). Twenty-five years of essential medicines. *Bulletin of the World Health Organization*, 80(11), 913-914.

<sup>59</sup> Millennium Development Goals 4, 5 and 6 state thus; MDG 4-Reduce Child Mortality;- MDG 5. Improve Maternal Health; MDG 6. Combat Major Diseases.

<sup>60</sup> Millennium development Goals Report. 2013

<sup>61</sup> ibid

<sup>62</sup>Center for Pharmaceutical Management -CPM. (2003). Defining and Measuring Access to Essential Drugs, Vaccines, and Health Commodities: Report of the WHO-MSH Consultative Meeting, Fer ney-Voltaire, France, December 11–13, 2000. Prepared for the Strategies for Enhancing Access to Medicines Program. Arlington, Va:

dimensions as observed by Penchansky<sup>63</sup> and O'Donnell<sup>64</sup> are: availability, accessibility, accommodation, affordability and acceptability.

#### 1.2.1.4.1. Access as Availability

As a dimension of access to medicines, availability is defined by the relationship between the type and quantity of product or service needed, and the type and quantity of product or service provided<sup>65</sup>. It is highly dependent on the Service location and household location. This dimension of access takes into account, the WHO & UNDP's definitions<sup>66</sup> of having medicines constantly available and affordable at public or private health facilities or medicine outlets that are within one hour's walk from the home of the population. For example, Goddard & Smith<sup>67</sup>, further described availability as increasing the number of facilities, in order to reduce the time it takes to reach the closest facility, an important first step. However, greater provision of facilities that can deliver effective care is necessary but is not, in itself sufficient. Availability of a healthcare facility does not necessarily guarantee care as proven by Florence Nightingale<sup>68</sup> during the Crimean War, where she discovered that access to a hospital actually increased the chance of dying, primarily because of the failure to address the risk of infection since the required medicine was not obtainable. Availability of medicines is a supply side dimension of ATM because it indicates the level of service which the health system offers the individual.

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Management Sciences for Health. Retrieved from:

[http://www.msh.org/seam/reports/Access\\_Meeting\\_Ferney\\_Voltaire\\_1.pdf](http://www.msh.org/seam/reports/Access_Meeting_Ferney_Voltaire_1.pdf)

<sup>63</sup> opcit

<sup>64</sup> O'Donnell O. (2007). Access to health care in developing countries: breaking down demand side barriers. *Cadernos de Saú de Pu'blica*, 23 (28), 20–34.

<sup>65</sup> CPM/MSH -Center for Pharmaceutical Management/ Management Sciences for Health. (2011). Center for Pharmaceutical Management: Technical Frameworks, Approaches, and Results. Arlington, Va.: CPM

<sup>66</sup> UNDP, H. (2003). Human Development Report 2003: Millennium Development Goals: A Compact among Nations to End Human Poverty. *New York, USA: UNDP*.

<sup>67</sup> Goddard, M., & Smith, P. (2001). Equity of access to health care services:: Theory and evidence from the UK. *Social science & medicine*, 53(9), 1149-1162.

<sup>68</sup> Dossey, B. M. (1998). Florence Nightingale her personality type. *Journal of Holistic Nursing*, 16(2), 202-222.

Penchanky's taxonomy<sup>69</sup> distinguished availability as the relationship of the volume and type of existing services (and resources) to the clients' volume and types of needs. It refers to the adequacy of the supply of physicians, dentists and other providers; of facilities such as clinics and hospitals; and of specialised programs and services such as mental health and emergency care. This suggests that if a patient suffers a certain ailment, and in the case of any emergency, he or she should be able to obtain the right treatment at first call. The demand and supply aspect to this dimension of access simply means that bio medical healthcare workers, medicines and diagnostics would be the supply side while the demand for the services would remain the demand side.

#### **1.2.1.4.2. Access as Acceptability**

Within ATM, acceptability as defined by Penchansky<sup>70</sup> is “the relationship of clients' attitudes about personal and practice characteristics of providers to the actual characteristics of existing providers, as well as to provider attitudes about acceptable personal characteristics of clients”<sup>71</sup>. In his work, the term appears to be used most often in reference to specific consumer reaction to provider qualities such as age, sex, ethnicity, type of facility, neighbourhood of facility, or religious affiliation of facility or provider. However, other authors also refer to it as consumer disposition to medicines with respect to safety, efficacy and side effects<sup>72</sup>. Similarly, providers have attitudes about the preferred attributes of clients or their financing mechanisms. Providers might either be unwilling to serve certain types of clients (e.g. poor people who rely on charity) or, through accommodation, may make themselves more or less available. Therefore, acceptability as a dimension of access to medicine is distinguished on grounds that the efficacy of a particular medicine has been

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<sup>69</sup> Penchansky R., & Thomas J.W. (1981). The concept of access: definition and relationship to consumer satisfaction. *Medical Care*, 19(1), 27–40.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid, pp128

<sup>72</sup> Osemene, K. P., Ilori, M. O., & Elujoba, A. A. (2013). Generation and acceptability of herbal medicines research and development outputs in Nigeria. *Research Journal of Pharmacy and Technology*, 6(3), 232-237.



proven, it is considered safe for use by all and consumers are satisfied which further compels utilization<sup>73</sup>.

#### **1.2.1.4.3. Access as Geographical Accessibility**

Here, accessibility is determined by the relationship between the location of the medicine and the location of the eventual user. While physical accessibility to medicines matter, there is also social accessibility, which is often ignored but plays a major role. Social accessibility comprises class structure, income, age, education, gender or ethnicity. The relationship between the location of supply and the location of users (demand), takes account of client transportation resources and travel time, distance and cost. Therefore, while the location of the service is considered the supply side, the household location becomes the demand side<sup>74</sup>. Again, if one has to look at accessibility from the demand and supply angle, the characteristics of the health services would represent the supply side while the attitude and expectations of patients would speak to the demand side<sup>75</sup>.

#### **1.2.1.4.4. Access as Affordability**

Affordability of medicine is the relationship between prices of the medicine or diagnostics and the user's ability to pay for them. It is relationship of prices of services and providers' insurance or deposit requirements to the clients' income, ability to pay and existing health insurance. The clients' perception of worth relative to total cost is a concern here, as is their knowledge of prices, total cost and possible credit arrangements<sup>76</sup>. Costs and prices of services falls under the Supply side while household resources and willingness to pay falls under the demand side of affordability.

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<sup>73</sup> Ibid. (see penchansky 1981).

<sup>74</sup> Opcit (see peters et al: 2008)

<sup>75</sup> Ibid

<sup>76</sup> Opcit . pp56

### 1.2.1.5. Quality of medicines

A WHO<sup>77</sup> survey report of 20 countries on counterfeit / substandard medicine from January 1999 to October 2000 revealed that around 60% of fake medicine related incidences took place in low income countries – LICs and 40% in developed countries. Also, in May 2012, reports of over 771 cases of substandard medicines had been entered into the WHO database on counterfeits, 60% of which were from developing countries. Data analysis showed that in 60% of the 325 cases of the commonest counterfeits, an active ingredient was missing from the product. Adams<sup>78</sup> stated that better-quality access leads to improved use but not necessarily improved health. This implies that accessibility to the wrong medicines poses a big health hazard. Statistics show that quality of medicines is also an important factor in ATM. It revealed to a degree that it is in LICs that ATM would be more problematic. Why would it be more problematic? Because statistics show that patients tend to have access more to fake medicines than one would expect them to have to quality medicines. The other question becomes, what explains the fact that ATM is a problem given the fact that fake medicines tend to be in high demand due to their ease of access and affordability? This question reflects that the responsibility of safeguarding the safety, efficacy and quality of medicines falls under the supply side aspect of access and behoves the creation of expert medicine monitoring bodies within countries, with the resources to control the production, importation, supply and sale of medicines.

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<sup>77</sup>Lu, Y., Hernandez, P., Abegunde, D., WHO, G., & Edejer, T. (2011). The world medicines situation 2011. *Medicine expenditures. World Health Organization, Geneva.*

<sup>78</sup> Adams .O. Access to health services: Approaches to Assessment

### 1.2.1.6. Barriers to Access

Although there is no universally accepted definition of access to medicines due to its complexity, Peters et al's<sup>79</sup> definition of access as 'the timely use of services according to need' and Penchansky & Thomas's definition<sup>80</sup> 'as a fit between the clients and the health system clearly captures the different dimensions of what constitutes access to medicines as outlined in the WHO report. These definitions of access indicate that there is a demand and supply side to ATM. Therefore, when we talk about barriers to ATM, it also raises the issue of the different sides of ATM. Ensor & Cooper<sup>81</sup> further buttressed this by theorizing that the demand side barriers to access at the individual, household and community levels are influenced by factors such as; 'Perceived quality of medicines and health services, Cost of medicines and services, Irrational health-seeking behaviour: Management staff efficiency, technology, household expectations, community and cultural preferences, attitudes and norms; demand for and use of medicines; waiting time, wages and quality of staff, price and quality of drugs and other consumables, information, education; Social and cultural barriers - stigma related to poverty, ethnicity and gender'<sup>82</sup>. All these factors contribute to reduced access to medicine. The supply side constraints to ATM focuses on the healthcare service provider/ facilities; According to Cameron et al<sup>83</sup>, the supply side barrier to access has to do with service location, quality of the medicine: counterfeits / sub standards, affordability and availability<sup>84</sup>. Other scholars<sup>85</sup> also cited unqualified health workers, staff absenteeism,

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<sup>79</sup> Opcit.

<sup>80</sup> Penchansky R., & Thomas J.W. (1981). The concept of access: definition and relationship to consumer satisfaction. *Medical Care* 19: 122

<sup>81</sup> Jacobs, B., Ir, P., Bigdeli, M., Annear, P. L., & Van Damme, W. (2012). Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income Asian countries. *Health Policy and Planning*, 27(4), 288-300.

<sup>82</sup> Opcit.

<sup>83</sup> Cameron, A., Ewen, M., Ross-Degnan, D., Ball, D., & Laing, R. (2009). Medicine prices, availability, and affordability in 36 developing and middle-income countries: a secondary analysis. *The lancet*, 373(9659), 240-249.

<sup>84</sup> Kotwani, A. (2009). Availability, price and affordability of asthma medicines in five Indian states. *The International Journal of Tuberculosis and Lung Disease*, 13(5), 574-579.

opening hours, Information on health care services/providers, waiting time, Education/Motivation of staff, irrational prescription and dispensing<sup>86</sup>. Essential medicines play a major role in healthcare delivery given the fact that the interaction between medicines and services yield positive health outcomes. However, the numerous and multifaceted constraints to ATM has led to the underperformance of a lot of healthcare systems, especially in Low income countries.

### 1.2.1.7. Access and Barriers to Medicines in Nigeria

ATM which is of concern to researchers, policy makers and governments worldwide is similarly the case in Nigeria though research in this area is not much as earlier mentioned. The significance attached to it is evident in various laws and organizations that have been established over the years in Nigeria to eliminate or reduce the barriers that hinder access to medicines<sup>87</sup>. As part of its efforts and commitment towards the equitable and timely distribution of quality and essential medicines, Nigeria adopted the World Health Organization Model List of Essential Medicines and set up legislation to back it up in 1989<sup>88</sup>. Yet, decades later, over 60%<sup>89</sup> of its population still lack access to Medicines. The primary goal of the Nigerian Medicines Policy is to ensure the availability of effective, quality and affordable medicine to all Nigerians at all times and in all sectors of the health care system. Yet, the population of people with access to essential medicines required for the treatment of acute and chronic sicknesses such as malaria and HIV is estimated at 40%<sup>90</sup>. From 2002 to

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<sup>85</sup> Holloway, K., & Van Dijk, L. (2011). Rational use of medicines, The world medicine situation 2011. *World Health Organization*.

<sup>86</sup> Shankar, P. R. (2009). Medicines use in primary care in developing and transitional countries: fact book summarizing results from studies reported between 1990 and 2006. *Bulletin of the World Health Organization*, 87(10), 804.

<sup>87</sup> Kuti, O. R. (1992). National drug policy in Nigeria. *Journal of public health policy*, 367-373. Retrieved from: <http://www.jstor.org/stable/3342734>

<sup>88</sup> ibid

<sup>89</sup> World Health Organizations. (2012). *Health statistics and health information systems*. World Health Organization, Geneva.

<sup>90</sup> World Health Organization. (2002). Baseline assessment of the Nigerian pharmaceutical sector.

2012, the Median availability of selected generic medicines in Public facilities was 26.2% while that of the private sector was 36.4%<sup>91</sup>.

In Nigeria, access to medicines cuts across the four dimensions of ATM and each of the 4As has two constituents relating to demand and supply. On the other hand, the constraints to ATM in Nigeria could be summed up as a lack of affordable healthcare coverage or long waiting times before innovative medicines are approved or made broadly available.

The Nigerian government and other stakeholders in the health sector have made attempts at tackling the constraints of ATM in the country. Nevertheless, ATM in Nigeria still remains a big challenge. Statistics from Demographic and health Survey<sup>92</sup> of the country indicated that poor medicine availability, particularly in the public sector has remained high between 2004 and 2011<sup>93</sup>. The WHO report stated that although basic medicines were generally more available in all outlets, a range of 34 priority medicines was particularly low within the public and private health facilities in Nigeria<sup>94</sup>. The survey also revealed that patients in Nigeria pay more than international reference prices for medicines in public and private facilities. In addition, although medicine costs in the public facilities were almost same with those in the private facilities, Private health clinics were shown to charge up to 184% more than the public health facilities and 193% more than private retail pharmacies<sup>95</sup>. WHO statistics have shown that medicines are too expensive to 90.2% Nigerians who live below 2 US dollars a day and these also included government employees who earn a minimum wage of 1.4 US dollars daily<sup>96</sup>. Affordability in Nigeria, as indicated in the survey report, was essentially

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<sup>91</sup> *ibid*

<sup>92</sup> Measure, D. H. S. (2008). Description of the demographic and health surveys individual recode data file. Calverton, MD USA: Measure DHS.

<sup>93</sup> *ibid*

<sup>94</sup> Medicines Price Survey conducted in 2004 in order to determine the prices people pay for their medicines in Nigeria. Carried out by the Federal Ministry of Health in Nigeria and sponsored by the World Health Organization -WHO and Health Action International –HAI.

<sup>95</sup> *Ibid*,pp6-7

<sup>96</sup> *Ibid* pp63

dependent on the choice of therapeutic class, product or sector from which the medicine was bought. This further confirms the estimation that the percentage of Out-of-pocket expenditure as a proportion of private expenditure on health is about 94.5% in Nigeria<sup>97</sup>.

Medicine availability and prices in both public and private sectors are key indicators of access to treatment. Surveys of medicine prices and availability, conducted using a standard procedure, have shown that poor medicine availability, particularly in the public sector, is a key barrier to access to medicines.

Another baseline survey<sup>98</sup> of the Nigerian Pharmaceutical Sector, further showed that due to unavailability of key medicines in public health facilities (Only about 46% of a basket of key medicines were found in all facilities both public and private), patients in Nigeria utilize private healthcare facilities (private clinics, retail pharmacies, chemists, and mobile medicine sellers) resulting in over 95%<sup>99</sup> of the populace using inappropriately prescribed drugs. Given the condition they find themselves, it would not be out of place to say that medicine sellers, local chemist shops (often untrained and unlicensed) and private pharmacies /clinics provide healthcare more than public facilities.

ATM in Nigeria has been constrained by healthcare expenditure which has been regarded as abysmally low when compared to the WHO standard. The Total expenditure on health as a percentage of gross domestic products in 2010 was 5.42% while general government expenditure on health as a percentage of total expenditure on health in 2011 was 36.69<sup>100</sup>. The total expenditure on health care as percentage of GDP is 4.6, while the percentage of federal government expenditure on health care is about 1.5%<sup>101</sup>. Although the Nigerian

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<sup>97</sup> opcit

<sup>98</sup> World Health Organization. (2002). Baseline assessment of the Nigerian pharmaceutical sector.

<sup>99</sup> Situation of Antiretroviral Drug Use In Nigeria by FMOH in collaboration with WHO, November 2003

<sup>100</sup> WHO.2013. Global Health Observatory Data Repository

<sup>101</sup> Rais, A. (1991). Health Care Patterns and Planning in Developing Countries [A]

government spends about 70% of its healthcare budget<sup>102</sup> in urban areas where 30% of the population live, there is no record of how much of this allocation goes into the procurement of medicines within these areas.

A Business day publication stated that: “The 2013 budget allocation to the healthcare sector is 239 billion and on a per capita basis, comes to N1, 680 as against a WHO recommendation that governments spend a minimum of N6, 908 per head, on providing healthcare services to their citizens”. The report added that the 2013 budgetary allocation to healthcare delivery is made even worse by the fact that 77 per cent or N77 of every N100 allocated to the Ministry, would be spent on paying personnel employed in the sector, leaving just N20 of every N100 spend, for capital expenditure incurred by over 50 Federal Medical Centres and Teaching hospitals across the federation and just N3 of every N100 budgeted for healthcare to cover overheads incurred. The gap of N5, 224 per head at the Federation level is too wide to be filled by autonomous spending from state government allocation. A closer look at the 2013 budget shows that out of the total budget, a low sum of 32,258,446 ( thirty two million, two hundred and fifty eight thousand, four hundred and forty six naira) was allocated to drugs & medical supplies.

The availability of essential medicines in all sectors within Nigeria is also low especially, at 22.6% with half of the generic medicines found in 5.4% to 45.2% of the private pharmacies<sup>103</sup>. The average availability of all medicines in the three dominant sectors in Nigeria is represented in the table below;

Table 2:

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<sup>102</sup>Vogel, R. J. (1993). *Financing health care in sub-Saharan Africa* (No. 164). Praeger Pub Text.

<sup>103</sup> Baseline Assessment of the price people pay for Medicines in Nigeria, 2006, published by the Federal Ministry of Health in collaboration with the World Health Organization, DFID and HAI

Public facilities	Private clinics	Private Pharmacies
Innovator brands – 2.4%	21.6%	5.1%
Lowest Priced Generic medicines – 2.6%	34.1 %	16.7%
Most Sold Generic medicines- 2.4%	13.6%	2.6%

Source: Baseline Assessment of the prices people pay for medicines in Nigeria, 2006, published by the Federal Ministry of Health in collaboration with the World Health Organization.

From the table above, it is evident that the public and private health clinics stocked almost entirely lowest priced generic equivalent products while the private pharmacies had a mix of all products. Also, the availability of all medicines was lowest in private health clinics. The table also showed that top availability of both innovator brand and generic medicines are in private pharmacies. Approximately half of the generic medicines are found in both public and private health facilities and about a quarter of the innovator brands are found within the same facilities. For example, in terms of affordability, the survey<sup>104</sup> specified that the most sold generic medicine was obtained at the lowest price in public health facilities but cost as much as 143 times in private clinics. Also, the lowest price for a generic medicine known as Meprasil was found in private pharmacies but cost about 840% higher in private clinics. The minimum and maximum prices for the same medicine were more expensive in public facilities than in private pharmacies. This implies that all medicine prices are higher in private clinics but there is no pattern in the pricing of the same medicines in public facilities

<sup>104</sup>Baseline Assessment of the price people pay for Medicines in Nigeria, 2006, published by the Federal Ministry of Health in collaboration with the World Health Organization, DFID and HAI



and private pharmacies. While some medicines are higher in public facilities, others are higher in private pharmacies. Generally, the prices of the same medicines are not so different in public facilities and private pharmacies, but show a large difference when compared with the cost in private clinics.

A further look at the components of medicine prices in Nigeria shows that the import cost of most medicines is less than half of what the patient eventually pays. The rest is spread out over government tariffs and cost of distribution. Thus, it is evident that government levies, charges and supply costs make up a large part of the amount people pay for medicines as portrayed by a study of medicine pricing structure in Nigeria<sup>105</sup>. If that be the case, would a new pricing policy improve ATM and eliminate all pricing variations across all sectors?

Nigeria's 1989 legislation on essential medicine contained protocols on how to control the production and importation of counterfeit / sub-standard drugs as well as harmful advertisements of health products<sup>106</sup>. However, despite the effort of the government, drug counterfeiting has remained an obstacle that has prevented people from having access to quality medicines. The WHO estimated the yearly earnings from counterfeit/ substandard medicine at over US\$32 billion<sup>107</sup>. The report further added that 64% of Nigeria's imported antimalarial drugs were substandard<sup>108</sup>. It revealed that the prevalence rate of counterfeit / substandard medicines in Nigeria was at 16.7% five years ago, however, the rate has dropped to 6% in 2013<sup>109</sup>. Reports from the National Agency for Food and Drug Administration and Control –NAFDAC have confirmed that being Africa's largest drug market, Nigeria is the biggest market for counterfeit medicines, with over 70% of its pharmaceutical imports

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<sup>105</sup> Ibid.

<sup>106</sup> Kuti, O. R. (1992). National drug policy in Nigeria. *Journal of public health policy*, 367-373.

<sup>107</sup> WHO. (2012). Substandard and counterfeit medicines". Who.int. August 25, 2004. Retrieved March 12, 2012

<sup>108</sup> Ibid

<sup>109</sup> Francis K. (2013). "Unlike India, China not helping Nigeria stop fake drugs'," *New York Daily News*, May 15, 2013.

coming from China and India, the leading sources of substandard and counterfeit products<sup>110</sup>. The prevalence of counterfeit / substandard medicines in Nigeria has been blamed on easy access, dependability of supply and affordability. The high cost of medicines in private pharmacies and healthcare facilities coupled with the scarcity of essential medicines in public facilities compels consumers into the use of inappropriately prescribed medicines. And often times, these inappropriately prescribed medicines are bought across the counter from unauthorised but cheap and easily accessible sources. Furthermore, counterfeits and substandard medicines are often supplied through various distribution networks such as public health facilities, private pharmacies, local unauthorised drug stores, and the internet. And, they often have instant effect on patients who do not receive the necessary treatment as well as increasing their resistance to treatment for severe ailments. What does this mean for ATM? What is being suggested here is very simple; that medicines are available but what seems to be a problem, a significant problem is the access to medicines that are listed as essential generally and adopted in Nigeria as such and the quality of these medicines it is, one would like to assume, one of the reasons why there is still the resort to the use of traditional medicines in the country. In fact, the resort to and use of traditional medicines is prevalent in LICs. For example, data from the WHO shows that 80% of Asians and Africans depend on traditional medicine for primary health care due to their inability to access or afford essential medicines<sup>111</sup>

#### **1.2.1.8. Traditional Medicines**

Despite efforts made by the Nigerian government in increasing allocations to public facilities, access to medicines remains a serious challenge in the country. Unavailability of medicines in public facilities, unaffordability (high prices), the prevalence of counterfeits in the private

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<sup>110</sup>Bad Medicine", The Economist, Oct. 13, 201

<sup>111</sup> Lindquist, M. (2008). VigiBase, the WHO global ICSR database system: basic facts. *Drug Information Journal*, 42(5), 409-419.

facilities and the absence of a national insurance coverage for non-government workers result in a high rate of out-of-pocket expenses for most individuals, households and communities.

Statistics show that in many developed countries, 70% to 80% of the population has used some form of alternative or complementary medicine (e.g. acupuncture)<sup>112</sup>. According to the WHO, Traditional medicine has been defined as "the sum total of knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures that are used to maintain health, as well as to prevent, diagnose, improve or treat physical and mental illnesses"<sup>113</sup>. The terms "complementary medicine" or "alternative medicine" are used inter-changeably with traditional medicine in some countries. They refer to a broad set of health care practices that are not part of that country's own tradition and are not integrated into the dominant health care system<sup>114</sup>. It involves the use of native herbs and sometimes, African or non-African spirituality, which comprises diviners, midwives, and herbalists. The herbal range of alternative medicines includes herbs, herbal materials, herbal preparations, and finished herbal products that contain parts of plants or other plant materials as active ingredients"<sup>115</sup>. Herbal treatments have been termed the most popular form of traditional medicine, and the most lucrative in terms of revenue generation. Between 2003 and 2004, yearly revenues generated in Western Europe reached US\$ 5 billion. Also, in 2005, profits generated from sales of herbal products in China totalled US\$ 14 billion. Herbal medicine revenue in Brazil was US\$ 160 million in 2007.

Studies conducted in 2004 and 2010 show that traditional medicine remains the most affordable and accessible form of healthcare for most Africans, especially, the rural

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<sup>112</sup> ibid

<sup>113</sup> opcit

<sup>114</sup> World Health Organization. (2000). General Guidelines for Methodologies on Research and Evaluation of Traditional Medicine. Geneva. 1 -2.

<sup>115</sup> Helwig, D. (2010) WHO: Traditional American medicine. 68.

dwellers<sup>116</sup>. Having recognised and acknowledged the role of traditional medicine within the continent, the African Union declared 2001 to 2010 'the Decade for African Traditional Medicine' with the aim of producing "safe, effective, quality, and affordable traditional medicines accessible to all"<sup>117</sup>. Traditional medicine was considered primitive and backward in the past; however, its undeniable role in the delivery of healthcare and the threat of counterfeit which is associated with its relevance has compelled more than 100 countries<sup>118</sup> into setting up regulations for traditional/ herbal medicines.

The importance of traditional medicines cannot be overemphasised given the fact that beyond its easy reach and affordability, it has been reputed to treat different kinds of infectious and chronic conditions<sup>119</sup>. Moreover, the WHO discovered that the new antimalarial drugs were developed from the discovery and isolation of artemisinin from *Artemisia annua* L., a plant used in China for almost 2000 years<sup>120</sup>.

Although the general utilization ratio of traditional medicine in Nigeria is not totally documented, research has shown that there is a strong evidence of use by pregnant women<sup>121</sup>,<sup>122</sup> & <sup>123</sup>, hypertensive<sup>124</sup> and asthmatic people<sup>125</sup>, children<sup>126</sup>, and cancer

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<sup>116</sup> Stanley, B. (2004). Recognition and Respect for African Traditional Medicine. *Canada's International Development Research Centre*.

<sup>117</sup> ibid

<sup>118</sup> Opcit :WHO

<sup>119</sup> Helwig, David ( 4Feb 2010). "Traditional African medicine". Encyclopedia of Alternative Medicine. Retrieved 4 Feb 2010

<sup>120</sup> World Health Organization,(2000). General Guidelines for Methodologies on Research and Evaluation of Traditional Medicine. Geneva.

<sup>121</sup> Fakeye, T. O., Adisa, R., & Musa, I. E. (2009). Attitude and use of herbal medicines among pregnant women in Nigeria. *BMC Complementary and Alternative Medicine*, 9(1), 53.

<sup>122</sup> Gharoro E.P, Igbafe A.A. (2000). Pattern of drug use amongst antenatal patients in Benin City, Nigeria: *Med Sci Monit*,6(1):84-7

<sup>123</sup> Tamuno, A., Omole-Ohonsi, J. F.(2010). Use of Herbal Medicine among Pregnant Women Attending a Tertiary Hospital in Northern Nigeria. *The Internet Journal of Gynecology and Obstetrics*, 15 (2).

<sup>124</sup>Olisa, N. S., & Oyelola, F. T. (2010). Evaluation of use of herbal medicines among ambulatory hypertensive patients attending a secondary health care facility in Nigeria. *International Journal of Pharmacy Practice*, 17(2), 101-105.

<sup>125</sup> Adeyeye , O.O., Onadeko B.O., Ogunleye O., Bamisile R.T., & Olubusi A.(2011). The use of complementary and alternative medicine by asthma patients receiving care in an urban tertiary centre in Nigeria. Retrieved from:

<http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CD8QFiAC&url=http%3A%2F%2F>

patients<sup>127</sup>. The use of traditional medicine is not new in Nigeria. Traditional / herbal Medicine has been the first choice of treatment for illnesses in Nigeria before the advent of western medicine. Most people who used traditional medicines in Nigeria always alluded to; the fact that it is organic and safe, easy to access, cheap as compared to the high cost of conventional healthcare and medicines, effective when used for prolonged illnesses that had defied conventional medicines<sup>128</sup>. Other motivating factors have been religious or cultural beliefs as well as the fact that traditional medicines do not come in strict doses<sup>129</sup>.

Although decree No. 15 of 1993 introduced the regulation of traditional medicines in Nigeria, so long, the code of practice regarding production could be said to be lax, due to the proliferation of counterfeit herbal mixtures in the market and the fact that herbal medicines are sold without restriction by licensed practitioners. There are currently 107 registered herbal medicines in Nigeria, but none is listed on the essential drug list<sup>130</sup>.

Given the significant role traditional medicine plays in the country, the Nigerian government supports but is yet to incorporate traditional medicine as part of primary healthcare<sup>131</sup> into the national health systems in combination with national policy and regulation for herbal products, practices and providers to ensure safety and quality; ensure the use of safe, effective and quality products and practices. Government efforts towards increasing access to

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[2Fwww.biomedscidirect.com%2Fdownload%2FIJBMRF2011345%2F13%2Fthe\\_use\\_of\\_complementary\\_and\\_alternative\\_medicine\\_by\\_asthma\\_patients\\_receiving\\_care\\_in\\_an\\_urban\\_tertiary\\_centre\\_in\\_nigeria&ei=giMuUv\\_IFOmG7Ab56oH4Aw&usg=AFQjCNHgJqIQ-DyOBNIhb5pkOvaXvbBnnA&sig2=olxigJNJ2K0Isn\\_xa3APIQ](http://www.biomedscidirect.com%2Fdownload%2FIJBMRF2011345%2F13%2Fthe_use_of_complementary_and_alternative_medicine_by_asthma_patients_receiving_care_in_an_urban_tertiary_centre_in_nigeria&ei=giMuUv_IFOmG7Ab56oH4Aw&usg=AFQjCNHgJqIQ-DyOBNIhb5pkOvaXvbBnnA&sig2=olxigJNJ2K0Isn_xa3APIQ) Accessed 09 September 2013.

<sup>126</sup> Oshikoya KA, Senbanjo IO, Njokanma OF, Soipe A:2008. Use of complementary and alternative medicines for children with chronic health conditions in Lagos Nigeria. available at:

<http://www.ncbi.nlm.nih.gov/pubmed/19113999>

<sup>127</sup> Ezeome ER, Anarado AN:2012. Use of complementary and alternative medicine by cancer patients at the University of Nigeria Teaching Hospital, Enugu, Nigeria

<sup>128</sup> Collins D, Oakey S, Ramakrishnan V: Perioperative use of herbal, complementary and over the counter medicines in plastic surgery patients. *Eplasty* 2011, 11:e27.

<sup>129</sup> Obi, E., Akunyili, D. N., Ekpo, B., & Orisakwe, O. E. (2006). Heavy metal hazards of Nigerian herbal remedies. *Science of the Total Environment*, 369(1), 35-41.

<sup>130</sup> World Health Organization. (2005). National policy on traditional medicine and regulation of herbal medicines: Report of a WHO global survey.

<sup>131</sup> World Health Organization. 2000 Traditional and Modern Medicine: Harmonising the two Approaches Western Pacific Region. Geneva: World Health Organisation; 2000.

healthcare and preservation of knowledge and resources would yield positive outcomes and ensure patient safety if the traditional medicines providers have their skills and knowledge upgraded<sup>132</sup>.

### 1.3. Problem Statement

The provision of affordable essential medicines is one of the United Nations Millennium Development Goals, but there are millions of people from low and middle income countries who cannot access the essential medicines recommended by the World Health Organization (WHO)<sup>133</sup>. Access to Control, Preventive, curative diagnostics, vaccines, medicines as well as health facilities and human resources are key objectives of the Millennium Development Goals. However, many people from poor countries, especially sub-Saharan Africa continue to face shortage of affordable essential medicines. It is estimated that in Nigeria, 50 to 60 percent of the general populace lack access to affordable essential medicines in the public health facilities, forcing them to the private sector where prices are considerably higher, with a bigger risk of counterfeits/ sub standards which tend to be sold at more affordable prices.

Medicines are a fundamental part of any healthcare system and inadequate access to affordable essential medicine undermines health systems objectives of efficiency and health development for everyone. Lack of access to affordable essential medicines also results in weak health systems, poor service delivery and poverty, given the fact that people resort to 'concierge medicine'<sup>134</sup>.

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<sup>132</sup>World Health Organization. (2000). Promoting the role of traditional medicine in health systems: a strategy for the African Region 2001–2010. Harare, Zimbabwe: WHO.

<sup>133</sup> See: Committee on Economic, Social and Cultural Rights General Comment nr.14 (May 2000). Art.12.2.c: Right to prevention, treatment and control of diseases includes creation of a system of urgent medical care in case of accidents, epidemics; and disaster relief and humanitarian assistance  
Art 12.2.d: Right to health facilities, goods and services includes appropriate treatment of prevalent diseases, preferably at community level; and the provision of essential drugs as defined by the WHO Action Programme on Essential Drugs.

<sup>134</sup> "...'concierge medicine', means patients typically pay an annual subscription fee ...That buys them regular direct access to their doctor and by extension, medication without having to deal with insurance companies

In response to this problem, there is a noticeable increase of attention on ATM as a subject worthy of further academic consideration, given the fact that the ATM challenge is multifaceted and complex therefore requires multiple actors to take responsibility. This study focuses on the situation of Nigerians' access to affordable essential medicines, the factors that influence ATM / barriers and, how poor access to affordable essential medicines weakens the national healthcare system. The general aim of this study is to investigate ATM as a part of the Nigerian health system, with regards to how it functions within the system and how its functionality affects the output (service delivery) of the entire system.

### **1.3.1. Research Aim**

The research has two focus points: to examine ATM as a part of the Nigerian health system and investigate the barriers to ATM as well as how these constraints affect the efficiency of the healthcare system in general. The study focuses on ATM and how changes in ATM can impact the health system. In order to achieve these aims, the research would be guided by the questions below, which speak to the various dimensions of ATM otherwise known as the 4As:

1. What are the determinants of medicine prices?
2. How does medicine pricing affect affordability?
3. Does the high cost of medicine in Nigeria encourage the flow of fake medicines?
4. What factors are responsible for the variations in pricing of the same medicine across different facilities (public and private) in Nigeria?

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and 'access issues'." An online directory maintained by the American Academy of Private Physicians, which listed 17 concierge specialists in 2011, today lists more than 60. The main benefit is access'. Some concierge groups also get patients in immediately if they are ill in another location where they have member physicians and get them access to medicines faster. Further information available at: <http://www.utsandiego.com/news/2013/dec/17/concierge-san-diego-rise/> accessed: 2<sup>nd</sup> march, 2014.

5. What percentage of EM is available in public / private outlets and facilities?

### **1.3.2. Research Question**

The issue of ATM in Nigeria raises critical questions requiring research. These research questions are;

To what extent can one begin to talk about the barriers of access to medicines in Nigeria? The introduction of the WHO essential medicines model list changed the landscape for access to medicines by maintaining that countries must have at least 20 of the listed essential medicines in their healthcare facilities at any given time, this increased the cost of essential medicines in Nigeria in private facilities while it led to scarcity in the public facilities. Given the fact that the rate of out of pocket purchase of medicines is quite high in Nigeria due to the nature of the healthcare system, a lot of people started seeking cheaper and easily accessible means of getting medicines without due regard for its quality. Also, the fact that Nigeria sources its medicines from China and India, the highest producers of fake medicines increased the spread of counterfeit medicines. While many countries have used the WHO essential medicines list to increase access to medicines by establishing regulations and policies to guide the importation, quality and distribution of medicines, Nigeria ranks low in this regard. From the foregoing, it is evident that the constraints to ATM in Nigeria are multi-dimensional. The multi- dimensional nature of unavailability of medicines in Nigeria is such that most of the people without access to medicines either received the wrong treatment; prescription and quality, could not afford the medicine or the required supply for their health needs is out of stock. Furthermore, since medicine prices are high in Nigeria it raises the question of what the determinants of medicine prices are and how this pricing affects affordability? Another question is; could it be said that the high cost of medicine encourages the flow of sub-standard and counterfeit medicines in Nigeria? What is the cause of the



variations in the pricing of the same medicine across different facilities (public and private) in Nigeria?

### **1.3.3. The Significance of the Study**

In 2010, a survey<sup>135</sup> of 30 public health facilities and 30 private medicine outlets in Nigeria was conducted to assess the extent to which the National Medicines Policy had been implemented in healthcare facilities; and give recommendations that can improve the implementation process within the country. The survey showed that about 60% of essential medicines were not available in the public sector, whereas, 93% of the same medicines were available in the private sector but more expensive. Three years later, WHO Statistics<sup>136</sup> show that nearly half of all countries (82 out of 194 countries) surveyed between 1999 and 2011, have access to less than half the essential medicines they need for basic health care in the public sector. In several low – and middle income countries, lack of access to medicines in public facilities, force people to the private sector where prices can be up to 16 times higher. In these countries, an average of only 57% (and as little as 3%) of selected generic medicines are available in the public sector. Being a major determinant of healthcare delivery/ component of a healthcare system, lack of ATM is a significant healthcare challenge. Unless far-reaching changes are applied, Nigeria and other low-and middle income countries do and will face incredible health burden. Empirical evidence is needed to show the significance of ATM as a part of the Nigerian health system and this study thus serves as a major contribution in that regard.

### **Pre Study Review of Literature**

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<sup>135</sup> World Health Organization & Federal Ministry of Health, Nigeria. (2010). Access to and Rational Use of Medicines at the Facility Level

<sup>136</sup> World Health Organization. (2013). World health Statistics: The World Health Statistics compares progress made by countries with the best health status and those with least-favourable health status at the MDG baseline year of 1990 and again two decades later.

Since the publication of the World Medicines Situation<sup>137</sup> began, several articles on ATM have appeared. These articles highlight the basic principles underpinning essential medicines, the challenge of fake/ counterfeit medicines as well as other constraints to ATM. The WHO Expert Committee report stated that the purpose of having Essential medicines are intended to be available within the context of functioning health systems at all times, in adequate amounts, in the appropriate dosage forms, with assured quality, and at a price the individual and the community can afford

According to a WHO report<sup>138</sup>, although there is improved access to medicines to treat HIV/ AIDs, essential medicines remain inadequately available in low and middle income countries due to the high prices of medicines in these countries. Essential medicines were available only in 57% of public and 65% of private facilities in 2012<sup>139</sup>. With medicine prices being higher than international reference prices in public / private facilities within low and middle income countries, access to essential medicines remains a global challenge and raises the questions regarding what factors determine ATM and how does ATM affect health systems? With the ubiquity of health policy reviews, this question received great attention but surprisingly insufficient answers. One reason may be that in Nigeria, there is dearth of literature in the area of ATM.

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<sup>137</sup> World Health Organization. (2011). The World Medicines Situation 2011—Traditional Medicines: Global Situation, Issues and Challenges. *Genova: WHO*.

The report indicated that: “Medicine availability and prices in both public and private sectors are key indicators of access to treatment. Surveys of medicine prices and availability, conducted using a standard methodology, have shown that poor medicine availability, particularly in the public sector, is a key barrier to access to medicines. Public sector availability of generic medicines is less than 60% across WHO regions, ranging from 32% in the Eastern Mediterranean Region to 58% in the European Region. Private sector availability of generic medicines is higher than in the public sector in all regions. However, availability is still less than 60% in the Western Pacific, South-East Asia and Africa Regions. In countries where patients pay for medicines in the public sector, average prices of generic medicines range from 1.9 to 3.5 times international reference prices (IRPs) in the Eastern Mediterranean and Western Pacific Regions, respectively”. WHS 2011.

<sup>138</sup> Marriott, B. P., White, A., Hadden, L., Davies, J. C., & Wallingford, J. C. (2012). World Health Organization (WHO) infant and young child feeding indicators: associations with growth measures in 14 low-income countries. *Maternal & child nutrition*, 8(3), 354-370.

<sup>139</sup> *ibid*

The incidence of lack of access to medicines and the number of people without access to medicines may have reduced in some regions, but rapidly increasing in other areas<sup>140</sup>. The United Nations Conference on Trade and Development (UNCTAD) noted that over the past 25 years developing countries made major advances to ensure greater access to medicines. The number of people with regular access to essential medicines increased from two to four billion between 1997 and 2002. However, nearly two billion of the world's population, many of whom live in least-developed countries (LDC), still lack regular access to essential medicines<sup>141</sup>.

The DFID alludes that although significant progress has been made in increasing access to medicines, the benefits of this progress have been unequally distributed across the global population. Approximately two-thirds of the world's population are projected to have access to full and effective treatments with the medicines they need – leaving one-third without regular access, mostly in Asia and Africa<sup>142</sup>. This problem may worsen as resistance develops to key medicines, such as those for malaria, TB and pneumonia. Where new medicines are developed to replace those no longer effective, they are frequently more expensive and may also require more stringent supervision to ensure they are properly used<sup>143</sup>.

There is growing concern about the lack of access to quality and affordable essential medicines, especially in public facilities in Africa. The WHO suggests that the global HIV/AIDS pandemic continues to worsen. Around 40 million people are now living with HIV/AIDS, over 5 million infections occur each year, and 70% of all infections occur in Sub-

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<sup>140</sup> United Nations Conference on Trade and Development –UNCTAD. (2011a). 'Investment in pharmaceutical production in the least developed countries: A guide for policy makers and investment promotion agencies', UN: Geneva.

<sup>141</sup><sup>141</sup> United Nations Conference on Trade and Development -UNCTAD. (2011b). Local production of pharmaceuticals and related technology transfer in developing countries. Retrieved from [http://unctad.org/en/PublicationsLibrary/diaepcb2011d7\\_en.pdf](http://unctad.org/en/PublicationsLibrary/diaepcb2011d7_en.pdf).

<sup>142</sup> DFID (2004) 'increasing access to essential medicines in the developing world: UK government policy and plans' Retrieved from: [http://hospicecare.com/uploads/2011/8/dfid\\_access\\_medicines.pdf](http://hospicecare.com/uploads/2011/8/dfid_access_medicines.pdf).

<sup>143</sup> Ibid, pp 8-11

Saharan Africa. It is estimated that 6 million people are in need of anti-retroviral therapy but that most (around 93%) currently lack access to it due to lack of availability in public facilities<sup>144</sup>.

Improving access to medicines remains a challenge, especially in LMICs where out of pocket healthcare payments are high<sup>145</sup>. The UN report on Strengthening the Global Partnership for Development in a Time of Crisis highlights the existence of large gaps in the availability of medicines in both the public and private sectors, as well as a wide variation in prices which render essential medicines unaffordable to poor people<sup>146</sup>. The report found that in the public sector, generic medicines are only available in 38.1% of facilities, and on average cost more than the international reference price. In the private sector, those same medicines are available in 63.3% of facilities, but cost on average higher than the international reference price. High prices often render medicines unaffordable, with common treatment regimens costing a low-paid government worker several days' wages. The cost of treatment for chronic diseases is particularly unaffordable because of the need for lifelong treatment which is less amenable to short-term financial coping strategies<sup>147</sup>.

Apart from affordability, Penchansky cites 'models (dimensions) of access'<sup>148</sup> that can also be applied to ATM including; accessibility, accommodation, availability and acceptability. Moreover, there is prevalence of barriers in each dimension of access given the multi-faceted nature of Access.

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<sup>144</sup> See the WHO, World Health Report (2003-2012). World Bank, The MDGs for Health: Rising to the Challenge

<sup>145</sup> Access indicators developed by the World Health Organization. Retrieved from : <http://www.un.org/esa/policy/mdggap/appendix.pdf>.

<sup>146</sup> See. United Nations. (2012). the United Nations Gap task force report .

<sup>147</sup> United Nations Development Group. (2003). Indicators for Monitoring the Millennium Development Goals. United Nations, New York.

<sup>148</sup> Penchansky, R., & Thomas, J. W. (1981). The concept of access: definition and relationship to consumer satisfaction. *Medical care*, 19(2), 127-140.

The WHO, most governments, legislators and policy makers may not have adequately prepared to address the barriers to ATM given the fact that most national constitutions do not specifically recognize access to essential medicines or technologies as part of the fulfilment of the right to health. Out of 182 countries, only five countries specifically recognize access to essential medicines and technologies as part of the fulfilment of the right to health<sup>149</sup>. Also, regarding medicine policy updates, a large proportion of developing countries have national medicines policies, but many have not been updated in the past five years.

Another WHO study demonstrated that Access to essential medicines appears closely correlated with other indicators of health system performance, such as disability-adjusted life expectancy<sup>150</sup>. The study Demonstrated that getting the right medicines to the people who need them at the time they need them remains a major challenge that could potentially lead to inability to achieve health related goals. It has been suggested that Improving access to essential medicines and to health services more broadly, is therefore key to tackling ill health and reducing mortality rates in the developing world. Essential medicines save lives and improve health when they are available, affordable, of assured quality and properly used. However, lack of access to medicines remains one of the most serious global health problems<sup>151</sup>.

The UN and WHO have estimated that by improving access to existing medicines and vaccines, approximately 10 million lives could be saved every year: 4 million in Africa and South-East Asia alone. With the arrival of new medicines and vaccines, even more might be

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<sup>149</sup> World Health Organization. (2007). Questionnaire on structures and processes of country Pharmaceutical situations; Access to affordable essential medicines.

<sup>150</sup> World Health organisation. (2004). The World medicines situation. Chapter 7

<sup>151</sup> United Nations Millenium development Goals; goal 8 analysis. Retrieved from: <http://iif.un.org/content/essential-medicines>

achieved<sup>152</sup> if medicine prices are made more affordable. However, price is by no means the only barrier to access. Inadequate financing for health, poor priority setting, inappropriate drug selection and prescription, and weak health and supply systems – often with limited access for the poorest and most marginalised – also play a significant part in preventing people from getting the care they need<sup>153</sup>.

The United Nations Population Fund estimates that a lack of affordable medicines and other health commodities has a direct impact on the health of mothers and children. For instance, each \$1 million shortfall in support for contraceptives means an estimated: 360,000 more unwanted pregnancies; 150,000 additional induced abortions; 800 maternal deaths; 11,000 infant deaths; and 14,000 additional deaths of children under 5<sup>154</sup>. The United Nations argues that the burden of ill health and disease is such that even where relevant technologies and interventions exist and are known to be effective, many people will not get access to them. High levels of disease, suffering and death prevail due to the multifaceted nature of barriers to ATM<sup>155</sup>. Universally, more than 10 million children die every year, all but around 1% of these deaths occur in developing countries and more than half are caused by malnutrition, pneumonia, diarrhoea, measles, malaria and HIV/AIDS. Effective, low-cost interventions are available that could prevent at least two-thirds of these deaths but; such interventions were not easily reached at the right time and in the right quantity. Likewise, More than half a million women die each year of pregnancy-related Complications, 99% of them in

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<sup>152</sup> UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (2004) identified target product profiles for Kinetoplastids (Visceral and Cutaneous Leishmaniasis, African Trypanosomiasis, Chagas Disease), Helminths (Schistosomiasis, Onchocerciasis, Lymphatic Filariasis) Tuberculosis and Malaria

<sup>153</sup> World Health Organization 2010. Medicines: essential medicines Fact sheet N°325 Revised June 2010. Available : <http://www.who.int/mediacentre/factsheets/fs325/en/>

<sup>154</sup> See UNFPA website: [www.unfpa.org/supplies/essentials/1a.htm](http://www.unfpa.org/supplies/essentials/1a.htm) see also:

Real Lives, website: UN childrens fund [www.unicef.org/infobycountry/india\\_2044.html](http://www.unicef.org/infobycountry/india_2044.html)

<sup>155</sup> Indicators for Monitoring the Millenium development goals: Definitions, Rationale, Concepts and Sources.2012.available at: <http://mdgs.un.org/unsd/mi/wiki/8-13-Proportion-of-population-with-access-to-affordable-essential-drugs-on-a-sustainable-basis.ashx>

developing countries. Increasing the coverage of cost-effective interventions could reduce maternal mortality rates by as much as 74%<sup>156</sup>.

The WHO and HAI<sup>157</sup> argues that the availability of essential medicines does that imply utilization. There is need for people to accommodate, accept and believe in the efficacy of the medicine as well as the need for prescription by authorized personnel. This argument stems from the fact that the number of inappropriately prescribed medicines have soared over the years, especially with inadequate regulation of traditional medicines in most LMICs. A WHO global Survey<sup>158</sup> on traditional medicines advocates that given the popularity traditional medicines has maintained worldwide and the increase in use of herbal medicines, in many developed and developing countries. The safety and efficacy of traditional medicines, as well as quality control, has become key concerns for both health authorities and the public. The report revealed that people use herbal medicines due to the fact that it is cheap and within reach, yet, over 56% of the WHO member countries, do not have national policies for its regulation and quality control. The organisation recommends that countries set up regulatory frameworks for herbal medicines and also integrate Traditional medicines into health systems as a step towards overcoming barriers to ATM.

While there appear to be dearth of literature / research in the area of ATM in Nigeria, existing evidence from grey literatures in general, consistently demonstrate both the widespread inadequate Access to quality and affordable Essential Medicines and the significance of ATM in health systems. Nigeria and other LMICs may have achieved major feats in their struggle

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<sup>156</sup> THE LANCET .2009, 373: pp 240-49. Medicine prices, availability, and affordability in 36 developing and middle-income countries: a secondary analysis (by Cameron A, Ewen M, Ross-Degnan D, Ball D, Laing R.), London. Available from [www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61762-6/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61762-6/abstract). See also: The UNITED NATIONS .2009.MDG Gap Task Force Report: Strengthening the Global Partnership for Development in a Time of Crisis. New York.Retrieved from [www.un.org/millenniumgoals/pdf/MDG\\_Gap\\_Task\\_Force\\_Report\\_2009.pdf](http://www.un.org/millenniumgoals/pdf/MDG_Gap_Task_Force_Report_2009.pdf).

<sup>157</sup> World Health Organisation.(2008). Measuring medicine prices, availability, affordability and price components, 2nd (ed). Geneva. Retrieved from [www.haiweb.org/medicineprices/manual/documents.html](http://www.haiweb.org/medicineprices/manual/documents.html).

<sup>158</sup> World Health organization. (2005). National policy on traditional medicine and regulation of herbal medicines Report of a WHO global survey.

against counterfeit medicines, having reduced the percentage of fake medicines from 64% to 16% in the past four years; however, the barriers to ATM is multifaceted and goes beyond fake/ counterfeit medicines. The consensus among those who have examined ATM appears to be that:

- i. ATM is a global issue
- ii. Poor availability of medicines, particularly in public facilities, is a key barrier to access to affordable essential medicines in LMICs, especially for the poor
- iii. Adequate financing and affordable procurement prices are key determinants of medicine availability in the public sector
- iv. The high price of medicines, particularly in private facilities, is another major barrier to access to quality, affordable essential medicines in LMICs
- v. The availability of fake/ counterfeit and sub-standard medicines impedes access to quality, affordable and essential medicines
- vi. A large proportion of developing countries have national medicines policies on Bio medical and traditional medicines, but many have not been updated in the past five years
- vii. Most national constitutions do not specifically recognize access to essential medicines or technologies as part of the fulfilment of the right to health.

Finally, Therefore, there is need to conduct research; to investigate ATM and how paying more attention to improving ATM would affect health systems / healthcare delivery globally.

Even though a handful has been written on the state of ATM globally, there is scarcity of literature on in depth empirical assessment of ATM in Nigeria. There is lack of empirical investigation of the subject with regards to its interconnectedness to healthcare delivery in



Nigeria given the fact that Access to essential medicines is one of the key requirements for achieving equitable health systems and better health for the population.



## CHAPTER 2: LITERATURE REVIEW

Chapter one provided a background and established the framework and overview of the aims of the thesis. The aim of this chapter is to thoroughly understand the knowledge and ideas that have been established on Essential Medicines as well as Access to Essential medicines; and also the relevant theories relating to the key research question "To what extent can one begin to talk about the barriers of access to medicines in Nigeria?". An array of diverse sources were examined, carefully reviewed and assessed to establish and identify any potential gaps. The concepts, scopes and frameworks that are assessed in this study are very pertinent and allowed for the current research to be situated to others.

### 2.1. Essential Medicines and its supply

As the literature shows, essential medicines are not just simply what they are either as a notion or as a list of medicines. The definition of essential Medicines used is the (2002 ) definition by the World Health Organization which states that “essential medicines are those that satisfy the priority health care needs of the population; selected with due regard to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness. These medicines are intended to be available within the context of functioning health systems at all times in adequate amounts, in the appropriate dosage forms, with assured quality and adequate information, and at a price the individual and the community can afford”<sup>159</sup>. Even though the original concept of essential medicines was cited in the ten points of the Alma Ata declaration of 1978 on healthcare, the definition was drawn in 1977 by the WHO but heavily criticized due to difficulty in putting it into practise. The 1977 definition was later amended and gave way to the 2002 definition.

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<sup>159</sup> WHO:2002

Richard et al<sup>160</sup> reviewed the list's history, evolution, application by countries, controversies, and future challenges. They suggested that after twenty five years of having an essential medicines list, a lot of countries were yet to implement essential medicines policies at the national level , and this has led to a greater disease burden. It was noted that the WHO was also lagging behind by neglecting its responsibility of addressing the issue of the lack of pharmaceutical research and development for health needs in developing countries<sup>161</sup>. Considering the fact that a little over a percentage of medicines developed in the past years has been targeted at these diseases, despite the substantial burden that they cause in developing countries. Part of the questions asked was “Where will the new essential medicines for meeting needs specific to developing countries come from?”<sup>162</sup>

Another fundamental observation made by these reviewers is the fact that public private partnership efforts by the pharmaceutical industry is still focusing on diseases where there is an economic incentive , such as malaria, Tuberculosis , AIDs, etc. they also questioned the fact that most AIDs medicines are produced in what could be termed an ‘effective monopoly’. These challenges are heavy contributors to the problems of access to essential medicines, despite several efforts made by the WHO to provide an evidence based list. Their review set perspective for future research on the challenges of access to essential medicines given the fact that despite the efforts made by the WHO to bridge the gap of access to essential medicines, it is more likely to be the case that a lot of people in the world still lack effective access to essential medicines. ‘The original insight that a restricted list of well-chosen medicines could meet the needs of most of the world remains as valid now as it did in

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<sup>160</sup> Laing, R., Waning, B., Gray, A., Ford, N., & 't Hoen, E. (2003). 25 years of the WHO essential medicines lists: progress and challenges. *The Lancet*.

<sup>161</sup> Trouiller, P., Olliaro, P., Torreele, E., Orbinski, J., Laing, R., & Ford, N. (2002). Drug development for neglected diseases: a deficient market and a public-health policy failure. *The Lancet*, 359(9324), 2188-2194.

<sup>162</sup> opcit

1977. However, the fundamental human right to access to these medicines remains a challenge and will require further action at the national and international levels<sup>163</sup>.

Nigeria adopted the WHO EM list and by 1990, published its first National Medicines Policy to improve access to and rational use of medicines. By 2005, the list was improved upon with recommendations on how to improve access to essential medicines. Part of the recommendation was to develop a well-organized and cost effective method for the manufacture and distribution of medicines. However, there is abundant evidence that the storage and distribution system still faces administrative problems which hinders the availability of essential medicines in the country.

In considering a comparison of the level of availability and rational use of drugs in primary health care (PHC) facilities where the Bamako Initiative (BI) drug revolving fund programme has been operational, with PHC centres where the BI-type of drug revolving fund programme is not yet operational, Uzochukwu et al<sup>164</sup> in a study conducted in south east Nigeria found evidence that an average of 35.4 essential drugs was available in the BI health centres compared with 15.3 in the non-BI health centres. Also, that the average drug-stock was adequate for 6.3 weeks in the BI health centres, but for 1.1 weeks in non-BI health centres. There were more injections (64.7 vs. 25.6%) and more antibiotics (72.8 vs. 38%) prescribed in BI health centres than in the non-BI health centres. The BI health centres had an average of 5.3 drugs per prescription against 2.1 in the non-BI health centres. However, the drugs prescribed by generic name and from the essential drug list were higher in the BI health centres (80 and 93%) than the non-BI health centres (15.5 and 21%, respectively). The study concluded that the BI facilities had a better availability of essential drugs both in number and

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<sup>163</sup> ibid

<sup>164</sup> Uzochukwu B.S., Onwujekwe O.E., & Akpala C.O. (2002)., Effect of the Bamako-Initiative drug revolving fund on availability and rational use of essential drugs in primary health care facilities in south-east Nigeria. *Health Policy Plan*,17(4):378

in average stock. However, the BI has given rise to more medicine prescribing, which could be irrational. The findings called for policies and other approaches that will guarantee the availability of essential medicines, especially in the non-BI PHC centres as a way of reducing medical costs as well as improving the quality of PHC services, while encouraging rational medicine use in all PHC centres. It is evident from this research that focus group discussions or structured interviews should be undertaken to find out reasons for the over-prescription and to develop future interventions to correct this.

Similar findings were reported from research<sup>165</sup> that was carried out at the Directorate of Pharmaceutical services, Federal Ministry of Health (F.M.O.H) Abuja and Federal Medical Stores, Oshodi, Lagos. The research set out to identify the policies and procedures for public medicine supply in Nigeria; evaluate its functionality, and recommend suitable strategies that will guarantee regular availability of safe, effective, good quality and affordable essential medicines at public health facilities.

The key research methods used in this study were structured questionnaires and Semi-structured interview which was conducted with employees of the Department of Food & Drugs, Drug procurement unit and Central Medical store. The research indicated that public medicine supply in Nigeria is governed by a National Drug Policy -NDP which was introduced in 1990 and was not reviewed after several years which perhaps one can argue is against assessment policies. The Central Medical Store -CMS system was also identified as the current public medicine supply scheme in Nigeria. The study also revealed that public medicine supply is mainly bankrolled by governments and this creates a lot of backlogs and not enough to guarantee sustainable availability of essential medicines. Their findings further indicated that the main procurement procedures in use are open tender and direct

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<sup>165</sup> Yusuff, K.B, Tayo, F. (2004). Drug supply strategies, constraints and prospects in Nigeria. *African Journal of Med Sci*, 33(4):389-394.

procurement. These procedures as currently operated, suffer from late order placement, delay in payment and poor supplier lead-time largely attributable to delayed payment for previous medicine supplies. These have contributed to stock out of essential medicines at public health facilities. Major losses due to expiration and rot are recorded at both central and peripheral storage points despite appropriateness of storage facilities and personnel. The research cited road transportation as the major mode of medicine distribution from central to peripheral storage points and shortage of vehicle as a key factor affecting medicine distribution. Further reports from the study showed that there was an obvious lack of a functioning medicine management information system to efficiently coordinate public medicine supply. Furthermore, there were no clearly defined systems for monitoring and evaluating staff performance.

From all indication, the Central Medicine Store strategy currently being used for public medicine supply in Nigeria has not guaranteed consistent availability of essential medicines at public health facilities. Thus, the study suggested that the CMS was more of an administrative failure and by extension, the lack of access to essential medicines in Nigeria could be said to be a result of administrative negligence. Public medicine supply system in Nigeria is therefore in need of urgent restructurings and this could be accomplished through the use of an independent medicine supply agency that will guarantee proficiency and sustainability.

According to Millot<sup>166</sup>, focusing on supply leans towards down playing other issues affecting essential medicines and rational use of medications. Actually, deviations could be found in operative application of cost recovery and in the pricing mechanism for peripheral medications. Prescription of generic medicines and their availability in health facilities remains a problem particularly for outpatients and patients with chronic illnesses. Outlying

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<sup>166</sup> Millot G. (2006). Access to essential medicines in Africa: a global approach. *Med Trop (Mars)*. 66(6),558-564.

storage facilities need to be upgraded to ensure that pharmaceutical products attained strict quality assurance requirements. This situation underlines the need to develop local competencies and further establish effective and sustainable national procurement infrastructures. Also, the presence of a thriving and dangerous illicit market will necessitate a stronger action from national authorities and better harmonization between sectors.

Beyond medicines supply mechanisms, patents, socio-economic, international and national policies are other possible explanations for the lack of access to medicines in general. For example, Attaran<sup>167</sup> after studying the relationship between patents and access to EM showed that in sixty-five low- and middle-income countries, where four billion people live, patenting is rare for 319 products on the World Health Organization's Model List of Essential Medicines. Only seventeen essential medicines are patentable, though typically not really patented, so that overall patent rate is low (1.4 percent) and focused in bigger markets. His results gives insight on the policy discourse among public health activists, the pharmaceutical sector, and governments which is frequently based on mistaken principles about how patents affect corporate revenues or the health of the world's poorest. The article urged greater rationality and flexibility, so as to enable and encourage policy concentration on the larger causes of widespread mortality, which poses unparalleled threats to global peace and security.

Research findings about irregular medicine availability, supply and the need for local production in order to overcome administrative backlogs were reported from studies by Lanoska<sup>168</sup>, Seiter<sup>169</sup>, Elbeshbishi<sup>170</sup>, Chaudhuri<sup>171</sup>, Anderson<sup>172</sup>, Owoeye<sup>173</sup>, Hoen et al<sup>174</sup>,

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<sup>167</sup> Attaran . A. (2004). How do patents and economic policies affect access to essential medicines in developing countries? *Health Aff (Millwood)*,23(3),155-166.

<sup>168</sup> Lanoszka A. (2003). 'The global politics of intellectual property rights and pharmaceutical drug policies in developing countries', *International political science review*, 24(2), 181-97.

<sup>169</sup> Seiter A. (2005). 'Pharmaceuticals: Local manufacturing', HNP#3 discussion paper, World Bank: Washington, DC

<sup>170</sup> Elbeshbishi A.N. (2007). 'TRIPS and public health: What should African countries do?' ATPC Work in progress No. 49, Economic Commission for Africa: Addis Ababa

Sampath and Roffe<sup>175</sup>, Holt et al<sup>176</sup>. However, what is obvious here is that all these studies were carried out in other countries (East and Southern African countries) and they focused mainly on local medicine production and how International actors exert their influence on medicines production and markets in the sub Saharan African region. Whereas, studies conducted in Nigeria showed that local production of medicine in the country would be potentially expensive; given the fact that, the essential supporting industry and infrastructure is not in place. They further stated that the reason why Nigeria cannot manufacture APIs – Active Pharmaceutical Ingredients is because petrochemical and chemical industries in the country are underdeveloped. Petrochemicals are the starting point for pharmaceutical raw materials<sup>177</sup>. These studies (mentioned in the earlier paragraph) showed that a number of East and Southern African countries rely on India and China for imports of affordable generics and raw materials, although through unreliable medicine supply systems. The literatures provided evidence of rising international interest in local production of medicines across African countries, especially in ESA countries. They noted the huge interconnectedness and vulnerability to global health threats. For instance, those studies stated that with the globalisation of trade, travel and pathogens, insufficient global production capacity for drugs can create shortages that affect all countries and reduce aggregate global capacity to respond to pressing health threats. And, recent controversies around stockpiling of drugs and vaccines

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<sup>171</sup> Chaudhuri, S. (2008). Indian generic companies, affordability of drugs and local production in Africa with special reference to Tanzania. *Documento de trabajo*, (37).

<sup>172</sup> Anderson, T. (2010). 'Tide turns for drug manufacturing in Africa,' *The Lancet*, 375 (9726):1597-98.

<sup>173</sup> Owoeye, O. (2011). The WTO TRIPS agreement, the right to health and access to medicines in Africa. In *34th AFSAAP Conference 2011 Flin*

<sup>174</sup> Hoen, E. T., Berger, J., Calmy, A., & Moon, S. (2011). Driving a decade of change: HIV/AIDS, patents and access to medicines for all. *Journal of the International AIDS Society*, 14(1), 15.

<sup>175</sup> Sampath, P. G., & Roffe, P. (2012). Unpacking the international technology transfer debate: fifty years and beyond. *ICTSD, Issue Paper*, 36.

<sup>176</sup> Holt, F., Gillam, S. J., & Ngondi, J. M. (2012). Improving access to medicines for neglected tropical diseases in developing countries: Lessons from three emerging economies.

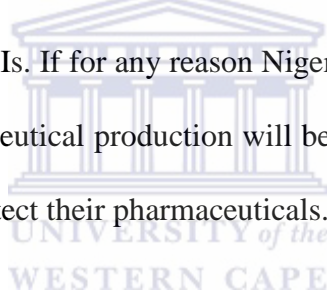
<sup>177</sup> Businessday online. June 18<sup>th</sup>, (2013). Drug manufacturing in Nigeria. Retrieved from ; <http://businessdayonline.com/2013/06/drug-manufacturing-in-nigeria/#.VA7cqPm1aRY> . Accessed on : 9<sup>th</sup> sept, 2014.



for pandemic flu (e.g. with respect to the H5N1 and H1N1 viruses) highlight the urgency of better understanding of current policies and practices around local production and technology transfer.

The studies listed earlier (see reference 188 to 196) highlighted challenges to local medicine production in the region and sought to inform follow-up case study work on the extent to which relationships and agreements with Brazil, India and China are addressing the challenges identified in African Union, SADC and EAC plans for pharmaceutical manufacturing which would help in addressing the problems of ATM.

When considering local production of medicine in Nigeria, it should be noted that the cost of finished pharmaceutical products is not in the hands of Nigeria; it is determined to a large extent by the cost of imported APIs. If for any reason Nigerian pharmaceutical companies are not able to import APIs, pharmaceutical production will be affected unlike in other countries where trade relations policies protect their pharmaceuticals.



## **2.2. Access to Essential Medicines and its Challenges in other Countries**

Studies carried out in other countries have proven that improving access to essential medicines depends upon the economics of supply, in-terms of balancing costs and the flow of funds available. However, Ashcroft<sup>178</sup> argues that the constraints of accessing essential medicines lies basically on patent protection which permits the patent-holders to control their patents and enjoy monopoly on their production and supply, as well as pricing medicines higher than the marginal cost. His argument is in support of states' sovereign right to seize private intellectual property in circumstances pertaining to public health crisis. Based on the principles of social contract and the legitimacy of states, his argument shows that under certain circumstances, states are not simply permitted nor compelled to issues inventions

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<sup>178</sup> Ashcroft R. E. 2005. Access to essential medicines: a Hobbesian social contract approach. *Dev World Bioeth.* 2005 May;5(2):121-41

licenses, rather, it is their utmost obligation to do so, on pain of failure of their legitimacy as sovereign states. The article suggested by Ashcroft drew freely on a loose interpretation of Thomas Hobbes's arguments in his *Leviathan*, and on an analogy between his state of War and the situation of public health disasters. Essential medicines are key for saving and preservation of lives in situations of public health emergency or prevalent diseases. Yet, in most LMICs such medicines are either scarce or very expensive for the majority of those in need of them.

Saleh and Ibrahim<sup>179</sup> assessed the pharmaceutical sector in Malaysia to know whether people had access to essential medicines. They reported that the pharmaceutical situation within the context of essential medicines list implementation reflected that the majority of the people in Malaysia had access to affordable essential medicines when purchased in public facilities. (this contradicts a WHO report which stated that “Poor availability of medicines, particularly in the public sector, is a key barrier to access to affordable essential medicines in developing countries, especially for the poor”<sup>180</sup>) However, if medicines needed to be purchased from the private sector, they were barely affordable. Even though the average availability of essential medicines in Malaysia was high being more than 95.0% in certain areas, in Sabah availability was less than 80.0% and still posed a problem. The study was conducted in 20 public health clinics, five public district medicine stores and 20 private retail pharmacies

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<sup>179</sup> Saleh, K., & Ibrahim, M. I. (2005). Are essential medicines in Malaysia accessible, affordable and available?. *Pharmacy World and Science*, 27(6), 442-446. Retrieved from:

<http://www.ncbi.nlm.nih.gov/pubmed/16341951>

<sup>180</sup> WHO. 2008. Access to Affordable Essential medicines . the WHO measured Availability of selected medicines in public and private health facilities between 2001 and 2007 (percentage); Surveys of medicine prices and availability using WHO/HAI standard methodology (available from <http://www.haiweb.org/medicineprices/>).

Notes: (1) Where multiple state or provincial surveys have been conducted (China, India, the Sudan), results from individual surveys have been averaged without weighting. (2) Number of countries in the sample: among developing countries, there were 27 and 30 countries for the public and private sectors, respectively; Northern Africa, 3 countries; sub-Saharan Africa, 9; Latin America and the Caribbean, 2; Central Asia, 2 for the public sector and 4 for the private sector; East and South Asia, 7 for the public sector and 6 for the private sector; Western Asia, 5 for the public sector and 6 for the private sector.

selected randomly in five different areas randomly selected (four states and a federal territory).

The research methodology used for this study was adopted from the WHO study protocol and the degree of attainment of the strategic pharmaceutical objectives of improved access was measured by a list of tested indicators. 'Access' was measured in terms of the availability and affordability of essential medicines, especially to the poor and in the 'public sector'. The first survey in the public health facilities and public district medicine stores gathered information about existing availability of essential medicines, prevalence of stock-outs and affordability of treatment (except medicine stores). The second survey assessed affordability of treatment in public health facilities and private retail pharmacies. Even though this research used what could be considered a marginal sample size (the ratio of public facility to private didn't really reflect whether the population was well served), the empirical investigation could be considered incomplete and therefore not enough for one to conclude essential medicines are available and affordable in Malaysia, considering the fact that 'Access' as defined by the UNDP & WHO means 'having medicines continuously available and affordable at public or private health facilities or medicine outlets that are within one hour's walk from the home of the population'<sup>181</sup>. Also, the research did not address other aspects of access such as whether access led to improved utilization and by extension, improved health.

The study further stated that the average availability of key medicines in the public health clinics for the country was 95.4%. The average stock-out duration of key medicines was 6.5 days. However, average availability of key medicines in the public district medicine stores was 89.2%; with average stock-out duration of 32.4 days. Medicines prescribed were 100% dispensed to the patients. Average affordability for public health clinics was 1.5 weeks salary

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<sup>181</sup>United Nations (2003). indicators developed by the World Health Organization are available from <http://www.un.org/esa/policy/mdggap/appendix.pdf>. United Nations Development Group, Indicators for Monitoring the Millennium Development Goals .*United Nations*, New York.

and for the private pharmacies, 3.7 weeks salary. Of the three approaches to understanding ‘Access’, the study only focused on one aspect which is health services<sup>182</sup>. Consequently, this study analyses ATM within the context of health services and health Seeking’. The study also suggested that the high price of medicines, particularly in the private sector, is another key barrier to access to affordable essential medicines in developing countries. This suggestion echoes a previous study carried out by the WHO<sup>183</sup> which noted that due to the often low public sector availability of medicines, patients are normally forced to buy medicines from private facilities, where prices are higher. In the 33 developing countries for which data are available, lowest-priced generic medicines cost a lot more higher than International Reference Prices in the private sector than in the public facilities<sup>184</sup>.

People living in Low and middle income countries represent one third of the world’s population, yet, they are among the most underserved in terms of access to affordable essential medicines<sup>185</sup>. In 2002, there were almost 6 million deaths from HIV / AIDS, TB and malaria and these deaths occurred mainly in developing countries as a result of them not having access to medicines.<sup>186</sup> Perhaps, if they had, a lot may have survived. The WHO estimates that by 2015 over 10.5 million lives could be saved every year by increasing access to existing health interventions to prevent or treat infectious diseases, maternal and perinatal

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<sup>182</sup>Obrist, B., Iteba, N., Lengeler, C., Makemba, A., Mshana, C., Nathan, R., ... & Mshinda, H. (2007). Access to health care in contexts of livelihood insecurity: a framework for analysis and action. *PLoS Med*, 4(10), 1584-1588. Retrieved from: [www.plosmedicine.org](http://www.plosmedicine.org) . there are three approaches to understanding access; Health Seeking –studies that ask the questions –Why, when, how individuals, social groups and communities seek access to health care services and investigate interactions between lay persons and professionals  
Health services –Concentrate on factors influencing access to health care, which they commonly define as utilization rates

Livelihoods –Emphasize assets (including material and social resources) and activities needed to gain and sustain a living under conditions of economic hardship

<sup>183</sup> World Health Organization.(2007). Questionnaire on structures and processes of country pharmaceutical situations.

<sup>184</sup>van Mourik, M. S., Cameron, A., Ewen, M., & Laing, R. O. (2010). Availability, price and affordability of cardiovascular medicines: a comparison across 36 countries using WHO/HAI data. *BMC Cardiovascular disorders*, 10(1), 25. Retrieved from <http://www.haiweb.org/medicineprices/>.

<sup>185</sup> DFID.2005. Increasing people’s access to essential medicines in developing countries: A framework for good practice in the pharmaceutical industry. A UK governments policy paper.

<sup>186</sup> WHO (2004). Medicines Strategy: Countries at the Core 2004 – 2007 .

conditions, childhood diseases, and non-communicable diseases. Most of these interventions depend on essential medicines<sup>187</sup>. Despite being one of the biggest exporters of pharmaceutical products and medicines to Nigeria and other African countries, an estimated 50–65 percent of the total population in India, lack access to affordable essential medicines.

The problems in accessing affordable essential medicines in Delhi, India, as noted by Chaudhury et al<sup>188</sup> were further aggravated by administrative negligence prior to 1994. However, with the introduction of a new medicines policy, post 1994, access to essential medicines improved. “Prior to 1994, most Delhi hospitals and dispensaries experienced constant shortages of essential medicines. There was erratic prescribing of expensive branded products, frequent complaints about poor drug quality and low patient satisfaction. Delhi took the lead in developing a comprehensive Drug Policy in 1994 and was the only Indian state to have such a comprehensive policy. The policy's main objective was to improve the availability and accessibility of quality essential drugs for all those in need. The Delhi Society for the Promotion of Rational Use of Drugs (DSPRUD), a non-governmental organization, worked in close collaboration with the Delhi Government and with universities to implement various components of the policy. The first Essential Drugs List (EDL) was developed, a centralized pooled procurement system was set up and activities promoting rational use of drugs were initiated. In 1997, the Delhi Programme was designated the INDIA-WHO Essential Drugs Programme by the World Health Organization. The EDL was developed by a committee consisting of a multidisciplinary group of experts using balanced criteria of efficacy, safety, suitability and cost. The first list contained 250 drugs for hospitals and 100 drugs for dispensaries; the list is revised every 2 years. The pooled procurement system, including the rigorous selection of suppliers with a minimum annual threshold

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<sup>187</sup> World Health Organisation. (2004). Between 1.3 and 2.1 billion people. The World Medicines Situation,61.

<sup>188</sup>Chaudhury R.R., Parameswar R., Gupta U., Sharma S., Tekur U., & Bapna J.S. (2005) .Quality medicines for the poor: experience of the Delhi programme on rational use of drugs. Health Policy Plan. 20(2),124-36. Retrieved from: <http://www.ncbi.nlm.nih.gov/pubmed/15746221>.

turnover and the introduction of Good Manufacturing Practice inspections, resulted in the supply of good quality drugs and in holding down the procurement costs of many drugs. Bulk purchasing of carefully selected essential drugs was estimated to save nearly 30% of the annual drugs bill for the Government of Delhi, savings which were mobilized for procuring more drugs, which in turn improved availability of drugs (more than 80%) at health facilities. Further, training programmes for prescribers led to a positive change in prescribing behaviour, with more than 80% of prescriptions being from the EDL and patients receiving 70-95% of the drugs prescribed. These changes were achieved by changing managerial systems with minimal additional expenditure. The 'Delhi Model' has clearly demonstrated that such a programme can be introduced and implemented and can lead to a better use and availability of medicines”<sup>189</sup>. It is noticeable that this study was not carried out empirically. Although the problem was well formulated, the scope and significance as well as relevance to other countries and situations were not clearly established. The study also lacked a clear theoretical framework. The focus of the analysis in this article could be said to be targeted at government policies and from a more peripheral angle. It lacked detailed articulation of how the pooled medicine procurement strategy helped in easing the problem of access to the ordinary people. Although when compared to Nigeria, India seemed to have done a better job at introducing a procurement system that is more effective than the CMS – Central medicine storage system used in Nigeria which seems to create more problems than solutions in the Nigerian pharmaceutical system. From the foregoing, it is quite obvious that one of the main reasons for lack of access to EM in LMICs is unreliable medicines supply. According to the WHO<sup>190</sup> Failures in supply systems and inefficient procurement cause shortages and wastes scarce resources especially in Africa and Asia.

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<sup>189</sup> *ibid*

<sup>190</sup> World Health Organisation. (2004-2007) Medicines Strategy

A study conducted by the WHO<sup>191</sup> in 2004 showed that getting the right medicines to the people who need them at the time they need them remained a major challenge. The study established that imbalances in access to medicines reflect failures in health systems and medicines policies across countries. They noted that access to essential medicines remained a major objective of people everywhere, and widely featured as an objective of countries' national medicines policies. In a strategy document for 2000–20031, the WHO considered enhanced access to essential medicines a priority health issue. The WHO Survey asked local medicines expert in each country to estimate the percentage of the population who had access to a minimum list of 20 essential medicines, which were continuously available and affordable at a health facility or medicines outlet, within one hour's walk from the patients' home. Responses to this question showed that 30 % of the world's population did not have regular access to the medicines they need. Furthermore, there was a clear relationship between economic level (purchasing power) and ability to access medicines.

The limited empirical studies of ATM especially in Nigeria point consistently to serious neglect and abuse of the rights of individuals to affordable essential medicines in poor countries. Cameron et al<sup>192</sup> after conducting a secondary analysis of medicine availability in 45 national and subnational surveys done using the WHO/HAI methodology, found that; Average public sector availability of generic medicines ranged from 29.4% to 54.4% across WHO regions. Median government procurement prices for 15 generic medicines were 1.11 times corresponding international reference prices, although purchasing efficiency ranged from 0.09 to 5.37 times international reference prices. Low procurement prices did not always translate into low patient prices. Private sector patients paid high international

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<sup>191</sup> World Health Organisation. (2004). The world medicines situation

<sup>192</sup> Cameron, A., Ewen, M., Ross-Degnan, D., Ball, D., & Laing, R. (2009). Medicine prices, availability, and affordability in 36 developing and middle-income countries: a secondary analysis. *The lancet*, 373(9659), 240-249.

reference prices for lowest-priced generic products and a lot more international reference prices for originator products across WHO regions. Treatments for acute and chronic illness were largely unaffordable in many countries. In the private sector, wholesale mark-ups ranged from 2% to 380%, whereas retail mark-ups ranged from 10% to 552%. In countries where value added tax was applied to medicines, the amount charged varied from 4% to 15%.

Generally, public and private sector prices for originator and generic medicines were substantially higher than would be expected if '*purchasing and distribution*' were efficient and mark-ups were reasonable. Policy options such as promoting generic medicines and alternative financing mechanisms are needed to increase availability, reduce prices, and improve affordability. The authors clearly defined and articulated the research perspective. In the basic components of the study such as population, intervention and outcome are quite good. However the accuracy and validity of the measurements would have to be tested by a follow up research from an independent or private researcher using a different tool/ methods other than the WHO/ HAI methods.

As for the research method, data from 45 WHO/HAI surveys in 36 countries were adjusted for inflation or deflation and purchasing power parity. International reference prices from open international procurements for generic products were used as comparators. Results are presented for 15 medicines included in at least 80% of surveys and four individual medicines.

Videau<sup>193</sup> indicates that due to deteriorating economic conditions and poor implementation of existing pharmaceutical and customs regulations, low income countries are faced with a growing threat from counterfeit and substandard medicines. With the expansion of illicit markets in urban areas, the sales of medicines of uncertain quality and origin are increasing. Most victims of this illicit trade are among the world's poorest populations that cannot afford

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<sup>193</sup> Videau, J. Y. (2006). [Quality of medicines in least developed countries]. *Medecine tropicale: revue du Corps de sante colonial*, 66(6), 533-537.



to buy quality medicines through private-sector distribution channels. He suggested that national pharmaceutical programs promoting universal access to essential generic medicines at rational cost are the key to reducing this problem. A system based on strict, balanced pharmaceutical purchasing and distribution policies with quality assurance at every level of the supply chain is needed to guarantee that patients receive safe effective high quality healthcare products. Videau, again, points to the fact that essential medicines are not affordable especially in private facilities. Even though, the perceptions of this publication possibly might not match veracity due to the lack of empirical research. However, affordability, supply, distribution and storage procedures seem to increase the challenges people face in their quest to access essential medicines. Implementation of Essential medicines policies by most countries may not be the problem, rather, the problem as indicated by most theoretical and empirical studies lie within the cost, distribution and administrative processes in most LMICs. These studies of access to affordable essential medicines have emphasized the importance of having a good administrative system with regards to the distribution, supply and storage of essential medicines in order to ensure that neglected diseases are treated while existing treatments are made available to people who cannot afford them<sup>194</sup>.

Seruba<sup>195</sup> postulates that since the first WHO Model List of Essential Medicines was adopted in 1977, it has become a popular tool among health professionals and Member States. The WHO's combined effort with the United Nations Committee on Economic, Social and Cultural Rights has resulted in the inclusion of access to essential medicines in the core content of the right to health. The Committee states that the right to health contains a series of elements, such as availability, accessibility, acceptability and quality of health goods,

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<sup>194</sup> Access to medicines Foundation. (2010). Access to medicine index. June 2010

<sup>195</sup> Seuba, X. (2006). A human rights approach to the WHO Model List of Essential Medicines. *Bulletin of the World Health Organization*, 84(5), 405-407.

services and programmes, which are in line with the WHO statement that essential medicines are intended to be available within the context of health systems in adequate amounts at all times, in the appropriate dosage forms, with assured quality and information, and at a price that the individual and the community can afford. He considers another outlook by considering the obligations to respect, protect and fulfil the right to health undertaken by the states adhering to the International Covenant of Economic, Social and Cultural Rights (ICESCR) and explores the relationship between access to medicines, the protection of intellectual property, and human rights.

Moving forward, another survey<sup>196</sup> was conducted in Senegal on a representative sample of providers and clients. Results showed that access to medicines in Senegal was limited due to the fact that the supply of medicines was insufficient, critical medicines were regularly missing in health facilities, and medicines were fairly less in pharmacies. Secondly, the health structures appeared inadequate and unable to cater for the needs of the entire population thereby creating high opportunity costs. Furthermore, the cost of medicines prescribed was higher than the minimum price, oftentimes beyond the capacity of poor people, even though high cost was rarely stated as the key reason for not purchasing prescribed medicines. Thus, improving access to medicine remains top priority to help reduce health inequalities in developing countries.

According to Tetteh<sup>197</sup>, Medicines are integral of any healthcare system, and limited access to medicines undermines health systems' objectives of equity, efficiency and health development. In African countries, where it is estimated that 50-60% of the populace lack "access" to essential medicines, health problems associated with limited medicine benefits are

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<sup>196</sup> Garenne, M., Candau, D., Guimier, J. M., Badiane, M., Diop, A. C., & Teulières, L. C. (2006). Access to medicines in Senegal: results of a sample survey. *Tropical doctor*, 36(1), 5-8.

<sup>197</sup> kwabena Tetteh, E. (2008). Providing affordable essential medicines to African households: the missing policies and institutions for price containment. *Social Science & Medicine*, 66(3), 569-581.

more damaging. However, there is no single solution to medicine access problem given its multiple dimensions: availability, acceptability, affordability and accessibility. The paper explored affordability dimension of medicine access and focuses exclusively on price regulatory policies and institutional structures that national and international policy makers may consider in making prices of essential medicines well-suited to the purchasing power of African households. His argument is the application of the concept of bilateral dependence in creating price-sensitive purchasers to exert countervailing market power on medicine price setting in African healthcare systems.

According to the view of Access to essential medicines as a human right<sup>198</sup>, national governments have to implement policies that safeguard rights to healthcare and make sure that statutory and other legal provisions on the fundamental right to the enjoyment of the highest attainable standard of health, on the right to life and on the right to non-discrimination are in place<sup>199</sup>. In line with this view, The WHO Essential Medicines Programme suggested its willingness to assist countries in developing and implementing a national medicines policy to fulfil these obligations by collecting data monitoring access to essential medicines by disadvantaged and vulnerable groups. Such assessment will go a long way in the establishment of national essential medicines programmes.

General dissatisfaction with the level of medicines available in public facilities and affordability in private ones has become an acceptable state of ATM in most LMICs<sup>200</sup>.

Another survey<sup>201</sup> formalized this idea: according to a survey on Access to Essential Medicines in Kenya which was undertaken as part of the WHO Level II Pharmaceutical

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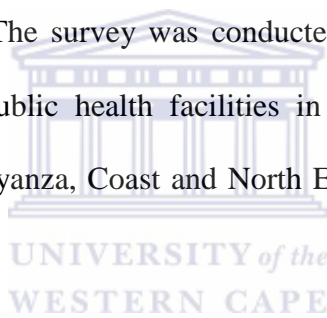
<sup>198</sup>Hogerzeil, H. V., Samson, M., Casanovas, J. V., & Rahmani-Ocora, L. (2006). Is access to essential medicines as part of the fulfilment of the right to health enforceable through the courts?. *The Lancet*, 368(9532), 305-311.

<sup>199</sup>Hogerzeil, H. V. (2004). The concept of essential medicines: lessons for rich countries. *BMJ*, 329(7475), 1169-1172.

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<sup>201</sup> Published by the Ministry of Medical Services and Ministry of Public Health & Sanitation [www.health.go.ke](http://www.health.go.ke) December 2009 Access to Essential Medicines in Kenya: A Household Survey.

Situation Assessment (PSA) for Kenya and aimed at providing systematic data on access to essential medicines, from the perspectives of the healthcare System (Health Facility Survey) and of households (Household Survey). The poorest households were unable to pay for medicines even when such medicines were available in nearby facilities. Furthermore, over 70 percent of surveyed households complained that even when public facilities were closer to their homes, they did not have access to the medicines they needed at those facilities. A lot of people fail to take prescribed medicines due to the fact that they cannot afford those medicines; hence, they resort to self-medication of traditional medicines. Unreliable medicines availability and persistent shortage of essential medicines were reported in public facilities where majority of the poor seek medical care due to the provision of free medicare by most national governments. The survey was conducted in 30 households and clustered around six selected reference public health facilities in six of Kenya's eight provinces: Nairobi, Rift Valley, Western, Nyanza, Coast and North Eastern (i.e. a total of 36 reference facilities and 1,080 households).



As medicines prices are quite high in private facilities and most essential medicines unavailable / insufficient in public facilities, there might be chances that this has contributed to the proliferation of cheap counterfeits, sub standards and self-medication. Conversely, then the seeming positive relationship between high markups(ad ons) and unaffordability may further lead to a decline in access to essential medicines as suggested by a study of prices people pay for medicines in Zimbabwe<sup>202</sup>. Designed as a cross sectional one, the study collected, analysed, compared prices of medicines in different sectors and parts of Zimbabwe to medicine prices in other countries. it was discovered that Innovator brands in the private sector were priced much more higher than the International References Prices (IRP) and more than the price of generic medicines. Dispensing doctors were charging maximum prices for

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<sup>202</sup> Gavaza P1, Simoyi T, Makunike B, Maponga CC. (2009) The prices people pay for medicines in Zimbabwe. Central African Journal of Medicine. 2009 Jan-Apr;55(1-4):14-9.

medicines and the public sector had the least prices. The national procurement agency, NatPharm, procured medicines at prices slightly below the Management Sciences for Health (MSH) prices. Prices of medicines in the public sector were higher than average prices for medicines from seven other African countries. Pharmacy outlets in Zimbabwe comprising 27 retail pharmacies, 23 dispensing doctors, eight public hospital pharmacies and seven municipal clinics were used as sample size for the study.

Medicine prices are high in Zimbabwe, a situation that has compromised affordability and accessibility to medicines especially by the poor as suggested by empirical evidence from other countries assessment.

Furthermore, Carasso, Lagarde and Palmer<sup>203</sup> studied the availability and cost of essential medicines in health centres in rural Ethiopia, and investigated whether the fee waiver system protected patients from paying for medicines. They found that the availability base of essential medicines at facility level was 91% based on a list of selected medicines versus 84% based on prescriptions filled. Though, less than half the prescribed medicines were obtained from the cheap medicines stores, and one in six patients was forced to buy medicines from private facilities, where medicines are approximately twice as expensive. After all, the waiver system did not safeguard against having to pay for medicines. The setting for the study was in five health centres in countryside. Availability and price of selected key essential medicines were stated in the budget and special pharmacy of the health centre, as well as private outlets. The study noted that information on availability and cost of prescribed medicines were obtained through patient exit-interviews. It would not be out of place to say that obtaining information from patient –exit interviews does not sound convincing enough for a rational and valid conclusion. Perhaps, interviewing the doctors,

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<sup>203</sup> Carasso B.S., Lagarde M, Tesfaye A, Palmer N. (2009). Availability of essential medicines in Ethiopia: an efficiency-equity trade-off? *Trop Med Int Health*. 2009 Nov;14(11):1394-400. doi: 10.1111/j.1365-3156.2009.02383.x. Epub 2009 Sep 14.

pharmacists / dispensing officer or a visit to the medicine storage facility / pharmacy could have supplemented the information gathered from the patients and also added to the veracity of the research findings. The study further stated that a revolving drug funding system in Ethiopia might increase the availability of medicines, and could enhance affordability by guarding against medicines purchase from the private sector. Nevertheless, it might result in an equivalent system, where the poor are unable to access medicines if such are not available in the budget pharmacy. 'Equity is a concern in the absence of an adequate mechanism to protect the poor from catastrophic health expenditure'<sup>204</sup>.

In Guyana, Seoane-Vazquez and Rodriguez-Monguio<sup>205</sup> documented that Guyana's pharmaceutical sector faces key challenges that hinder access to essential medicines. Their study investigated Guyana's medicines policy and regulation, public financing, and medicine procurement and delivery. They identified main barriers to drug access and suggested alternatives to strengthen the country's public health functions. Data were collected from the country's regulatory agencies, public procurement agency, pharmacies, wholesalers, and pharmaceutical companies. The information was supplemented with interviews with a convenient sample of Guyanese health authorities and stakeholders. Data were also compiled from scientific databases, and web pages of the country's Ministries of Health, Commerce and Finance, the Bureau of Statistics, and international organizations. The study found that foremost barriers to medicines access are: the absence of a national drug policy and regulation; restricted role of the monitoring authority; an incompetent drug selection and irrational drug use; inadequate financial resources and lack of drug pricing policy; ineffective planning and managing public supply system; poor epidemiological and information systems; and inadequate infrastructures and dearth of human resources. They concluded that

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<sup>204</sup> opcit

<sup>205</sup> Seoane-Vazquez E1, Rodriguez-Monguio R. (2010). Access to essential drugs in Guyana: a public health challenge. *Int J Health Plann Manage*. 2010 Jan-Mar;25(1):2-16. doi: 10.1002/hpm.949. Copyright 2008 John Wiley & Sons, Ltd.

improving medicines access in Guyana requires strengthening the public health functions within the country and the application of a national drug policy and pricing policy, restructuring the drug financing, procurement, and planning and managing drug supply; and adequate infrastructures and human resources. The findings from this study are in line with most literatures on ATM and also confirm results from studies carried out in other LMICs. Though the sampling method was not clearly outlined, however, the study reflects the medicines situations in Guyana but failed to establish cause-effect relationship. Furthermore, the theoretical framework does not appear well defined, making the work seem incomplete.

In assessing the availability, cost, and inclusion of vital medicines for children in national essential medicines lists (EMLs) and standard treatment guidelines in 14 countries in central Africa, Robertson, Forte, Trapsida and Hill<sup>206</sup> Surveyed 12 public and private sector medicine stores in each country's capital city. They collected data on medicine availability on the day of the survey and on the cost to the patient of the lowest priced medicine in stock. Their studies documented that the quantity of survey medicines in national EMLs ranged from 50% to 90%. Only three countries had more than 50% of such medicines available from central medical stores within a range of: 15-75%. Additionally, medicines availability in NGOs outlets were not reliably better given a range of 10-65%, but then, likely higher in teaching hospitals, though the range was similar at 15-70%. District hospitals had a range of 10-80% but slightly better availability than teaching hospitals, while primary health care clinics largely had poorer availability within a range of 18-48%. Retail or private pharmacies seemed to have more survey medicines available within a percentile range of 38-62. They also noted a significant inconsistency in prices, which seemed quite higher in retail pharmacies. The study concluded that availability of vital essential medicines for children was poor. They suggested that a better understanding of the supply systems in the countries

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<sup>206</sup> Robertson J1, Forte G, Trapsida JM, Hill S. (2009). What essential medicines for children are on the shelf? Published in the World Health Organisation bulletin. 2009 Mar;87 (3):231-7

studied and of the demand pattern for medicines was needed before progress could be made. They noted that if medicines for children and other vulnerable people such as women and girls are not accessible, available, affordable and acceptable to patients there would be no significant development towards the Millennium Development Goals.

Another empirical study<sup>207</sup> that buttressed Robertson et al's viewpoint on the availability of priority medicine for children and women in national essential medicines lists indicated that countries needed to revise and improve their lists as a matter of urgency, in order to provide all priority medicines as part of the efforts to improve maternal and child health reason being that their studies established that: the most commonly listed medicine was paracetamol out of 84/ 89 countries and on a range of on 94% of lists. Sodium chloride, gentamicin and oral rehydration solution were on 93% out of 83/89 countries on the list. 'The least frequently listed medicine was the children's antimalarial rectal artesunate, on 8% of lists (7/89); artesunate injection was on 16% (14/89) of lists. Pediatric artemisinin combination therapy, as dispersible tablets or flexible oral solid dosage form, appeared on 36% out of 32/89 of lists. Procaine benzylpenicillin, for treatment of pediatric pneumonia and neonatal sepsis, was on 50% (45/89) of the lists. Zinc, for treatment of diarrhoea in children, was included on only 15% (13/89) of lists. For the prevention and treatment of postpartum hemorrhage in women, oxytocin was more dominant on the lists than misoprostol; both were included on 55 or 62% and 31 or 35% of lists, correspondingly. Cefixime, for treatment of uncomplicated anogenital gonococcal infection in woman was on 26% (23/89) of lists. Magnesium sulfate injection for treatment of severe pre-eclampsia and eclampsia was on 50% (45/89) of the lists'<sup>208</sup>.

The sampling method for the medicines list stated that all essential medicines lists published since 1999 were selected from the WHO website collection. The most-up-to date list for each

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<sup>207</sup> that Hill S, Yang A, Bero L (2012) Priority Medicines for Maternal and Child Health: A Global Survey of National Essential Medicines Lists. PLoS ONE 7(5): e38055. doi:10.1371/journal.pone.0038055

<sup>208</sup> *ibid*



country was then selected, resulting in 89 unique country lists. Each list was assessed for inclusion of medicines (chemical entity, concentration, and dosage form) on the Priority Medicines List. Though, there was comprehensive disparity in the listing of the Priority Medicines (lists vary from country to country).

Part of the limitation of their study was that they did not state the reasons why specific medicines were missing from specific national essential medicines lists. According to them, doing so would require an in-depth country analysis for each missing medicine because there were a range of possible reasons, which could differ by country and medicine, for the lack of rapid policy change on national drug lists. However, their findings are consistent with a number of possible reasons for gaps in the listing of priority medicines for mothers and children on essential medicines lists. The more up to date country lists were more likely to contain the priority medicines. One exception was nifedipine which until 2005 had been listed on the WHO Model Essential Medicines List as an antihypertensive. The slight decline in listing of this medicine on the national lists might have been due to its removal for cardiac indication and not reflecting its addition as a tocolytic.

For some medicines, such as zinc sulfate, the preferred quality dispersible product is not generally manufactured. For children under five, zinc supplementation considerably eases the severity and duration of diarrhea. Although listing of zinc on the Essential Medicines List could serve as an advocacy tool to create demand for the product, some countries may hesitate listing a product that is not extensively accessible. The high proportion of countries listing the low osmolarity oral rehydration salts suggests that bundling or co-packaging of zinc with ORS could promote uptake when a quality zinc product is available.

For other medicines, such as artesunate, poor demand may well be a barrier to adding it on essential medicines lists. Artesunate injection is hard to obtain in the AFRO region compared

to SEARO. In addition, clinical practice guidelines lagged behind the Model Essential Medicines List in recommending artesunate for malaria in children. Artesunate was added to the Model List in 2000, but was not recommended as first line treatment for children until 2011<sup>209</sup>. The evidence supporting the use of artesunate over quinine is recent and the latest WHO guidelines have recommended either artesunate or quinine<sup>210</sup>. Countries possibly would be hesitant to list artesunate when there is little demand from medical practitioners. Moreover, indigenous inclinations and conditions could influence the addition of medicines on country essential medicines lists. For instance, misoprostol was more likely to be listed on country essential medicines lists in the WPRO region than any other region. Reasons being that important opinion leaders in the region may have argued for the inclusion of misoprostol due to the fact that, unlike oxytocin, it does not require refrigeration. The lack of cold storage in most regions may have convinced medicines selection committees to add misoprostol.

The study concluded that though listing on essential medicines lists is a first step in making priority medicines available, there could be multifaceted barriers to the usage of essential medicines. Quick country assessments of obstacles to the availability and use of priority medicines are needed in order to design precise interventions to increase their suitable usage. For example, although magnesium sulfate is listed on the Essential Medicines List of Zambia, the key barrier to availability within the public health system was lack of procurement by the Ministry of Health<sup>211</sup>. Other barriers identified included a lack of demand by health professionals at the health center level and a lack of in-service training in the use of magnesium sulfate. Where there was demand by obstetricians, magnesium sulphate injection was being procured from the private sector by the hospital pharmacy despite not being registered and licensed for use for the treatment of severe pre-eclampsia and eclampsia by the

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<sup>209</sup> See ; ([http://www.who.int/malaria/publications/atoz/mal\\_treatchild\\_revised.pdf](http://www.who.int/malaria/publications/atoz/mal_treatchild_revised.pdf)).

<sup>210</sup> WHO. Essential medicines list.

<sup>211</sup> opcit

national Medicines Regulatory Authority. They concluded by arguing that basically, the survey of priority medicines on national essential medicines lists pin points the regional variations and poor attention to life-saving priority medicines for children and mothers. They suggested that national pharmaceutical strategies that include maintaining an evidence-based and up-to-date essential medicines list could be used to promote the supply, procurement and appropriate utilization of priority medicines. Making certain that all national essential lists comprise all the important (essential) medicines would be potentially a quick win in efforts to meet the targets specified in Millennium Development Goals 4 and 5.

While a number of studies have sought to identify various issues that are associated with ATM, studies that apply a number of sociological perspectives, particularly theories of system strengthening and interconnectedness to this phenomenon is particularly limited. For instance, Maryam, Bart, Goran, Laing, Ghaffar, Brun and Van Damme<sup>212</sup> applied a health system perspective to the study of ATM and its interconnectedness to health systems. Although the study was based upon paper and pencil methodologies (a review of journal publications and existing literature), they examined existing ATM frameworks, reviewed determining factors of ATM and defined at which level of the health system they were expected to occur. They also investigated to which extent existing ATM frameworks took into account access constraints at different levels of the health system. Their results suggested that ‘ATM barriers are complex and interconnected as they occur at multiple levels of the health system. Existing ATM frameworks only partially address the full range of ATM barriers...’<sup>213</sup> They proposed three vital paradigm shifts that take cognisance of complex and dynamic relationships between medicines and other components of the health system. An all-

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<sup>212</sup> Maryam Bigdeli, Bart Jacobs, Goran Tomson, Richard Laing, Abdul Ghaffar, Bruno Dujardin and Wim Van Damme. (2012). Access to medicines from a health system perspective. *Health Policy and Planning* 2013;28:692–704 doi:10.1093/heapol/czs108. Alliance for Health Policy and System Research, World Health Organization, Geneva, Switzerland, 2Health Sector Support Programme, Alliance for Health Policy and System Research, World Health Organization, Geneva, Switzerland. E-mail:bigdelim@who.int

<sup>213</sup> *ibid*

inclusive view of demand-side constraints in line with consideration of multiple and dynamic relationships between medicines and other health system resources should be applied; it should be known that the determining factors of ATM are embedded in national, regional and international contexts. These, they structured in a new framework recommending a health system perspective on ATM.

Most health system consolidation interventions ignore interconnections between systems components. In particular, complex relationships between access to medicines and health financing, human resources, health information and service delivery are not given sufficient consideration. As a consequence, peoples' access to medicines is addressed mainly through fragmented, often straight up approaches usually concentrating on supply, isolated from the broader issue of access to health services and interventions. Thus, the article entrenched ATM in a health system perspective.

Proponents of a health system perspective do have one constant in their argument against any strategy that approaches access to medicines from a fragmented and 'supply' perspective. It has been shown to be an incomplete analysis and approach generally. At the same time however, there are some positive aspects of analysing ATM from the supply side perspective, evidenced by the fact that most case studies have showed that either medicines are unaffordable to those who need it or they are not available in most facilities. By going through these studies, one can discover that defective medicines supply remains one of the main reasons for lack of access to quality and affordable essential medicines. While failure in supply systems and inefficient procurement cause shortages and wastes scarce resources, most countries tend to ignore these administrative failures.

Scarce theoretical and empirical evidence exists on ATM, especially with regards to medicines situation in Nigeria. Nevertheless, Most of these explanations are not mutually

exclusive but rather reinforce one another in great measures. Research on national essential medicines policies<sup>214</sup> and options for sustainable ATM<sup>215</sup> has produced more mixed findings. In Sudan<sup>216</sup> for instance, an evaluation of medicines availability, affordability and prescription pattern across primary healthcare centers in six states in both public and private sectors showed evidence of decent availability and satisfactory affordability of essential medicines in the public health centres and private pharmacies. Notwithstanding tolerable stocking of the medicines in these facilities, storage quality of medicines generally, was low. The survey which followed the WHO guidelines for monitoring and assessing the pharmaceutical situation in countries sampled 36 public health facilities selected from the six states. Results from the survey concluded that in Sudan, general availability of essential medicines in the public health facilities and private pharmacies was satisfactory. Even though medicines affordability for common diseases such as malaria and child pneumonia could be considered adequate, it was much higher for some other conditions including adult pneumonia. Furthermore, prescription of antibiotics was high and adherence to standard treatment guidelines for managing common and widely spread diseases such as diarrhea and malaria was low. The implication of this study is that the medicines situation in LMICs varies from considerably from country to country. This points to the fact that when examining existing ATM frameworks within countries, one has to take cognisance several indices and variables given its complex nature

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<sup>214</sup> AU, 2001, 2007; SADC, 2007; EAC, 2011; ANDI, 2009

<sup>215</sup> Loewenson R (2011) 'Options for sustainable access to medicines in Africa: Moving beyond TRIPs flexibility toward local production capacity', Health diplomacy monitor 2(2) available at: <http://www.ghd-net.org/sites/default/files/Health%20Diplomacy%20Monitor%20Volume%202%20Issue%202.pdf>

<sup>216</sup> Cheraghali A.M, Idries A.M. 2009 Availability, affordability, and prescribing pattern of medicines in Sudan. Pharm World Sci. 2009 Apr;31(2):209-15. doi: 10.1007/s11096-009-9282-3. Epub 2009 Mar 5.

A further investigation of the availability of essential medicines and their prices in Hubei province of China<sup>217</sup> is another example of the variations and multifaceted nature of ATM. The survey, using the World Health Organization and Health Action International methodology revealed low procurement prices but poor availability in the public sector. Data was collected from 18 public hospitals and 18 private pharmacies; the availability and prices of 39 innovator brand medicines and lowest-price generic equivalent medicines were collected as well. The Average availability in the public and private facilities was low while the average MPRs of procurement prices for innovator brands and lowest-price generics in the public sector were high compared to international reference prices; and the average MPRs of retail prices to patients for lowest-price generics in the public sector was greater than those in the private sector. Ultimately, medicines are affordable for most of the population, but quite expensive and unaffordable for low income earners.

A cross-country comparison<sup>218</sup> of the affordability of medicines in the developing world suggested that a comparative analysis of medicine prices to available income in LICs and MICs revealed that buying medicines or individual medicine procurement in those countries could lead to poverty of a large number of the population. The survey evaluated affordability in terms of the population living below US\$1.25 or US\$2 per day poverty levels as a result of buying the medicines they needed. Additionally, the researchers obtained the prices of salbutamol 100 mcg/dose inhaler, glibenclamide 5 mg cap/tab, atenolol 50 mg cap/tab, and amoxicillin 250 mg cap/tab from facility-based surveys they undertook using a standard measurement methodology. Data from the World Bank's World Development Indicators on household expenditure data as well as information on income distributions were used for the

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<sup>217</sup> Yang H1, Dib HH, Zhu M, Qi G, Zhang X. (2010). Prices, availability and affordability of essential medicines in rural areas of Hubei Province, China. *Health Policy Plan*. 2010 May;25(3):219-29. doi: 10.1093/heapol/czp056. Epub 2009 Dec 1

<sup>218</sup> Niëns L.M, Cameron A, Van de Poel E, Ewen M, Brouwer WB, Laing R. (2010). quantifying the impoverishing effects of purchasing medicines: a cross-country comparison of the affordability of medicines in the developing world. *PLoS Med*. 2010 Aug 31;7(8). pii: e1000333. doi: 10.1371/journal.pmed.1000333.

evaluation. Results showed that in the countries studied, buying these medicines could potentially deplete the earnings of up to eighty six percent of the population. Originator brand products were cheaper than their lowest-priced generic counterparts. ‘A case in point is the Philippines where originator brand atenolol could push an extra 22% of the people below US\$1.25 per day, whereas for the lowest priced generic equivalent this demographic shift is 7%. Given related prevalence figures, substantial numbers of people are affected by the unaffordability of medicines<sup>219</sup>. In order to measure the bankrupting effect of medicine purchases, pre- and post-payment incomes were determined and later compared to a poverty line. The study estimated the impoverishing effects of four medicines in 16 LICs and MICs using the impoverishment method as a metric of affordability. The conclusion that generic medicines tend to be cheaper than their innovator brands may not hold forth in all countries. In Sri Lanka, a national survey<sup>220</sup> evaluated the availability of 25 key essential medicines for children using the WHO/Health Action International medicine price methodology and found out that vital essential medicines for children were more available in private and ROS pharmacies than in public hospitals irrespective of the brand ( whether generic or innovator brand). Medicine availability in public hospitals comparable to that of private and ROS pharmacies was only for paracetamol tablet, oral rehydration salt, vitamin C and chlorphenamine syrup. While the mean per cent availability of the basket of survey medicines was 52% in public hospitals in comparison to 80% in private, and 88% in ROS pharmacies. Teaching/general hospitals had better availability (mean per cent availability 62%) than district hospitals (54%), peripheral units (49%) and central dispensaries (45%). Availability of anti-infectives, anti-asthma medicines and oral liquid preparations of carbamazepine, iron, paracetamol, domperidone and ibuprofen were found to be less in public hospitals than

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<sup>219</sup> ibid

<sup>220</sup> Balasubramaniam R.I, Beneragama BV, Sri Ranganathan S. (2011). A national survey of availability of key essential medicines for children in Sri Lanka. PMID: 20824175 [PubMed - indexed for medline] pmcid: PMC2930876 Ceylon Med J. 2011 Sep;56(3):101-7.

private and ROS pharmacies. This scarcity deprived children of access to quality and effective medicines more in the public hospitals than in the private facilities. Research data was assembled from a representative sample of 40 public hospitals (Outpatients Department pharmacies), 40 private and 8 'Rajya Osusala' (ROS) pharmacies. The hospitals and pharmacies were selected from 8 provinces using a multistage clustered approach to represent different levels of public hospitals.

There is a growing consensus that health outcomes for children in poor societies are mostly affected by the scarcity of essential medicines at public health facilities and high cost of prescribed medicines at private facilities. In fact, this challenge basically explains health seeking behaviours and health service utilisation patterns of the families of these children<sup>221</sup>. Research<sup>222</sup> on the availability and affordability of essential medicines for children under-5 years in Karachi, Pakistan indicated that there was irregular and inadequate supply of essential medicines at the government health facility and inability to buy medicines from private pharmacies which led to considerable 'financial burden' on most poor people as well as non-compliance with prescriptions and high patronage of unauthorised health care providers / traditional medicines. This trend according to the study has a grave consequence on the health seeking behaviours and of course the health outcomes, especially among children. By means of observational visits, they surveyed the shelf-availability of medicines for children less than 5 years of age at a rural health centre, conducted focus group discussions with the mothers of those kids, and also interviewed health care providers at the study area in order to explore the impacts of medicines scarcity and non-affordability.

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<sup>221</sup> Shafiq Y.1, Shaikh B.T, Kumar R. (2011). Availability and affordability of essential medicines: exploring the health seeking behaviours and health service utilisation for children under-5 years living in squatter settlement of Karachi, Pakistan. *Ayub Med Coll Abbottabad*. 2011 Jan-Mar;23(1):132-8.

<sup>222</sup> *ibid*



In analysing the role of the pharmaceutical industries and that of international regulations in hindering access to medicines for specific conditions such as reproductive health, Cottingham and Berer<sup>223</sup> claimed that the pharmaceutical sector played a key role in the lack of access to essential medicines for sexual and reproductive health care, by investing in products just to make profits notwithstanding their negative health impact such as hormone replacement therapy. They opined that the pharmaceutical industry markets new essential medicines at prices that are far beyond the reach of those countries that need them (e.g. HPV vaccines). It was further alleged that the pharmaceutical industry has failed to finance the development of new products such as microbicides and medical abortion pills. And, as a result, some non-profit making and other smaller companies struggle to fill some of that demand such as that of female condoms. Moreover, international patent protection was also cited as a contributor to high prices of medicines, and while international agreements such as compulsory licensing under TRIPS and the Medicines Patent Pool allow for mechanisms to enable poorer countries to get access to essential medicines, the obstacles created by "big pharma" remains intimidating. Again, the researchers confirmed that the above-mentioned barriers have promoted the proliferation of counterfeits and sub-standard medicines such as fake medical abortion pills which are sold via the internet. They suggested a program on universal access to essential medicines at prices that poor countries can afford; motivated by sexual and reproductive health needs and based on the right to health.

The empirical relationships are robust regarding barriers and constraints to ATM in most studies. These studies call for better public- private investment in essential medicines, expansion of the manufacture of affordable generic medicines, and the development of

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<sup>223</sup> Cottingham J, Berer M. (2011). Access to essential medicines for sexual and reproductive health care: the role of the pharmaceutical industry and international regulation. *Reprod Health Matters*. 2011 Nov;19(38):69-84. doi: 10.1016/S0968-8080(11)38573-4.

comprehensive strategic plans, that would include affordable medicines and expertise for addressing known public health challenges.

Despite the general notion that generics are far cheaper and of good quality, the realities in most countries differ given the fact that consumer perception of quality could also form part of the constraints to ATM which raises the question of acceptability. The most recent research in South Africa by Patel, Gauld, Norris and Rades<sup>224</sup> suggested that there is a clear difference between perceptions of quality and actual quality of medicines. This trend clearly points to deficits in public engagement by government with regards to the application of generic medicines policy. Implementing generic medicines policy calls for the participation of consumers and healthcare providers to explicitly address their information gaps and needs. The research was conducted at primary levels in Johannesburg, Durban and Cape Town. Purposive sampling was used to recruit consumer participants and random sampling used to recruit healthcare providers from public and private facilities. Data were obtained through twelve focus group discussions with consumers and semi-structured interviews with healthcare providers in order to gain understanding of perceptions of quality. One hundred and thirty five products including paracetamol, amoxicillin and hydrochlorothiazide tablets were obtained from public and private sector healthcare providers. Then, subjected to in vitro dissolution, uniformity of weight and identity (Fourier Transformed Infrared Spectroscopy) tests using prescribed methods from the British (2005) and United States Pharmacopeias (2006). In response to the quality of generics, South Africans 'labelled' drug quality in relation to the effect it had on disease symptoms. Procurement and utilization performance of healthcare providers was influenced by prior experience, manufacturers' names and consumers' ability to pay. They suggested that generic medicines are an essential policy option which allows for access to quality and affordable essential medicines. Therefore, it is

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<sup>224</sup> Patel A, Gauld R, Norris P, Rades T. (2012). Quality of generic medicines in South Africa: perceptions versus reality - a qualitative study. BMC Health Serv Res. 2012 Sep 3;12:297. doi: 10.1186/1472-6963-12-297.

the responsibility of national medicines regulatory authorities to guarantee the quality of generic medicines. There is also need to address prevailing negative perceptions of the quality of generic medicines to make sure that people use them with assurance.

Another empirical research on access to essential medicines in Brazil reveals a relatively consistent pattern of medicine prices, availability and affordability compared to other countries with just minimal variability. The study examined medicine prices, availability and affordability across three types of medicines; originator brands, generics and similar medicines and within different kinds of facilities; private pharmacies, public sector pharmacies and "popular pharmacies. Bertoldi, Helfer, Camargo, Tavares and Kanavos<sup>225</sup> reported that medicines availability in the Brazilian public sector falls short of demand, and does not meet the challenge of supplying essential medicines to the whole population, as stated in the Brazilian constitution. This has inevitable consequences for medicines affordability, mainly amongst the lower socio-economic levels. Using the World Health Organization / Health Action International methodology, the research collected data on prices and availability of 50 medicines from 56 pharmacies across six cities in Southern Brazil. Findings showed that in the private sector, prices were quite high while mean availability was 65%, 74% and 48% for originator brands, generics and similar medicines, respectively. In the public sector, mean availability of similar medicines was a lot more than that of generics. Mean overall availability in the public sector ranged from 68.8% to 81.7%. In "popular pharmacies", mean availability was greater than 90% in all cities. Basically, in Brazil, unlike in Sudan, medicines are not available in public facilities. Also, supply in this facility does not meet up with population demands. Medicines situation in Brazil could be likened to that of India, Pakistan and Sri Lanka where availability is low but not China where in spite of low

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<sup>225</sup> Bertoldi A.D, Helfer A.P, Camargo A.L, Tavares N.U, Kanavos P. (2012). Is the Brazilian pharmaceutical policy ensuring population access to essential medicines? *Global Health*. 2012 Mar 21;8:6. doi: 10.1186/1744-8603-8-6

availability in public and private sectors, the overwhelming issue tends to be affordability, especially by low income earners.

An article<sup>226</sup> on the barriers to generics and ATM in India argued that misconceptions among policymakers, prescribers and patients about branded medicines and generics in India was key on the list of constraints to ATM. Secondly, high costs of medicines as a result of the advanced dismantling of the system of regulation of medicine prices, and a faulty medicines approval and regulatory system which allows medicines (including fixed dose combinations) of doubtful efficiency, rationale, safety and public health relevance to dominate the market at the cost of access to cheap generic essential medicines. The significances of ill-health and lost spending on medicines raise issues of public health ethics in India. For that reason, improving access to essential medicines in India, improved public provisioning, medicines regulation and pricing mechanism remains urgent public health and ethical concern.

Another research in India indicated that despite several efforts made by the government towards introducing free generics, inequalities in medicines availability and affordability still remains an impediment to access. Kotwani<sup>227</sup> reported that the 2013 survey was conducted to investigate the price, availability, and affordability of fifty essential medicines in the public and private sector in Delhi, India using standardized WHO/HAI methodology. Findings showed that purchase prices of surveyed medicines were rational in comparison to International Reference Prices. However, there was disparity in the prices of certain medicines by different public procurement agencies. Medicines availability was very poor in public sector facilities, which are the main source of free medicines for most of India's low-income earners. Medicines availability was better in private retail pharmacies but

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<sup>226</sup> Bhargava A, Kalantri S.P, (2013). The crisis in access to essential medicines in India: key issues which call for action. *Indian J Med Ethics*. 2013 Apr-Jun;10(2):86-95.

<sup>227</sup> Kotwani A. (2013). Where are we now: assessing the price, availability and affordability of essential medicines in Delhi as India plans free medicine for all. *BMC Health Serv Res*. 2013 Jul 25;13:285. doi: 10.1186/1472-6963-13-285.

affordability remained a great challenge for most people. Yet again, this study and statistics quoted have important policy implications that could help in improving policies to increase the access to essential medicines for majority of Indians.

Jiang, Yang, Yan, Liu, Zhao, Fang<sup>228</sup> assumed that the implementation of a new healthcare reform in 2009 would improve medicines affordability by 2013 in China. However, they discovered that despite the reforms, medicines prices varied across sectors and there was need to improve to impartial access to basic medical treatments, specifically for the poor. With data on the prices and availability of 47 medicines collected from 50 public and 36 private sector medicine outlets in six regions of Shaanxi Province, Western China and using a standardized methodology developed by the World Health Organization and Health Action International from September to October 2010, they compared medicine prices with international reference prices to obtain an average price ratio. Findings showed that the mean availabilities of originator brands and lowest-priced generics were 8.9% and 26.5% in the public sector, and 18.1% and 43.6% in the private sector, respectively. Also, public sector obtained generics and originator brands stood at average price ratios of 0.75 and 8.49, correspondingly, while patients paid 0.97 and 10.16. Final patient prices for lowest-priced generics and originator brands in the private sector were higher than their international retail prices. Public sector sellers applied higher markups to generics, and lesser to originator brands, correspondingly, Generic medicines were priced higher in the private sector than the public sector. In the private sector, originator brands cost more, on average, than their generic equivalents. The lowest-paid government worker would need two day's wages to purchase captopril for lowest-priced generics from private sector, while 7days' wages for losartan. For originator brands, the costs rise to 3 days' wages on average for salbutamol inhaler and 16

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<sup>228</sup> Jiang M, Yang S, Yan K, Liu J, Zhao J, Fang Y. (2013). Measuring access to medicines: a survey of prices, availability and affordability in Shaanxi province of China. PLoS One. 2013 Aug 1;8(8):e70836. doi: 10.1371/journal.pone.0070836. Print 2013

days' wages for omeprazole. They proposed a multi-faceted intervention, as well as policy review, regulations refocus and educational interventions.

Another look at the cost and availability of paediatric essential medicines in Shaanxi Province, China<sup>229</sup> revealed that there was need to approve a list of national paediatric essential medicines with affordability and availability improved in both public and private facilities to enable children obtain the treatment they need for various diseases. Using the WHO / HAI standardized methodology, data on price and availability for 28 paediatric essential medicines were collected from 60 public hospitals and 60 retail pharmacies in six areas of Shaanxi Province. Affordability was measured as the number of days' wages required for the lowest-paid unskilled government worker to obtain standard treatments for common conditions. Data on medicine price components were collected from hospitals, wholesalers and distributors to obtain price mark-ups. Findings further revealed that the mean availabilities of originator brands and lowest-priced generics were low for originator brands and high for lowest priced generics in the public sector; whereas originator brands were low while lowest priced generics were high in private pharmacies. Public procurement and retail prices were higher than the international reference prices -IRPs for three originator brands and a little less for 20 Lowest Priced Generics. In the private sector, the final prices for Originator Brands s and Lowest Priced Generics were slightly higher than the International Reference Prices. The final price in the private sector was a little lower than in the public sector for Originator Brands and minimally higher for Lowest Priced Generics. As a rule, standard treatments cost less than 1 day's wages in both sectors. Distribution mark-ups applied to brand salbutamol in Xi'an was 65.5%, and up to 185.3% for generic. Cumulative mark-ups for LPGs in Ankang were also high, from 33% to 50%. They concluded that the

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<sup>229</sup> Wang X, Fang Y, Yang S, Jiang M, Yan K, Wu L, Lv B, Shen Q. (2014). Access to paediatric essential medicines: a survey of prices, availability, affordability and price components in Shaanxi Province, China. *PLoS One*. 2014 Mar 3;9(3):e90365. doi: 10.1371/journal.pone.0090365. eCollection 2014.

manufacturer's selling price was the major contributor to the final price in both sectors. Accordingly, they suggested that a central medicines purchasing and pricing system be put in place to ensure price equity across all sectors in China.

Thus far, the empirically observed constraints to and determinants of ATM may be explained by availability, affordability and accessibility amongst other complex issues that bother on national and international regulations. For example, a 2013 cross sectional pricing survey<sup>230</sup> of asthma medicines availability and affordability in fifty two LMICs showed that of the three selected asthma medicines, availability was mostly low for corticosteroids, and worse in national procurement centres and main hospitals. The surveyed strength of beclometasone was only on the Essential Medicines List of ten countries. There was a significant inconsistency in pricing and affordability across countries. Procurement systems appeared generally incompetent when Asthma medicines Facility prices were applied as references. Some countries appeared to be subsidising asthma medicines, making them free or less expensive for patients, while other countries are applying very high mark ups, which could considerably escalate the price for patients unless a repayment system exists. Findings raised key policy concerns. Availability of inhaled corticosteroids was generally poor; many Essential Medicines Lists needed to be updated; International Reference Prices could be misleading; health systems and patients are actually paying more than required for asthma medicines, which are unaffordable for many patients in many countries. More than 500 million people suffer from asthma and other diseases, yet many of these people; especially in LMICs are unable to access prescribed medicines for treatment. Medicines availability, price and affordability are possible determinants of access. Worse still, very few studies have included medicines for special health conditions mainly in poor countries.

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<sup>230</sup> Babar Z.U, Lessing C, Mace C, Bissell K. (2013). The availability, pricing and affordability of three essential asthma medicines in 52 low- and middle-income countries. *Pharmacoeconomics*. 2013 Nov;31(11):1063-82. doi: 10.1007/s40273-013-0095-9.

When analysed from a sociological perspective, most of the articles on ATM tend to lack some basic qualitative approach. The articles analyse ATM in isolation and tend to ignore its multifaceted nature and variability across countries. Nonetheless, the empirical relationships are robust regarding barriers and constraints to ATM in past studies, and the definition of affordability and availability used in previous empirical studies are similar to those used in this research.

### **2.3. Access to Quality and Affordable Essential Medicines in Nigeria**

The few articles concerning access to quality and affordable essential medicines in Nigeria focused on drug use, patent laws, supply, policies and regulations. Some articles addressed ATM in isolation without acknowledging some of the unexpected consequences of both demand and supply side determinants of access. Hardly any focused on whether people have access to essential medicines in Nigeria? Are Nigerians obtaining safe, quality and affordable medicines? Are these medicines being prescribed, dispensed and used properly? In an interrelated assessment on medicines prescribing and utilization pattern at the medical outpatient clinic of a tertiary hospital in south western Nigeria Enwere, Falade and Salako<sup>231</sup> revealed that one thousand three hundred and seven (90.3%) prescriptions out of 1447 patient encounters were reviewed and One hundred and forty (9.7%) encounters did not have their medicines prescriptions written out. The total average number of drugs prescribed was 3.2 plus or minus 1.47. Average percentage of drugs prescribed by generic names was 49.5% plus or minus 31.2, while average percentage of drugs prescribed from the hospital essential drug list was 96% plus or minus 14.0. The average cost of medications to patients/day was N = 126.0 plus or minus 136.0 just about \$0.9 (USD). They posited that the low proportion prescription of medicines by their generic name was accountable for the high cost of

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<sup>231</sup> Enwere O.O, Falade C.O, Salako B.L., (2007). Drug prescribing pattern at the medical outpatient clinic of a tertiary hospital in southwestern Nigeria. *Pharmacoepidemiol Drug Saf.* 2007 Nov;16(11):1244-9.



medicines to patients. Drug use studies are a necessary tool for assessing prescribing patterns in hospitals, recognizing areas for improvement and improving drug prescribing practices in these facilities. Although the study used the World Health Organization (WHO) Drug Use Indicators, the sampling method was not clearly articulated. One thousand four hundred and forty-seven patient encounters were reviewed prospectively over a period of 2 months, yet there was no explanation on how the revision was conducted. Data were collected from patient case files immediately following consultation in each of the seven subspecialty clinics at the MOP. Prescribed medications were then reviewed for some drug use indicators including cost of medications. Cost was based on the current hospital pharmacy drug-pricing list.

Another one of the few articles examining access to essential medicines in primary healthcare facilities, Sambo, Lewis and Sabitu<sup>232</sup> report that in Nigeria, despite Bamako Initiatives put in place during the 80s, access to essential medicines remains an illusion in many of the primary health care facilities in the area that was studied. According to their assessment of the availability of essential medicines and the perceptions of clients on medicines situation in the primary health centres of Tafa Local Government Area, north central Nigeria, a checklist consisting of minimum medicines expected in a generic primary health centre developed by the National Primary Health Care Development Agency (NPHCDA) was adopted and used to assess medicines availability, while Focus Group Discussions were conducted to determine the perceptions of clients on medicines situation in the health centres. Results showed that, all the 3 primary health centres in Tafa LGA did not implement the 'Bamako initiative' - BI and none was operating 'Drug Revolving Fund'- DRF system. Out of the minimum recommended score of 54 points for the availability and adequacy of medicines and

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<sup>232</sup> Sambo MN1, Lewis I, Sabitu K. (2008). Essential drugs in primary health centres of north central Nigeria; where is Bamako initiative? Niger Journal of Clinical Practise. 2008 Mar;11(1):9-13. Niger J Clin Pract. 2008 Mar;11(1):9-13. Sambo MN1, Lewis I, Sabitu K. Department of Community Medicine, Ahmadu Bello University, Zaria. sambonasir@yahoo.com

consumables, New Wuse primary health centre in the LGA headquarters scored highest points of 19, while New Bwari and Iku primary health centres scored 13 points each. All the scores were remotely below the minimum requirements. Correspondingly, the results of the FGDs confirmed poor availability of medicines and clients dissatisfactions with the medicines situation in the primary health centres. They recommended that, any effort designed at reforming or repositioning primary health care must take into account reviving Bamako Initiative by ensuring functional DRF system in all the primary care facilities. The limitations to this study is the question of reliability on focused group discussions alone, given the fact that there is no evidence of how members of the groups were sampled or how the discussions were conducted, as well as questions that served as a guide.

There are several literatures on pharmaceutical assessment<sup>233</sup>, medicines pricing and essential medicines in most developed<sup>234</sup> countries within the conceptual frameworks of Human rights<sup>235</sup>, especially by WHO, HAI, DFID and UNDP 'household surveys' and health seeking behaviours. In addition, most available data revolves around the viability of medicines policies<sup>236</sup> within countries. However, few data are available on the markups applied to the cost of the production of medicines as they move through the supply and distribution chains<sup>237</sup>. In the limited number of countries for which such data is available, results show that these add-on costs can be substantial in both the public and the private sectors. However, in Nigeria, these add-ons and mark-ups are responsible for the high cost of

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<sup>233</sup> M. Olcay and R. Laing, Pharmaceutical tariffs: what is their effect on prices, protection of local industry and revenue generation? (Geneva: Commission on Intellectual Property Rights, Innovation and Public Health, May 2005). Available from <http://www.who.int/intellectualproperty/studies/tariffs/en/index.html>.

<sup>234</sup> World Health Organization Regional Office for the Eastern Mediterranean 2008, Survey of medicine prices, availability, affordability and price components: summary survey report for Syrian Arab Republic (available from <http://www.haiweb.org/medicineprices/surveys/200312SY/sdocs/EMPSyriasummarynewpricingWEB.pdf> (accessed on 5 sept 2014).

<sup>235</sup> Hans V Hogerzeila .(2006). Essential medicines and human rights: what can they learn from each other? Bulletin of the World Health Organization | May 2006, 84 (5)

<sup>236</sup> A. Nguyen, (2007) What is the range of policies that can be used to promote the use of generic medicines in developing and transitional countries? (unpublished, 2007)

<sup>237</sup> These markups are responsible for the high cost of medicines in LMICs

medicines in the country<sup>238</sup>. Sufficient access to medicines is dependent on both the affordability and quality of the products. High-priced medicines are clearly not the solution but, equally, affordable low quality products are not the answer either. Therefore, when developing local manufacture of generics, the target is a pharmaceutical industry that produces high quality medicines at competitive prices<sup>239</sup>.

Research has indicated that irrational use of medicines is a major problem worldwide<sup>240</sup>, it is estimated that in Nigeria, half of all medicines are incorrectly prescribed, dispensed or sold, and that half of all patients fail to take their medicine properly. Also, imbalanced health financing mechanisms has left many households responsible for the cost of essential medicines<sup>241</sup>. For instance, a 2004 survey<sup>242</sup> (published in 2006) of the prices people pay for medicines in Nigeria which was conducted by the Federal Ministry of Health in collaboration with WHO, DFID, HAI and the European Union found that: with a sample size of 129 medicine outlets in public and private health clinics as well as private pharmacies that were randomly sampled from six states representing the six geopolitical zones in the country. And, the prices of a basket of 34 prescription medicines were measured. Three State Central Medical Stores and one NGO procurement facility were also assessed in terms of prices at which they procure key medicines. The study showed that with regards to patient prices, Patients in Nigeria paid much more higher than IRPs- international reference prices for medicines in countless facilities in the public and private sectors. Besides, medicines Prices in the public facilities remained virtually identical with those in the private pharmacies. Also, Private health centres in Nigeria charged a lot more than the public health facilities and a bit

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<sup>238</sup> UNIDO. (2011). Pharmaceutical Sector Profile: Nigeria Global UNIDO Project: Strengthening the local production of essential generic drugs in least developed and developing countries

<sup>239</sup> Opcit.

<sup>240</sup> ibid

<sup>241</sup> World Health Organisation (2007). Medicine pricing. WHO, Geneva

<sup>242</sup> Federal Ministry of Health, WHO, DFID, HAI & EU. (2006). Medicine prices in Nigeria: prices people Pay for Medicines

higher than private retail pharmacies. Likewise, Innovator brands seemed to cost slightly higher than the lowest priced generic equivalents. Generally, there was extensive variability of prices of the same medicines between facilities, sectors and different types of the same product within the country.

As for Procurement Prices, the survey documented that of the three functional state central medicine outlets surveyed; their prices were fairly higher than international prices. Pricing in NGO facilities were slightly less than those of the state central medicine stores.

In terms of medicines availability, generic medicines in Nigeria were commonly more available in all outlets. And, the availability of the basket of 34 medicines was low across all sectors but more so in the public and private health clinics. The survey also discovered that medicines affordability in Nigeria remained a challenge, as 90.2 percent of Nigerians were unable to afford the medicines they needed<sup>243</sup>. Besides, medicines affordability in Nigeria was mostly dependent on the choice of therapeutic class, product or sector from which the medicine was bought. For instance: - A worker would pay minimal wages to treat an infection with amoxicillin but would pay a lot more earnings when using ceftriaxone injection to treat the same health condition. Similarly, a medication bought from the private sector would cost a patient more than when it is purchased from either a public health facility or pharmacy.

On the component of medicine prices, the research stated that distribution tariffs, taxes and mark ups from the government was responsible for a substantial amount of what patients pay for medicines. Consistently, Mark-ups by the distributor or retailer were found to be multiple times the manufacturers' price. When compared to international reference prices, the survey found that purchasing medicine in public facilities in Nigeria was more expensive in Nigeria

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<sup>243</sup> The data indicated that the 90.2 % included those who live below the income level of US\$ 2 a day as well as the government worker that earns a minimum wage of US\$1.4 per day.

than in 7 other countries while NGO purchase was least expensive when compared to the same countries. Besides, while branded innovator medicines equalled same prices in other countries, generic medicines were highly expensive in Nigeria than in other 7 countries. They concluded by saying that Nigeria incorporated the least mark up in both public facilities and private pharmacies, in comparison to the 7 other countries. Subsequent studies conducted in 2007<sup>244</sup> and 2009 produced nearly identical results.

There is growing consensus that the challenge of access to medicines goes beyond availability and affordability but rather encompasses the threat of counterfeits and irrational use of inappropriately prescribed medicines. In fact counterfeits have been characterised as the leading barrier to access to quality medicines in Nigeria after affordability<sup>245</sup>. A 2009 survey of bio medical healthcare personnel by Roger, Thompson, Richard, Kimberly and Olusegun<sup>246</sup> have indicated that there is evidence of irrational drug use in Nigeria. They reported that most patients admitted buying medicines from unregistered and unauthorised sources, and without valid prescriptions. Respondents from the survey repeatedly allude to the high cost of medicine as justification for the increase and spread of poor-quality medicines. Most bio medical healthcare personnel were conscious of the problem, but their ability to identify and respond to counterfeits and sub-standard medicines varied extensively.

In order to gain test the validity of the data collected, the researchers also bought a small sample of essential medicines from pharmacies in Lagos to assess basic drug quality within the city. 18% of the medicines bought failed thin-layer chromatography and/or disintegration tests. The results supported results, including earlier research by some of the authors that the

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<sup>244</sup> Moreira A. (2007). 'Access to medicines divides rich and poor at WHO', *Valor economico* 6 (November).

<sup>245</sup> Chukwuani CM, Olugboji A, Ugbene E. 2006. Improving access to essential drugs for rural communities in Nigeria: the Bamako initiative re-visited. *Pharmacy World and Science* 28: 91–5.

<sup>246</sup> Roger Bate, Thompson Ayodele, Richard Tren, Kimberly Hes, Olusegun Sotola. (2009) Institute for Public Policy Analysis. Drug Use in Nigeria. An informal survey of doctors, pharmacists, healthcare workers in Lagos, Ondo, and Ogun, and a pilot quality assessment of essential drugs from Lagos pharmacies. Africa Fighting Malaria, the American Enterprise Institute and the Initiative for Public Policy Analysis Working Paper August 2009

prevalence of poor-quality medicines may be decreasing in Nigeria—possibly because of improved policing and prosecution of counterfeiters by the National Agency for Food and Drug Administration and Control. Government, industry, and the public health community can work together to improve consumer and healthcare worker awareness, and increase access to low-cost, high-quality pharmaceuticals.

And while Nigeria still has problems to overcome, it is well ahead of other African nations in combating the scourge of substandard drugs. Indeed, it could be viewed as a model for other countries in Africa – as such, the bar should be set high for combating poor-quality drugs in Nigeria.

Field researchers administered informal questionnaires to 211 healthcare personnel in Lagos, Ondo, and Ogun states of Nigeria about patient behaviour and their own awareness of, and exposure to counterfeit and substandard medicines.

Through a USAID Deliver project<sup>247</sup>, technical advisors were able to use data to identify system design modifications that could render their essential drugs distribution more efficient. Their activities focused on catering transportation policies to best fit the products and customers served.

Ayodele<sup>248</sup> examines the concept of globalization and whatever effects, if any, as well as the extent it has on the ability of people living in LMICs to access medicines. He considered the provisions of the TRIPS Agreement and the DOHA Declaration which is complementary to the former, and analysed its implications on access to medicines in developing countries. In doing that, he focused on Nigeria and assumed other developing countries either had similar

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<sup>247</sup> The U.S. Agency for International Development. (2010). Nigeria: Segmentation of the Supply Chain for Essential Medicines Kano and Edo States.

<sup>248</sup> Ayodele A. A (2010). Globalization, The trips agreement and their implications on access to essential medicine for developing countries: A case study of Nigeria. law and development journal

or the same problems with Nigeria in regards to accessing medicines produced in developed countries. He further cited the challenges confronting Developing Countries in Accessing Essential Medicine as: the Cost of Brand – Name Drugs viz-a-viz the Standard of Living in Developing Countries; No or Insufficient Manufacturing Capability in the Pharmaceutical Industry: Nigeria presently ranks third in local manufacturing of generic medicines, yet a lot of people are unable to access affordable essential medicines<sup>249</sup>; Political and Economic Dominance of Developed Countries. He subsequently proposed options for overcoming the challenges of accessing medicines in a globalized world for developing countries, particularly; Nigeria by suggesting pooled/ bulk purchasing amongst other options. Ayodeles argument is supported by evidence from Baker<sup>250</sup>, who also noted in 2004, that 93% of people living with Hiv/ Aids cannot afford to buy anti – retroviral drugs which they require to stay alive. Six years down the line, the situation has not changed much in most countries due to poverty and inability to purchase branded medicines from the private sector. Ultimately, his work contributes to an understanding of some of the challenges of accessing medicines in Nigeria, even though it is not an empirical study.

Okechukwu<sup>251</sup>, in his article asserts that the introduction of patent law in Nigeria has neither delivered the benefits of the patent system, nor improved medicine development, production or distribution to improve access to essential medicines. Analysed in three parts, the first part delineated the development of patent law and how colonization influenced the patent law development in Nigeria. It reviewed the use of colonial and national development plans to negate the development of an efficient patent law system, with its resultant impact on access to medicines and health care in Nigeria. He argued that these development plans were meant

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<sup>249</sup> Drug Production in Nigeria – A publication of NAFDAC at [www.nafdac.org](http://www.nafdac.org).

<sup>250</sup> B.K. Baker (2004) Arthritic Flexibilities for Accessing Medicines: An Analysis of WTO Action Regarding Paragraph 6 of the Doha Declaration on the TRIPS Agreement and Public Health (2004) 14 Ind. Int'l & Comp L. Rev. 613, pg.1.

<sup>251</sup> Okechukwu Timothy Umahi. (Nd).Access to Medicines: the Colonial Impacts on Patent law of Nigeria. [online]

to sustain the raw material base of the industries of the West without any genuine effort at technology transfer to the colonies. And, by extension, its effect has contributed to the inconsistency in patent and health care policies affecting the Nigerian pharmaceutical industry. He ignored the TRIPs agreement and Doha declaration and could not link both in a non-prejudicial manner would convince people. The authors' arguments and conclusions are not convincing enough and do not really contribute to an understanding of Access to essential medicines in Nigeria.

In their analysis, Ogori, Olubukola, Maureen, Egbuta, Rui Vaz, Hashim, and Iyabo<sup>252</sup> claimed that in Nigeria, policies and regulations on controlled medicines focus their laws on control without any definite statement on the need to make them available for medical use. Moreover, there is no specific national policy on controlled medicines to promote fair access and rational use. Laws and regulations on controlled medicines in Nigeria are outdated and have defaming words such as “dangerous drugs”, “addiction” which tend to confuse prescribers and limit utilization of such medicines. They stated that obtaining narcotic medicines is rare due to insufficient and lopsided release of funds and lack of quantification of needs. The cost of purchasing medicines is high in relation to international reference prices undoubtedly due to the low quantity usually obtained. There is poor geographical coverage. Medicines distribution is consolidated to Federal Medical Stores in Lagos requiring approval from several officers located at various places. At present, controlled medicines are limited to hospital pharmacies in the public facilities. Private pharmacies and primary health care facilities are not allowed to store controlled medicines. Additionally, departmental heads of pharmacies or authorized pharmacists of institutions are required to appear in person at the FMS to collect their stocks. Most of these require travel between two to several days to collect stock thereby incurring very high costs. Occasionally controlled medicines expire at

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<sup>252</sup>, Ogori T., Olubukola O, Maureen E, Egbuta O, Rui V, Hashim Y, Iyabo O (2014). Equitable Access to Controlled Medicines in Nigeria: Assessment of access barriers



the FMS because facilities are unaware of their availability. At present, Nigeria is experiencing serious scarcity of controlled medicines especially in the management of moderate and acute pain. The study further indicated that national policies and regulations on controlled medicines focus mainly on preventing the diversion of the products to illegal channels without matching efforts to promote availability for medical use. Several strategies for control have been introduced which serve as barriers to access. Demand for narcotic analgesics as shown is quite low, leading to an expiry of procured products. Thus, they suggested that national policies be reviewed to ease availability, accessibility and rational use of controlled substances for medical purposes while promoting sufficient control.

The study examined relevant laws, policies, regulatory control practices, procurement and supply management relating to narcotics and controlled medicines in order to determine their relevance in promoting or hindering access to controlled medicines. The procurement and supply at the Federal Central Medical Stores (FMS) and samples of secondary and tertiary health facilities throughout the country were examined. The WHO Country Assessment tool served as a guide for the analysis of national policies, legislation and practices. The procurement history, quantification, pricing, storage facilities, distribution, expiry and documentation were evaluated using a tool developed at the WHO Country office. Interviews with the medicine regulatory authority were categorized and summarized. Procurement and supply management indicators from the FMS were calculated and presented as tables and graphical representations. Facility responses were summarized, categorized and presented as frequencies in tables and graphs. Prices of medicines were analysed using the WHO/HAI price and availability workbook. While average price ratios were compared with international prices.

On a final analysis, they suggested that there was need to change /review and disseminate policies, legislation, guidelines and corresponding procedures for narcotics and controlled

medicines that will promote availability and accessibility as well as adequate control of the products. Secondly, Policies on the management of HIV, Family and Reproductive Health, Cancer, Mental Health, Surgery etc. needed to integrate adequate statements that necessitate constant availability of appropriate controlled products in health facilities at all times. On Procurement and supply management they also suggested an institution of a Narcotics Medicines Revolving Fund in order to guarantee sufficient and sustainable financing for the procurement of narcotic medicines. Procurement and distribution of narcotics should be only on the basis of quantification of expressed needs by facilities. And, such procurements should be annually and in bulk to ensure reasonable pricing.

This study investigates the evidence of full access / lack of access to affordable essential medicines in Nigeria. It delineates the factors leading to insufficient access to affordable essential medicines and identifies barriers to ATM. Where possible, it examines successful interventions and strategies by the Nigerian government for reducing barriers to ATM where these have been identified in this research. Earlier empirical studies found that the major challenges of access to medicines lie between availability and affordability, especially in poor countries<sup>253</sup>. The idea that availability poses a serious challenge in terms of distribution / supply and storage/ administrative goes back at least to several studies conducted in different countries<sup>254</sup>. Because of lop-sided distribution system and high markups, medicines tend to be more expensive in private facilities especially, in LMICs. Hence, the need for international cooperation and global policy change. Based on this theoretical argument, one would expect that national governments would review their medicine policies and ensure availability of medicines at affordable rates in both public and private facilities. However, earlier empirical

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<sup>253</sup> Action Group for Health Human Rights and HIV/AIDS (AGHA) Uganda. (2007). A Promise Unmet: Access to Essential Medicines in Three New Districts of Uganda: AGHA.

<sup>254</sup> Disease Control Priorities Project (DCP). (2008). Ensuring Supplies of Drugs and Vaccines in Developing Countries. Available at: <http://www.dcp2.org/file/220/dcppdrugsandvaccines-web.pdf> (accessed: 05.01.2012).

evidence points towards the fact that majority of counterfeit and sub-standard stocks are found mostly in developing countries in both public and private facilities due to poor administration and storage system. Another study<sup>255</sup> points in the opposite direction, that a number of interventions have the potential for improving medicines' availability without requiring large-scale international cooperation or global policy change. The absence of evidence in this field does not prove lack of effect. There is a need for more systematic studies of multi-faceted pharmaceutical interventions to improve medicine availability in the context of difficult health systems, such as structured supervision of remote health facilities, staff training, integration of disease-specific programmes, and implementation of national pharmacy standards, non-monetary staff incentives and measures to ensure cost is not a barrier to access. The study also proposed that a standardised approach to measuring the availability of essential medicines is needed. The study carried out a desk top assessment of the efficiency of pharmaceutical systems interventions in improving the availability of essential medicines at the primary care level, by searching for examples of pharmaceutical systems interventions in low and middle income countries where the effect of specific interventions on availability of medicines were assessed. Even though the article indicated that qualitative and quantitative studies were included, there was scarce evidence to validate that claim. The results revealed that Seventeen studies were included, on privatisation of drug distribution, user-fees, revolving drug funds (RDFs), supervisory visitation programmes, staff training initiatives, community-directed interventions (CDIs) and disease-specific drug programmes. Having found no studies on non-monetary staff incentives or the use of national pharmacy standards, the study concluded that mostly, the quantity and quality of evidence was low; evidence was strongest for supervisory visitation programmes and CDIs. Further

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<sup>255</sup> Nunan M 1, Duke T. (2011). Effectiveness of pharmacy interventions in improving availability of essential medicines at the primary healthcare level. *Trop Med Int Health*. 2011 May;16 (5):647-58. doi: 10.1111/j.1365-3156.2011.02748.x. Epub 2011 Feb 22. Blackwell Publishing Ltd. <http://www.ncbi.nlm.nih.gov/pubmed/21342375>

research with more recent data is needed to assess whether these results are statistical pieces caused by data weaknesses in this study.

A 2013 cross-sectional survey of 60 hospital pharmacies randomly selected from 184 GHAIN-supported health facilities by Oqua , Agu , Isah, Onoh , Iyaji , Wutoh and King<sup>256</sup> disclosed that through public health program, HU-PACE created an enabling environment and improved capacity of pharmacy personnel for quality HIV/AIDS and TB services. This has contributed in diverse ways to better monitoring of patients on pharmacotherapy by pharmacists through access of pharmacists to patients' clinical information.

They stated that the use of medicines is a crucial component of many public health programs (PHPs). Medicines are important not only for their ability to treat and prevent diseases but the public confidence of every healthcare system is unavoidably linked to their confidence in the availability of quality and efficacious medicines and the measures for ensuring their rational use. However, pharmacy services component receives little or no attention in most public health programs in developing countries. Although the assessment was conducted at baseline and ought to be repeated after at least 12 months post-intervention using a study-specific instrument, there is no evidence of a follow up assessment.

In light of inconclusive evidences and lack of a rich body of sociological studies that examines ATM as a part of the Nigerian health system, with regards to how it functions within the system and how its functionality affects the output (service delivery) of the entire system. There is need for more empirical study on ATM in Nigeria. Therefore, Drawing on focused group discussions, questionnaires, patient-exit interviews and in-depth interviews with people who work in the pharmaceutical sector as well as patients, this research focuses

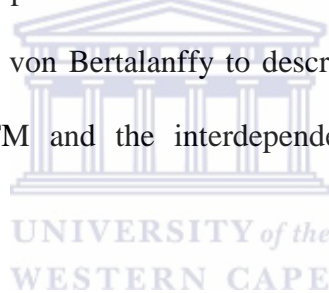
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<sup>256</sup> Oqua D, Agu K.A, Isah MA, Onoh O.,U, Iyaji P.G, Wutoh A.K., King R.C., (2013). Improving pharmacy practice through public health programs: experience from Global HIV/AIDS initiative Nigeria project. Springerplus. 2013 Oct 17;2:525. doi: 10.1186/2193-1801-2-525. eCollection 2013

on examining ATM framework in Nigeria by reviewing determinants of ATM and further defining at which level of the Nigerian health system they are likely to occur. This study contributes to ongoing theoretical debates about the performance, rebuilding and barriers of ATM, as well as the literature on Essential medicines.

Even though there is abundant literature on EM and ATM in other countries, there is scarcity of literature on in depth empirical assessment of the existing ATM framework and its determinants in Nigeria. There is lack of empirical investigation and definition of all constraints to ATM, at which level of the Nigerian health system they occur and how this generally affects the functionality of the health system.

Consequently, this research attempts to conduct a holistic investigation of ATM in Nigeria using systems theory by Ludwig von Bertalanffy to describe and determine the complexity and multifaceted nature of ATM and the interdependence nature of ATM and other constituents of a health system.



## **2.4. THEORETICAL FRAMEWORK: SYSTEMS THEORY**

### **Introduction:**

What was adopted in this research for the purpose of theoretically framing the study is Systems theory. It provides a general analytical framework for viewing the Nigerian Health system. Developed from biology, System theory is a logical doctrine which describes systems as 'abstract organizations independent of substance, type, time and space'<sup>257</sup>. It originated from Ludwig Von Bertalanffy's General System Theory<sup>258</sup>, and was later modified by Talcott

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<sup>257</sup> Churchman, C. W. 1968. *The Systems Approach*. New York: Dell Publ. Co.

<sup>258</sup> Rudolf Stichweh 2011. "Systems Theory", in: y. In: Bertrand Badie et al. (eds.), *International Encyclopedia of Political Science*. Sage New York

Parsons for use in sociological analysis in early 1950s and Niklas Luhman in the 70s as Social System Theory for use in other fields<sup>259</sup>.

The theory is opposed to more atomistic approaches in which objects are studied as distinct or singular phenomena. It focuses on the interrelationships and interdependence between separate disciplines by assuming that one cannot study nor understand the functions of a system without first, understanding the functions of and interconnection of the components of that system and how that contributes to the whole. Here, a system is considered as “a set of related components that work together in a particular environment to perform whatever functions are required to achieve the system's objective”. In addition, the theory further identifies the existence of sub systems<sup>260</sup>. These sub systems are self-contained but interrelated systems within a system. Systems theory stresses the important of recognising these subsystems, given the fact that understanding their interdependence is key to developing a complete system<sup>261</sup>.

The Systems Theory propounded by von Bertalanffy emphasises the importance of integration of parts of a problem<sup>262</sup>. It reminds us that problems or dysfunctional systems cannot be solved or fixed if they are considered in isolation from interrelated components. Other proponents<sup>263</sup> also suggest that a system (human and nonhuman) operates at three distinct levels<sup>264</sup>; the purpose of the system, the purpose of its parts, and the purpose of the system of which it is a part, the suprasystem. This means that it centres on the interdependence between the components (of a system) which connect them into a whole (the

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<sup>259</sup> 1968, General System theory: Foundations, Development, Applications, New York: George Braziller, revised edition 1976: ISBN 0-8076-0453-4

<sup>260</sup> Encyclopedia of Sociology (2006). SYSTEM THEORIES. Blackwell :Oxford.

<sup>261</sup> Wallerstein, I. (2004). World-Systems Analysis: An Introduction. Durham, N.C.: Duke University Press

<sup>262</sup> Von Bertalanffy, L. (1969). General system theory: foundations, development, applications (Revised Edition).

<sup>263</sup> Howley, P., & Chuang, S., (2011). Systems theory and improving healthcare, Proceedings of the Fourth Annual ASEARC Conference, Australia

<sup>264</sup> Greenfield, D., & Braithwaite, J. (2008). Health sector accreditation research: a systematic review. International Journal for Quality in Health Care, 20(3), 172-183.

system itself). This particular interconnectedness defines a system, which is independent of the concrete substance of the components (e.g. people, organizations etc). Thus, the same concepts and principles of organization underlie every phenomenon, providing a basis for their unification<sup>265</sup>. Systems concepts include: system-environment boundary, input, output, process, state, hierarchy, goal-directedness, and information.

The method proposed by systems theory is to model complex entities created by the multiple interaction of components by abstracting from certain details of structure and component, and concentrating on the dynamics that define the characteristic functions, properties, and relationships that are internal or external to the system<sup>266</sup>. Systems theories are linked to both ontological and epistemological interpretations<sup>267</sup>. The ontological interpretation infers that the world is made up of systems or integrative stages. The epistemological interpretation adopts a general (holistic) perspective with emphasis on the interplay between the systems and their elements in determining their respective functions<sup>268</sup>. And this research focuses on the epistemological interpretation which looks at the Nigerian healthcare system with emphasis on ATM and its functions, as a part of the healthcare system.

How does systems theory enable us to understand ATM in Nigeria? System theory has been applied to a wide range of empirical studies and policy issues. For example, in applying systems theory to organizations, Peter Senge, proposed that when it comes to systems theory, Synergy and Nonsummativity are important. Senge suggested that systems theory is an Attempt to widen the lens through which we examine and understand organizational behaviours such as interdependence; through communications, teams are able to learn more

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<sup>265</sup> Francis H., & Cliff J., (1992). What is systems theory? Prepared for the Cambridge Dictionary of Philosophy:Cambridge University Press. Available at: <http://pespmc1.vub.ac.be/SYSTHEOR.html> Accessed on : 29th august, 2013.

<sup>266</sup> Jones, B. L (2002). Jones Health Care Consulting for the National Consortium on Health Science and Technology Education.

<sup>267</sup> Lilienfeld, R. (1978). The Rise of Systems Theory. An Ideological Analysis. New York.

<sup>268</sup> Ryan, A., & Bohman, J. (1998). Systems theory in social science. IN: Routledge Encyclopedia of Philosophy, Version 1.0, London: Routledge

than individuals operating alone; requisite variety which emphasises that organizations cannot separate from their environment. Systems are a set of interrelated parts that turn inputs into outputs through processing. Subsystems do the processing within every system. While Super systems are other systems in the environment of which the survival of the focal system is dependent<sup>269</sup>.

Additionally, when reports on healthcare system's performance are compiled, these reports oftentimes do not identify specific areas and their performance rate within the system. Rather, reports are written on performances across the entire healthcare system by clinical area. The implication of this is that, policy makers and other stakeholders within the health sector might never understand the significance or value of each component of the system and how each affects health care objectives and outcomes. However, a systems approach to ATM analysis will enable us focus on the Nigerian healthcare system, with emphasis on Access to Essential medicines and how the interplay between their elements contribute to the healthcare system.

In applying systems analysis to the Nigerian healthcare system, one could say that a healthcare system on its own is a highly complex system – it has many interconnected component that makes it almost impossible for one to quantify access to healthcare delivery in a structured and distinct manner. Therefore, in order to clearly identify the important determinants of access to healthcare in Nigeria, which is basically the objective of every healthcare system, systems theory, provides a platform for that. Given the fact that a healthcare system is indeed multifaceted, identifying its major constituents, their interrelationships and functions within the system would give a clear direction on resource allocation and management.

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<sup>269</sup> Senge, P.(1990). The Fifth Discipline: The Art and Practice of the Learning Organization



Just like the parts that make up the system are interconnected in systems theory and the health of the overall system is dependent on subsystem functioning. In the same way, the various components of the Nigerian healthcare are interrelated, and the strength of the healthcare system is contingent on the functioning of ATM and other subsystems.

There have been widespread arguments that the Nigerian healthcare system does not effectively provide quality care for Nigerians. And, most of these critics often point at inadequate funding. They point out that the system is underfunded based on the WHO requirement that countries should fund healthcare sector up to 11% of their GDP. However, a closer look at the correlation between health funding and outcomes/ indicators shows that the problem goes beyond inadequate funding; as the recurrent health expenditures increased, there was no significant impact on health indicators / outcomes). This leads to the question; should the Nigerian government decide to increase its healthcare funding, what aspect of the healthcare requires funding and where would they focus on? System analysis provides an investigative framework which will be used to describe not all, but one element involved in assessing healthcare delivery in every system which is ATM- Access to Medicine.

In understanding ATM as a key concern in healthcare delivery, especially, within the Nigerian context, concepts such as sub-systems would imply a smaller system within the healthcare system which ATM represents in this study.

Systems theory offers a basis for improvement in the Nigerian healthcare system given the fact that it supports the ability to focus on the whole system and the relationships of the parts or sub systems rather than just the isolated parts . Access to quality and affordable care is more likely in systems where interdependence and interrelationships are considered important. And, one cannot appreciate their importance except one takes time to understand their functions and how they contribute to the functionality or effectiveness of the whole.

Thus, when that happens, greater emphasis is placed on competencies; capacity building and process management.

When the systems approach is applied to the Nigerian healthcare system, a sub system within the system such as ATM is recognised as equally significant as Human resources and physical infrastructures. Hence, their interrelationship and interdependence, which are vital to social processes within the system, cannot be taken for granted. Applying this approach shifts the focus from policies and human resources to processes, structures and interdependence of components because it creates an awareness of the importance of relationship between components to all health sector stakeholders.

The relationship between the healthcare system, funding, access to healthcare and access to Medicine is critical, and occasionally fraught with confusion. The responsibility of the Nigerian government and healthcare providers to promote the right to health of every citizen by providing quality care which is characterised by access to medicines amongst others, could be challenged by the complexities of the healthcare system. The study seeks to investigate, when, where and how individuals in Nigeria seek access to medicines and investigate interactions between different dimensions of access as well as how they affect the healthcare system in general.

The Nigerian healthcare system, like other health systems is made up of several components with overlapping functions of which it is possible for one to differentiate at least three levels: the function of the healthcare system, the function of its components and the function of the supra system. Systems theory proposes a platform to perfect the complex system generated by the interaction of all of parts of the Nigerian healthcare system by departing from details regarding structure and component and rather, focusing on the underlying factors that define the characteristic functions, properties, and relationships that are internal or external to the

Nigerian healthcare system such as ATM. This research will therefore focus its attention on the Nigerian healthcare system as ‘the whole’, as well as on the complex interrelationship between two of its constituent parts; ATM and Access to healthcare. This perspective would serve as a comprehensive, all inclusive and complementary way of investigating one aspect of a general concept which is; how the function of ATM (could be any other component such as Human resource)

### **Systems Theory- Background**

Starting from the early 1930's and up until after the Second World War, researchers and philosophers from different disciplines initiated the publication and discussion on a series of papers on the basic attributes / components found in all systems. This quest for general laws that will be applicable to all systems became known as ‘General Systems Theory’. During the Second World War, the crux of the matter was the usual problem of logistics and supply lines to serve people at the battlefield. The military was preoccupied with how to get the accurate numbers and kinds of soldiers / support forces, materials and equipment, munitions and weapons, to the right place at the right time. Strategists discovered that systems theory gave them concepts, a mathematical base, and a new level of efficiency in solving such complications and challenges. Based on that understanding, systems thinking made further progress with advances in computers. In sociology and associated fields, systems thinking advanced forward in the 1960's<sup>270</sup> and its concepts were subsequently applied in many practical circumstances.

Despite the fact that most of the conceptual properties of General systems theory are borrowed from a couple of disciplines, it has made significant contributions to them. Among those disciplines are: Biology, Philosophy, Sociology, Psychology, Chemistry, Economics,

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<sup>270</sup>Buckley, Walter. (1968) *Modern Systems Research for the Behavioral Scientist: A Sourcebook*. (Chicago: Aldine, 1968)

Computer, Physics, Information Theory and Operations Research. General systems theory is viewed as a relatively old concept which keeps evolving, considering the fact that its complexity has led to a constant evolution. As a concept, it dates back to the early 1930s following the intellectual leaps of Ludwig von Bertalanffy<sup>271</sup> and his burst of energy during the Second World War which led to the significant advancement of systems thinking among scholars. Its foremost focus as an interdisciplinary theory was about the nature of compound systems in nature, society, and science. It was also regarded as a framework by which one can examine and/or describe any group of objects that work together to produce some result such as a single organism, any organization or society, or any electro-mechanical or informational artefact<sup>272</sup>. Over time, Systems theoretical approaches were later adopted in other fields<sup>273</sup> and disciplines, such as in the structural functionalist sociology<sup>274</sup> of Talcott Parsons and Niklas Luhmann<sup>275</sup>.

Systems theory was proposed and popularised by the biologist Ludwig von Bertalanffy<sup>276</sup> and promoted by Ross Ashby with his work; Introduction to Cybernetics in 1956. Bertalanffy in reaction to 'REDUCTIONISM' and quest to awake the 'UNITY OF SCIENCE' underscored that real systems are open to, and interact with, their environments, and that they can obtain qualitatively new properties via EMERGENCE, bringing about recurrent EVOLUTION. Instead of separating or decreasing a unit (e.g. an organization or the human body) to the properties of its parts or elements (e.g. organs or cells), systems theory 'focuses on the arrangement of and RELATIONS between the parts which connect them into a whole (the

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<sup>271</sup> Bertalanffy, V L., (1968). General System Theory: Foundations, Development and Application. New York: Brazillier, 1968.

<sup>272</sup> Bertalanffy (1972) "The History and Status of General Systems Theory." Trends in General Systems Theory. Ed. George J. Klir. New York: Wiley-Interscience, 1972. 21-40.

<sup>273</sup> Mattessich, R. (1978) Instrumental Reasoning and Systems Methodology: An Epistemology of the Applied and Social Sciences. Reidel, Boston

<sup>274</sup> Buckley, Walter F. (1967) Sociology and Modern Systems Theory, Englewood Cliffs, N.J.: Prentice Hall.

<sup>275</sup> Niklas L (1996), "Social Systems", Stanford University Press, Palo Alto, CA

<sup>276</sup> Bertalanffy, V L. (1968) General System Theory - A Critical Review," General Systems, Vol. 7 1962: pp.1 20.

principle of HOLISM). This specific ORGANIZATION defines a SYSTEM, which is not dependent on the tangible substance of the elements (e.g. components; particles, cells, people, etc). Accordingly, the same concepts and principles of organization motivate the different disciplines (physics, biology, technology, sociology, etc.), providing a base for their unification. Systems concepts include: system-environment Boundary, Input, Output, Process, State, Hierar-Chy, Goal-Directedness, and Information<sup>277</sup>.

#### **2.4.1. Systems Theory: Definition**

Although systems theory could not be said to have a well-established, clear-cut meaning, Systems theory or general systems theory or systemics could be described as an interdisciplinary field which studies systems as a whole. Many early systems theorists aimed at finding a general systems theory that could explain all systems in all fields of science and the term goes back to Bertalanffy's book titled "General System theory: Foundations, Development, Applications" from 1968<sup>278</sup>. Von Bertalanffy, established the "allgemeine Systemlehre" (general systems teachings) first via lectures beginning in 1937 and then via publications beginning in 1946.<sup>279</sup> Von Bertalanffy's aim was to collate and unify his observations as a biologist, termed as 'organismic science' under one heading. He desired to use the word 'system' for those principles that are common to systems in general... or as "elements in standing relationship" According to him, '...there exist models, principles, and laws that apply to generalized systems or their subclasses, irrespective of their particular kind, the nature of their component elements, and the relationships or "forces" between them.

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<sup>277</sup> Berrien, Frederick K. (1968) General and Social Systems, New Brunswick, NJ: Rutgers University Press.

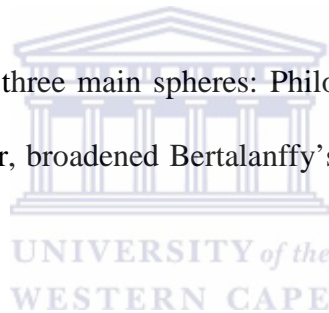
<sup>278</sup> Bertalanffy V (1968), General System theory: Foundations, Development, Applications, New York: George Braziller, revised edition 1976: ISBN 0-8076-0453-4

<sup>279</sup> Karl Ludwig von Bertalanffy: ... aber vom Menschen wissen wir nichts, (English title: Robots, Men and Minds), translated by Dr. Hans-Joachim Flechtner. page 115. Econ Verlag GmbH (1970), Düsseldorf, Wien. 1st edition.

It seems legitimate to ask for a theory, not of systems of a more or less special kind, but of universal principles applying to systems in general<sup>280</sup>.

Von Bertalanffy deliberated on the philosophies of organization involved at different levels in the expression of natural systems and outlined the aims of the theory as”: a general tendency toward integration in the various sciences, natural and social. Secondly, such integration seems to be centered in a general theory of systems. Besides, the theory may be an important means for aiming at exact theory in the nonphysical fields of science. Additionally, developing unifying principles running "vertically" through the universe of the individual sciences, this theory brings us nearer the goal of the unity of science. Lastly, this can lead to a much-needed integration in scientific education.”<sup>281</sup>

He outlined systems theory into three main spheres: Philosophy, Science, and Technology. Later on, Béla H. Bánáthy further, broadened Bertalanffy’s three areas into four integratable areas of systemic inquiry thus:



Sphere	Description
Philosophy	the ontology, epistemology, and axiology of systems;
Theory	a set of interconnected notions and philosophies applying to all systems
Methodology	the set of models, strategies, methods, and tools that instrumentalize systems theory and philosophy
Application	the application and interaction of the domains <sup>282</sup>

These, according to him function in a recursive relationship. Incorporating Philosophy and Theory as Knowledge, and Method and Application as action, Systems Inquiry then is

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<sup>280</sup> opcit

<sup>281</sup>(Von Bertalanffy, 1968, p. 38.)

<sup>282</sup> 1996, Designing Social Systems in a Changing World, Plenum, NY. ISBN 0-306-45251-0

knowledgeable action. Béla H. Bánáthy, who argued sideways with the founders of the systems society that "the benefit of humankind" is the purpose of science, made noteworthy and broad contributions to the systems theory. Bánáthy defined systems theory as 'a world-view that is based on the discipline of SYSTEM INQUIRY'<sup>283</sup>. Central to systems inquiry is the concept of SYSTEM. In the most general sense, system means 'a configuration of parts connected and joined together by a web of relationships; the Primer group defines system as a family of relationships among the members acting as a whole'.<sup>284</sup>

Schein<sup>285</sup> views systems theory as a unit that contains frequently co-operating or interrelating groups of activities. For instance, in observing the effect in organizational psychology as the field evolved from "an individually oriented industrial psychology to a systems and developmentally oriented organizational psychology", he acknowledged that organizations have complex social systems; splitting the parts from the whole diminishes the general efficiency of organizations<sup>286</sup>. This variance, from orthodox models that focus on individuals, structures, departments and units, splits in part from the whole, instead of distinguishing the interdependence between groups of individuals, structures and procedures that aids the functionality of an organization.

The Society for General Systems Research which changed its name to the International Society for Systems Science in 1988, explicitly considered systems theory as an area of study, which advanced following the World Wars based on the work of Ludwig von Bertalanffy, Anatol Rapoport, Kenneth E. Boulding, William Ross Ashby, Margaret Mead, Gregory Bateson, C. West Churchman and a host of others during mid-1950s<sup>287</sup>. Conscious

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<sup>283</sup> Bertalanffy V (1996), *Designing Social Systems in a Changing World*, Plenum, NY. ISBN 0-306-45251-0

<sup>284</sup> Bertalanffy V., (1998) , *Evolution Guided by Design: A Systems Perspective*, in *Systems Research*, Vol. 15

<sup>285</sup> Schein 1980: 4-11

<sup>286</sup> *ibid*

<sup>287</sup> "An Outline for General Systems Theory" in the *British Journal for the Philosophy of Science*, Vol 1, No. 2, by 1950.

of progresses in science that questioned classical assumptions in the organizational sciences, Bertalanffy's idea to develop a theory of systems began as early as the interwar period and spread rapidly with emphasis on 'interdependence, holism and interaction'.

General systems theory at a basic level could be described as: elements, which are in interchange, and which are bounded. These modules constitute a "system", which functions or works within a field or an environment. Elements can be nearly anything you desire to label as such, the interactions are any relationships that exist between elements, and the boundary is what one can feel, sense, see or hear, that separates "system" from the background or environment<sup>288</sup>.

General system theory, like other pioneering frameworks of thought, experienced stages of mockery and negligence. However, it has profited, from the corresponding emergence and rise to prominence of cybernetics and information theory, and their widespread applications to originally quite distant fields. Although it grew out of organismic biology, general system theory soon diverged into a number of the humanities. Its acknowledgment as a platform for research of human behaviour and organizations has led to contemporary applications in areas such as social work, sociology of health, psychology, mental health, and the political and behavioral sciences.

Basically, General Systems Theory advances beyond the typical scientific approaches in promoting that a system can only be understood as a functioning whole, rather than in terms of its building blocks or major components. General Systems Theory does not disregard components; rather it emphasizes the interconnections between constituent parts of a system.

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<sup>288</sup> Robert Gregory. (ND). General Systems Theory: A Framework for Analysis and Social Change"Robert J. Gregory, Ph.D. School of Psychology Massey University Palmerston North, NEW ZEALAND Phone: 64 6 350-5799 ext. 2053 E-Mail: [R.J.Gregory@massey.ac.nz](mailto:R.J.Gregory@massey.ac.nz) available at ; <http://wsarch.ucr.edu/archive/papers/gregory/gensysTh.html>



Fundamentally, Davidson<sup>289</sup> views General Systems Theory as "the ultimate generalization of the organismic conception" whereas Bertalanffy ignores the organic metaphor in a simple manner. Nonetheless, General Systems Theory seeks to; see what values are true of a wide range of systems (i.e., what can be said of systems as systems). These principles comprise wholeness, interaction with environment, self-maintenance, life cycle, and isomorphism.

Miller<sup>290</sup> delimits systems as "bounded regions in space-time, involving energy interchange among their parts, which are associated in functional relationships and with their environments . . . . A system is all of a thing." Mcloughlin,<sup>291</sup> adds, "A system may be defined as an assembly of components, having distinguishable properties, among which relationships are observed. To a person who has yet to understand some relationship between components or between their properties, there is no system." And finally, Rapoport says a system is "a whole which functions as a whole by virtue of the interdependence of its parts."<sup>292</sup> From these definitions one possibly will conclude that systems consist of a collection of vigorous events that are in some way interrelated and interdependent<sup>293</sup>.

#### **2.4.2. Application of Systems Theory to the Study of ATM in Nigeria**

Systems theory lays emphasis on complexity and interdependence. Its basic definition of a system as an operational framework is that a system is made up of recurrently interrelating or mutually dependent groups of actions/parts that constitute a whole.

The systems perspective is based on a number of important ideas. To begin with, all phenomena can be regarded as a network of relationships among components, or a system.

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<sup>289</sup> Davidson, Mark. (1983). *Uncommon Sense: The Life and Thought of Ludwig von Bertalanffy, Father of General Systems Theory*. Los Angeles: J.P. Tarcher, Inc

<sup>290</sup> Miller, James G. "Living Systems: Basic Concepts," *Behavioral Science*, Vol 10, No. 3 (July 1965): 193-237

<sup>291</sup> Mcloughlin, J. Brian. 1969. *Urban & Regional Planning: A Systems Approach*. (NYC: Praeger, 1

<sup>292</sup> Rapoport A., (1968). "Forward", in Buckley, *Modern Systems Research for the Behavioral Scientist*, (Chicago: Aldine Publishing Company: xiii-xxi

<sup>293</sup> Rapoport, Anatol and Horvath William J., "Thoughts on Organization Theory," *General Systems*, Vol. 4 (1959): 87-91

Secondly, all systems, irrespective of their foundations or backgrounds; be it biological, electrical or social, have mutual patterns, actions, and elements that the observer can evaluate and use in developing a bigger understanding of the performance of multifaceted phenomena as well as to advance rapidly towards a harmonisation of the sciences.

For instance, an application of systems theory in this study, considers the Nigerian bio medical health care sector as a system, and observing the number of constituent parts such as the personnel, financial budget, medicines / diagnostics, physical infrastructure, patients' inflow and consulting with professionals would be an undertaking of a systems monitor. Tracking patients' ability to get diagnosis, pay for treatments, and difficulties in accessing either treatment or prescribed medicines would ultimately lead to interventions that may possibly improve access and also help in strengthening the healthcare system generally.

The implication of the analogy above for ATM in this study is that access to quality and affordable essential medicines is considered a system on its own, in spite of the fact that it is dependent on another system which is the healthcare system. Observing and assessing the factors that influence ATM or the determinants of ATM in Nigeria, which are considered its constituent part such as the demand and supply side determinants<sup>294</sup> is basically what this study is all about. Consequently, a holistic investigation and analysis of the geographical and financial accessibility, availability, acceptability and quality otherwise known as the 4As of ATM would ultimately lead to interventions that would possibly improve ATM and also help in strengthening the healthcare system generally. ATM as concept generally sums up a set of dimensions which cut across the demand and supply side paradigms, and these define the fit between the patient and the health care system. This goes to say that when assessing ATM, systems theory presents a framework that enables one to understand the significance and

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<sup>294</sup> Roy Penchansky and J. William Thomas. (1981). The Concept of Access: Definition and Relationship to Consumer Satisfaction Medical Care Vol. 19, No. 2 (Feb., 1981), pp. 128-139

implication of a holistic and all inclusive assessment rather than the one sided analysis from most studies (as evident from a review of literatures) that tend to focus on either the demand side or supply side but not analysing both dimensions holistically.

Systems theory operates on the premise that as the interaction and co-operation of a system surges the system becomes progressively vulnerable to disruption as a result of the failure of a specific component(s) or breakdown of one of the interaction(s). This propensity is well acknowledged and most complex systems dedicate part of their resources to protecting against such disruptions. In the case of ATM in Nigeria, on the supply side, administrative failures coupled with lopsided supply and distribution procedure has been responsible for the disruption of the system, while on the demand side, irregular demand for certain class of medicines has been the major constraints to ATM.

According to the proponents of systems theory, the commonest defence against system breakdown which in the case of ATM is lack of access to medicines is through devoting part of the resources of the system to the administration and control of the activity of the components or subsystems. This could be done by providing more organized supervision, regulation, management, planning, as well as an improved number of personnel in administrative positions given the fact that systems achieve better control over their own activities and are able to forestall and prevent interaction and co-operation problems among their components.

Thus when studying ATM, there is need to study patterns of interaction among ATM, or the constituent parts / dimensions of ATM without ignoring any sub system of ATM as it were. It is obvious that each of the sub systems or ATM dimensions otherwise known as the 4As are embodied by each of these choices of systems and very different findings and recommendations will result from each of these different investigations. It is therefore most

proper to study all demand and supply side dimensions of ATM in order to wholly understand its existing framework in Nigeria and reasons for failure of past interventions and strategies, if any.

Systems theory as a framework has been developed to provide methods for studying systems in holistic ways in order to complement more traditional reductionist methods<sup>295</sup>. In its most recent form, it is perceived by most people as a humanistic counterpart to the natural sciences considering its aim of explaining multifaceted systems which consist of a great number of jointly interrelating and intertwined parts such as ATM.

Talcot parsons' sociological presentation of systems theory highlighted the idea of an interaction situation based on need-dispositions and facilitated through the basic concepts of cognitive, cathectic and evaluative orientation. Other theorists averred that entities have multifaceted social or sub systems therefore, separating the parts from the whole reduces the overall effectiveness of organizations. In the same vein, when studying ATM, an analysis that separates the demand and supply side dimensions of the 4As of ATM without analysing the system as a whole, diminishes the general efficiency of ATM and might produce results and findings that cannot be applied to every context within the ATM discourse.

According to Russell Ackoff<sup>296</sup>, a system is made up of a set of two or more interconnected components with the following features: first, each component has an effect on the 'functioning of the whole'.<sup>297</sup> Additionally, each component is affected by at least one other component within the system. To sum it up, all possible subgroups of components also have the first two features<sup>298</sup>. By substituting the concept of 'component' for that of 'the 4As / supply and demand dimensions of ATM,' it is possible to arrive at a definition that pertains to

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<sup>295</sup> Niklas L (1994) Soziale Systeme. Grundriss einer allgemeinen Theorie, Frankfurt, Suhrkamp, 1994

<sup>296</sup> Ackoff, R.L. (1981). Creating the corporate future. New York: John Wiley & Sons.

<sup>297</sup> opcit

<sup>298</sup> ibid

ATM as a system. In which case, a whole made up of interdependent components in interaction is identified as the system<sup>299</sup>. In the most basic definition, ATM as a system is a group of interacting components that supports some distinguishable set of relations with the totality of the components as well as their relations (i.e., the system itself) while maintaining some identifiable set of relations to other entities (including other systems) which in this case is the Nigerian healthcare. This definition of a system further confirms that of Macy whose perception of a system is 'less a thing than a pattern'<sup>300</sup>.

The demand and supply dimensions of ATM are interconnected and each dimension has an effect on the functioning of ATM within the healthcare system. Moreover, each dimension is affected by other determining factors such as the 4As of ATM; availability, accessibility, availability and affordability. Therefore, in trying to understand ATM, there is need to study it holistically rather than studying the various dimensions in isolation. Likewise, one cannot fully understand how the Nigerian healthcare functions, without first of all, understanding how the operation or inaction of ATM within the system affects its functioning. Until one understands the role and relevance of Essential medicines within a healthcare system, getting suitable and sustainable strategies; such that would match the 'access' needs of the people, would remain an illusion.

Operationally, a system is a separable whole, but functionally it is an inseparable union with evolving features. An evolving feature is distinct by the appearance of unique characteristics displayed on the level of the general ensemble, but not by the components in isolation. There are two significant traits of evolving properties: originally, they are lost when the system breaks down to its components — ATM, for instance, does not inhere in dimensions once they are broken down into the 4Aa. Likewise, the Nigerian healthcare system, when broken

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<sup>299</sup> Ackoff, R.L. (1976). The systems revolution. Long Range Planning. 1-20

<sup>300</sup> Macy, J. (1991). Mutual causality in Buddhism & general system theory. USA: SUNY Press.

down into departments loses its unique features. Secondly, when a component is detached from the whole, that component itself will lose its evolving properties. Operationally, this means that when the supply or demand dimensions of ATM are studied in isolation, it loses its features (the 4As) which enables one to understand how the system functions. For instance, a leg, separated from the body cannot walk.

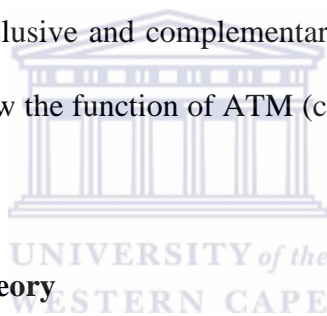
The notion of evolving features leads to the ‘synergy’ model, signifying that, the system is more than the sum of its parts. For instance, in systems theory, the interdependence among groups of entities, structures and processes enables an organization to function. Similarly, within the ATM concept, the interdependence, and effective interaction between the demand and supply patterns enables people to get access to quality and affordable essential medicines. Within the Nigerian healthcare, the interdependence and effective interaction between the personnel, physical infrastructures, medicines and diagnostics enables the system to function effectively. Therefore, in the event that something goes wrong, a holistic assessment of the interaction pattern within the system and its constituent parts rather than a lone assessment of each part would yield accurate results and lead to more sustainable intervention strategies.

Understanding the power within the interconnection of all components of a system gives insight into the fact that all phenomena such as ‘ATM within the Nigerian healthcare’ can be regarded as a web of relationships among components, or a system. Furthermore, all system irrespective of their origins have common patterns, behaviors, and properties that could be assessed and used to develop a better understanding of such systems and to get closer to a unity of the sciences.<sup>301</sup> The multifaceted nature of ATM requires a holistic approach that system theory offers in order to get sustainable solutions.

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<sup>301</sup> opcit

The Nigerian healthcare system, is made up of several components with overlapping functions of which it is possible for one to differentiate at least three levels: the function of the healthcare system, the function of its components and the function of the supra system. Systems theory proposes a platform to perfect the complex system generated by the interaction of all of parts of the Nigerian healthcare system by departing from details regarding structure and component and rather, focusing on the underlying factors that define the characteristic functions, properties, and relationships that are internal or external to the Nigerian healthcare system such as ATM. This research will therefore focus its attention on the Nigerian healthcare system as ‘the whole’, as well as on the complex interrelationship between two of its constituent parts; ATM and Access to healthcare. This perspective would serve as a comprehensive, all inclusive and complementary way of investigating one aspect of a general concept which is; how the function of ATM (could be any other component such as Human resource)



#### **2.4.3. Significance of systems theory**

An eastern philosophy states in accordance with the principles of systems theory that ‘Things do not have a meaning in themselves, but only in relation to other things’. Which means that one can never truly understand an entity when studied in isolation, until its relationship or interdependence with other entities are measured. The ideas and concepts of general systems theory can be valuable as ways to understand and conceptualize human beings, communication, their communities and their environment.

The significance of applying systems theory as a major framework for analysing Access to quality and affordable essential medicines in Nigeria is due to the fact that general systems theory offers a unique perspective and framework as an approach for studying systems behaviour in a holistic manner, given its opposition to more atomistic approaches in which

objects are studied as distinct or singular phenomena<sup>302</sup>. According to Prigogine<sup>303</sup> the countless conceptual frameworks of the systems approach and associated areas have a lot to offer for the conceptualization of a holistic methodology for perceptual inquiry. As he noted, "the basis for any natural law describing the evolution of social systems must be the physical laws governing open systems, i.e., systems embedded in their environment with which they exchange matter and energy"<sup>304</sup>. Without decreasing the study of psyche to physics, systems theory has the potential and offers a dominant conceptual approach for understanding the interrelation of humans and other entities, and the associated structures and processes specific to them, in both society and nature.

The Systems approach is a transformative one and centres on the interrelationships and interdependence between separate disciplines by assuming that one cannot study nor understand the functions of a system without first, understanding the functions of and interconnection of the components of that system and how that contributes to the whole. The application of 'holism' is a shift from traditional approach of studying phenomena in isolation. It gives an understanding of the function of each component of a system and also highlights how all elements work together for the general good of the system. In a broader sense, it establishes that within a system, the relationship between its components and their functions is one of critical importance to our understanding of system failures or collapse. The Systems theory by von Bertalanffy emphasises that problems or dysfunctional systems cannot be solved or fixed if they are considered in isolation from interrelated components.

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<sup>302</sup> Prigogine, I. et al. (1977). Long term trends in the evolution of complexity, Goals in a global community: The original background papers for Goals for Mankind, Ervin Laszlo et al. (eds). Vol. 1: Studies on the conceptual foundations. New York: Dutton.

<sup>303</sup> Prigogine, I. (1994). Science, reason and passion. World Futures, August, 493-507.

<sup>304</sup> Prigogine, I. et al. (1977). Long term trends in the evolution of complexity, Goals in a global community: The original background papers for Goals for Mankind, Ervin Laszlo et al. (eds). Vol. 1: Studies on the conceptual foundations. New York: Dutton.pp2



Systems theory has wide-ranging applicability. It could be applied to various fields and disciplines such as psychology, sociology, biology, physics, cybernetics, etc<sup>305</sup>. The reason for its comprehensive application is due to the fact that it is a framework for the analysis of all 'systems'. Its definition makes it possible for it to be applied within a range of contexts and across disciplines. As a field inquiry related to the holistic and integrative investigation of phenomena and entities, the systems framework is linked to both ontological and epistemological interpretations. The ontological interpretation infers that the world is made up of systems or integrative stages. The epistemological interpretation adopts a general (holistic) perspective with emphasis on the interplay between the systems and their elements in determining their respective functions. There are also parts of the systems approach that are ontological and aspects that are epistemological, and parts that are at once both and should not be circumscribed to either. Nonetheless, this research focuses on the epistemological interpretation which looks at the ATM framework within the Nigerian healthcare and its functions, as a part of the system. This study regards ATM within the Nigerian healthcare as a system. That is, is considered as "a set of related components that work together in the Nigerian health sector to perform whatever functions are required to achieve the system's objective.

Furthermore, Systems theory stresses the importance of recognising subsystems, given the fact that understanding their interdependence is paramount to developing an effective system. It is an attempt to widen the lens through which one examines and understand organizational behaviours such as interdependence since systems are a set of interrelated parts that turn inputs into outputs through processing.

Systems theory presents a conceptual field of inquiry given its potential to offer a trans-disciplinary basis for a concurrently critical and normative exploration of the relationship

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<sup>305</sup> ibid

between human perceptions and conceptions and the worlds they purport to represent<sup>306</sup>. According to Laszlo, studies of systems development and human perception are beginning to rely more and more on the systems approach. Systems theory does much to render the complex dynamics of human bio-psycho-socio-cultural change comprehensible. He noted that observed occurrences in the natural and human-made universe do not come in well-ordered disciplinary packages or branded scientific, humanistic, and transcendental: they consistently involve complex combinations of fields, and the multifaceted situations to which they give rise requires a holistic approach for their solution. Systems theory provides such an approach and can subsequently be considered a field of inquiry rather than a collection of specific disciplines<sup>307</sup>.

In applying systems analysis to ATM framework within the Nigerian healthcare system, one could say that a healthcare system on its own is a highly complex system – it has many interconnected component that makes it almost impossible for one to quantify access to healthcare delivery and ATM in a structured and distinct manner. Therefore, in order to clearly identify the important determinants of access to essential medicines within the Nigerian healthcare, which is basically the objective of every healthcare system, systems theory, provides a platform for that. Given the fact that a healthcare system is indeed multifaceted, identifying its major constituents, their interrelationships and functions within the system would give a clear direction on resource allocation and management.

Just like the parts that make up the system are interconnected in systems theory and the health of the overall system is dependent on subsystem functioning. In the same way, the various components of the Nigerian healthcare and dimensions of ATM are interrelated, and the

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<sup>306</sup>Alexander Laszlo and Stanley Krippner. (1998). *Systems Theories: Their Origins, Foundations, and Development*. Published in: J.S. Jordan (Ed.), *Systems Theories and A Priori Aspects of Perception*. Amsterdam: Elsevier Science, 1998. Ch. 3, pp. 47-74.

<sup>307</sup> *ibid*

strength of the healthcare system is contingent on the functioning of ATM and other subsystems. This leads to the question; should the Nigerian government decide to increase its healthcare funding, what aspect of the healthcare requires funding and where would they focus on? What dimensions of ATM are responsible for the systems failure? Is it the demand or supply side? System analysis provides an investigative framework which will be used to describe not all, but one element involved in assessing healthcare delivery in every system which is ATM. One cannot appreciate its importance except one takes time to understand the functions and how such contribute to the functionality or effectiveness of the whole. Thus, when that happens, greater emphasis is placed on competencies; capacity building and process management.

When the systems approach is applied to the Nigerian healthcare system, a sub system within the system such as ATM is recognised as equally significant as Human resources and physical infrastructures. Hence, their interrelationship and interdependence, which are vital to social processes within the system, cannot be taken for granted. Applying this approach shifts the focus from policies and human resources to processes, structures and interdependence of components because it creates an awareness of the importance of relationship between components to all health sector stakeholders. This study investigates, when, where and how individuals in Nigeria seek access to medicines and investigate interactions between different dimensions of access as well as how they affect the healthcare system in general.

Von Bertalanffy considered the philosophies of organization involved at various levels in the manifestation of natural systems and presented it in form of a general systems theory that can be applied across disciplines and systems. Thus, systems theory presents a 'model' a typically new paradigm / effort at scientific incorporation and theory formulation on the trans

disciplinary level. Clearly, systems theory is not limited to the hard sciences cuts across the humanities as well<sup>308</sup>.

The systems framework views the world, phenomena and entities in terms of irreducibly integrated systems by paying attention particularly on the whole, as well as on the complex interrelationships among its component parts. This way of 'perception' or perceiving things is not an alternative, but a complement, to the specialized or isolated way. It is more all-embracing and comprehensive, incorporating the specialized / isolated perspective as one aspect of a general conception<sup>309</sup>. The general systems method thus, boosts the development of a global, more unitary consciousness, team work, collaboration, learning for life, and exposure to the universal storehouse of accumulated knowledge and wisdom given its qualitative nature

Systems theory as a framework in this study provides the context for analysing data collected for descriptive insight. The use of the term General systems theory is based on the definition of von Bertalanffy which views a system as an assembly of components, having distinguishable properties, among which relationships are observed.....problems or dysfunctional systems cannot be solved or fixed if they are considered in isolation from interrelated components<sup>310</sup>. From the various definitions and across all disciplines, there appears to be a notable agreement as to the basic values and components of systems, such as the facts that:

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<sup>308</sup> A 1953 letter from economist Boulding addressed to von Bertalanffy summarizes the situation: I seem to have come to much the same conclusion as you have reached, though approaching it from the direction of economics and the social sciences rather than from biology -- that there is a body of what I have been calling "general empirical theory," or "general system theory" in your excellent terminology, which is of wide applicability in many different disciplines. I am sure there are many people all over the world who have come to essentially the same position that we have, but we are so widely scattered and do not know each other, so difficult is it to cross the boundaries of the disciplines. (As quoted in von Bertalanffy, 1968, p. 14.)

<sup>309</sup> opcit.

<sup>310</sup> Ludwig Von Bertalanffy (1968). General systems theory.

- i. A system is a set of related components that work together in a particular environment to perform whatever functions are required to achieve the system's objective.
- ii. Every system has two or more components which are considered sub systems and supra systems.
- iii. Understanding the principle of interdependence or inter relation of components in a system is key to developing a functional system.
- iv. Problems or dysfunctional systems cannot be solved or fixed if they are considered in isolation from interrelated components.
- v. Systems theories are linked to both ontological and epistemological interpretations
- vi. General Systems Theory is used to describe the behaviour of a range of complex, organized systems.
- vii. Systems theory is a method of theory construction that centres on building general concepts, postulates, and philosophies.
- viii. General systems theory as a worldview, underlines interrelationships between entities.
- ix. General Systems Theory has Potential for Unifying Science: it proposes that there are unifying principles in every discipline; hence Systems Theory is a means of considering isomorphism between them.
- x. A System at every point in time must be seen as a whole

The development and progress of systems theory has been sustained by public pressures on science seeking and asking for the development of theories capable of interdisciplinary

application. As a result, systems theory presents a conceptual framework for the construction of a holistic methodology for inquiry<sup>311</sup>.

#### **2.4.4. Limitations of the General Systems Theory**

There has been a critique of the general systems theory due to the uncertainties that surround the theory especially, as a framework for analysing every system. First, there have been arguments regarding the fact that Systems Theory is a complex framework; however it is not identical to recent theories of complexity<sup>312</sup>. In response to these critics, proponents and supporters of systems theory have subsequently argued and demonstrated that the concept of a system is a complex basic concept of scientific thinking which means that it is defined in terms of several fundamental simple concepts brought together in its explanation. Von Bertalanffy's definition of a system takes into account, theoretical foundations extracted from at least five prominent conceptual constellations and disciplines.

There is also the question of the relevance of systems theory to other disciplines such as health and social work. Questions such as what does the theory focus on? How does it understand entities? What kind of communication does it involve? The response to these questions has been that Systems theory encompasses quite a lot of perspectives and disciplines such as ; cybernetics<sup>313</sup>, general systems theory<sup>314</sup>, structural-functionalist systems theory<sup>315</sup>, functionalist-structural systems theory<sup>316</sup> and social ecological theory<sup>317</sup> which have all influenced different works in various ways and at different times.

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<sup>311</sup> Alexander Laszlo and Stanley Krippner. (1998). Systems Theories: Their Origins, Foundations, and Development. Published in: J.S. Jordan (Ed.), Systems Theories and A Priori Aspects of Perception. Amsterdam: Elsevier# Science, 1998. Ch. 3, pp. 47-74.

<sup>312</sup> Strauss, Daniel F.M. (2002). The scope and limitation of Von Bertalanffy's systems theory. South African Journal of Philosophy;2002, Vol. 21 Issue 3, p163

<sup>313</sup> Wiener, N. (1948).Cybernetics .Cambridge, MA: MIT Press

<sup>314</sup> von Bertalanffy, L. (1968).General system theory New York: George Bratziller.

<sup>315</sup> Parsons, T. (1951). The social system. New York: Free Press.

<sup>316</sup> Luhmann, N. (1970). Functional Method and system theory. Sociological Enlightenment. Essays on the theory of social systems (pp. 31-35). Opladen: Westdt publisher

Also, regarding how the theory views entities, Klassen<sup>318</sup> and Payne<sup>319</sup> argue that entities are seen as organizations and institutions which further represents a way of understanding the processes of creating social order as well as how to incorporate people in the sphere of things in each community.

Thus, according to Klassen and Payne, systems theory irrespective of how it is presented or its disciplinary background/ focus , accentuates functional parts of that discipline: examples are; the organizations, aims, roles, and directions of how to implement services<sup>320</sup>. This is similar to Paynes<sup>321</sup> findings in his exploration of the politics of other system theories e.g. ecological in social work during the 80s and 90s. In the UK, systems theory may possibly ‘offer a way to understand the complexity of a new organization’s very broad role’<sup>322</sup>

A different set of critics<sup>323</sup> also focused on the application of systems theory, arguing that its universal nature and vague outlook makes empirical operationalization and evaluation rather difficult. They also critiqued it for its poor descriptive ability for the reason that, while it provides conceptualization, it is challenging to evidently ‘identify and measure’<sup>324</sup> concepts.

There is also a question of the subtle postulation that all parts of a system have equal power. The feminist Critique has proposed rather ironically that systems theory is not systemic enough given the fact that Interdisciplinary scholarship has proven that all ethos apply gender

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<sup>317</sup> Germain, C. (1978). General-systems theory and ego psychology: An ecological perspective. *Social Service Review*, 52(4), 534–550

<sup>318</sup> Klassen, M. (2004). *Was leisten Systemtheorien in der Sozialen Arbeit?* Bern: Haupt verlag: What do system theories in social work? Bern: main publisher

<sup>319</sup> Payne, M. (2002). The politics of systems theory within social work. *Journal of Social Work*, 2, 269–290

<sup>320</sup> Ibid.

<sup>321</sup> opcit

<sup>322</sup> ibid (Payne, 2002, p. 277)

<sup>323</sup> Whitchurch, G. G., & Constantine, L. L. (1993). Systems theory. In P. G. Boss, W. J. Doherty, R. LaRossa, W. R. Schumm, & S. K. Steinmetz (Eds.), *Sourcebook of family theories and methods: A contextual approach* (pp. 325-352). New York: Plenum Press.

<sup>324</sup> ibid

and generation as important categories of organization, but then systems theory discounts gender concerns.

All the same, researchers agree that despite the fact that the issues raised by critics are serious; still, system theory makes holistic and integrated views and helps in understanding how a disruption in one part of an organization or entity affects other parts of the system and how the whole organization is being affected. This view is based on the fact that even though System theory has been considered as being nonrepresentational, therefore not applicable to practical problems, since it does not identify the nature of interface and interdependence between an entity and its environment, yet, it does not change the fact that any action in one part or dimension of ATM has a consequence on the whole system (ATM framework) in Nigeria. Likewise, if people are unable to access essential medicines due to supply side constraints, it affects health outcomes and negates the efforts of the medical personnel and other departments. If one improves essential medicines access, you potentially boost the health of the people, satisfy demands and health outcomes.

## **2.5. Implications for the ATM structure in the Nigerian Healthcare system**

Health care and the Access to Essential Medicines structure share some features that makes it possible for them to function as systems( based on Ludwigs definition that a system can be any kind or level of entity). The projection of this concept could help healthcare stakeholders, to figure out complex organizational structures in obvious disregard of the previous method of assessing healthcare issues in isolation. While people are struggling to have access to quality and affordable essential medicines, the boomerang effect is that the health care system face difficulties in delivering quality care. It does not matter whether there are healthcare personnel, if people are unable to access prescriptions in a timely manner, the healthcare system would have failed in its primary objective and responsibility to the people. However,



systems theory provides a platform identifying problems in the healthcare system and consequently improving them.

A review of scholarly literatures, have indicated that medicine therapies are unaffordable to those who need it and a change is needed within the ATM structure in Nigeria and other developing countries<sup>325</sup>. The dynamics of insufficient access to essential medicines varies by country and region and as such necessitates that ATM has to be analysed in a holistic manner in order to factor in all inequities and disparities and subsequently arrive at sustainable solutions / interventions. On a bigger scale, applying the systems approach to the Nigerian context potentially could help in deciphering the complications and complex nature of the Nigerian health system. And, when the complexities surrounding the system has been figured out, relevant interventions could be designed and applied in a right and timely manner. The systems approach provides a premise for a successful and effective operation of the ATM system in Nigeria, given the fact that its ability to open potent pathways to detecting and resolving every system challenges (in this case health), makes it a vital element for any systems strengthening effort. When the fundamental characteristics and relationships of the various ATM dimensions in Nigeria are revealed through the application of Systems approach, it would go a long way in helping the ministry of health, the pharmaceutical industry and other stakeholders come up with a targeted and all-inclusive strategy to plan, quantify and understand the forces at work.

In conclusion, the literature review in this chapter provides several justifications for this study. As can be seen from the review, the research area is very comprehensive and various articles have been written and studies undertaken at variable times all the way through the last few years. There does however, appear to be very little research on ATM in Nigeria or

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<sup>325</sup> October 2014. Access to medicines is a global struggle. Online journal. Available at : <http://www.pharmaceutical-journal.com/opinion/editorial/access-to-medicines-is-a-global-struggle/20066682.article>

such that links equitable ATM to the performance of the Nigerian health system (as a determinant) providing justification for this study. The next chapter assesses research and processes available along with the research approach and methodologies undertaken to meet the research aim and answer the principal question "to what extent are Nigerians able to access quality and affordable essential medicines?"



## CHAPTER THREE: ESSENTIAL MEDICINES IN NIGERIA:

### Introduction

This chapter analyses the Nigerian health care system from a historical perspective by discussing the major types of health systems in the country and giving brief analysis of their components. In addition, the chapter further examines the status quo regarding access to medicines in Nigeria and revise previous policy recommendations for more affordable medicines. It discusses and reviews medicine policies by analysing the distribution framework and procurement procedures put in place by the government as well as the contents of the Essential medicines list. Finally, there would be discussions centred on the availability of medicines on the EM list and how this links with or poses a challenge to ATM in Nigeria.

### 3.1. The Nigerian Health System: historical development

Health systems vary across countries and have been understood and defined in several ways. According to Mosby's medical Dictionary, a health care system comprises 'the complete network of agencies, facilities, and all providers of health care in a specified geographic area'<sup>326</sup>. Roemer<sup>327</sup> defines a health system as "the combination of resources, organization, financing and management that culminate in the delivery of health services to the population.". The World Health Organization<sup>328</sup> emphasised the core objectives of a health system in its definition by adding to Roemer's that "all activities whose primary purpose is to promote, restore, and maintain health are considered part of a health system." The World Health Organization further summed up its definition by describing health systems as "all the

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<sup>326</sup> Mosby's Medical Dictionary, (2009). 8th edition 2009, Elsevier.

<sup>327</sup> Roemer MI. (1991). National Health Systems of the World. Vol I: The Countries. New York, NY: Oxford University Press

<sup>328</sup> opcit

organizations, institutions, and resources that are devoted to producing health actions.”<sup>329</sup> The WHO classification embraces all actors involved in health services provision and financing which includes but not limited to the following ; the public, NGOs (Non-Governmental Organizations) , non-profit, and for-profit private sectors, as well as international and bilateral donors, foundations, and voluntary organizations engaged in financing or implementing health actions and undertakings. According to the WHO, Health systems comprise all ranks and levels such as central, regional, district, community, and household. However, within the Nigerian context, there are basically two healthcare systems in place: traditional and bio medical which is also known as “modern” health care system. And these two operational systems likewise comprise sub organisations, institutions, resources, people and actions (traditional and bio medical) whose primary intentions are to promote, restore and maintain health<sup>330</sup>. This study however, focuses on the bio medical health system which is the leading source of healthcare for majority of Nigerians

The bio medical health care system as a structured plan of health services refers to “the system or program by which health care is made available to the people and financed by the government, private initiatives, or both. On a broader scale, the components of a health care system comprise the following: A. Personal health care services for individuals and families, available at hospitals, clinics, neighbourhood centres, and related agencies, in physicians' offices, and in the clients' own homes; B. the public health services needed to maintain a healthy environment, such as control of water and food supplies, regulation of medicines, and safety regulations intended to protect a given population; C. teaching and research activities

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<sup>329</sup> The world health organisation. (2000). The World Health Report 2000

<sup>330</sup> The SA Health Care System L2 (January 2013) National Certificates (Vocational)

related to the prevention, detection, and treatment of disease; and D. third party (health insurance) coverage of system services<sup>331</sup>.

At present, research<sup>332</sup> suggests that it appears the Bio medical healthcare system in Nigeria seems to lack some of those basic components of a health system given the fact that there is no state-supported social welfare system and there is inadequate access to health care among a large number of the population in spite of reforms by the government. Most of the public health facilities are short-staffed, ill-equipped, and low on medicines, vaccines and treatments. Furthermore, notwithstanding the introduction of the National Health Insurance Scheme- NHIS in 2005, nine years later only about 5.3 million (3.73%) of the population, mostly government employees are covered by the scheme and those without insurance pay out of pocket<sup>333</sup>.

While the Nigerian health system has made significant achievements in contemporary times, there appears to be persistent challenges that call for a complete transformation of the health system and all its apparatus such as institutions, organizations and legislations. These transformations if and when it eventually takes place, would be geared towards a greater emphasis on health for all as a right of the citizens. Before going further, perhaps a look at the evolution of the Nigerian Health system from traditional to modern system would help in understanding how the system has fared so long and how an understanding of its background and past could help in remedying some harmful effects of postcolonial health care policies and decisions.

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<sup>331</sup> Mosbys medical dictionary. Online article . available at : <http://medical-dictionary.thefreedictionary.com/HMO> assessed: 30<sup>th</sup> October , 2014.

<sup>332</sup>Fawibe AE, Onyedum CC, Sogaolu OM, Ajayi A O, Fasae A J. (2012). Drug prescription pattern for asthma among nigerian doctors in general practice: A cross-sectional survey. *Ann Thorac Med* 2012;7:78-83

<sup>333</sup> Nigerian Health Watch: What hope for the National Health Insurance Scheme in 2010. Available from <http://www.nigerianhealthwatch.com/2010/01/what-hope-for-national-health-insurance.html> Accessed on 31st october 2014.

The Nigerian health system did not just emerge as an orthodox or bio medical health system. Rather, its emergence is closely tied to the traditional culture of the various ethnic groups that make up Nigeria.

Before the advent of colonialism in Nigeria, native or traditional healthcare system was the only known and standard healthcare system in the country, while traditional healthcare practitioners were the only accepted healthcare providers. The traditional healthcare system gradually evolved into the present bio medical health care system through series of historical, and socio –political phases. However, one cannot undermine the significance of traditional medicines in the Nigerian healthcare system even in contemporary times due to its role as an alternative / complementary source of healthcare for majority of Nigerians who still patronize them for one reason or the other.

The next section briefly discusses traditional medicines: its definitions, who uses them, why and most of the changes that have occurred within this health system. What is discussed expands the brief discussion earlier in chapter one.

### **3.1.1. Traditional Health System**

During the fifteenth century, before the arrival of voyagers, explorers, the trans- Atlantic slave trade and eventually imperialism, the various ethnic groups occupying the territory now known as Nigeria, had a simple traditional health / healing system. There was no central administration, rather the system involved herbalists, divine healers, soothsayers, birth attendants, spiritualists, bone-setters, and mental health healers<sup>334</sup>. By the fifteenth century, even with the arrival of the European traders, and the introduction of organized health care

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<sup>334</sup> Scott-Emuakpor A. (2010) The evolution of health care systems in Nigeria: Which way forward in the twenty-first century. *Niger Med J* [serial online] 2010 [cited 2014 Oct 24];51:53-65. Available from: <http://www.nigeriamedj.com/text.asp?2010/51/2/53/70997>

services in the Arabian Peninsula, there was still none of that in Nigeria<sup>335</sup> and people had no access to orthodox / bio medical healthcare / medicines but depended on traditional health practitioners and healing process. Traditional medicines occupied and still occupy a significant position within the Nigerian health system.

According to Yusuf, traditional medicines echo the socio-religious structures of ethnic cultures from which it surfaces along with the values, behaviours and practices developed over the years<sup>336</sup>. Bannerman<sup>337</sup> describes traditional medicine as an indefinite word used to identify ancient and culture- bound healthcare practices that were in existence before the application of science to health matters. Whereas the World Health Organization defines, “traditional medicine as the sum total of all knowledge and practices whether explicable or not used in the diagnosis, prevention and elimination of physical, mental imbalance and relying exclusively on practical experience and observation down from generation to generation whether verbally or in writing.....<sup>338</sup> ‘Traditional medicines are diverse health practices, approaches, knowledge and beliefs that incorporate plant, animal and/or mineral based medicines, spiritual therapies, manual techniques and exercises which are applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness’<sup>339</sup>.

The World Health Organization right from 1979<sup>340</sup> had acknowledged traditional medicines / healthcare as a complementary / alternative source of meeting the health needs of people due

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<sup>335</sup> Schram, R. A (1971) History of Nigerian Health Care Services. Ibadan University Press, Ibadan, 1971 Back to cited text no

<sup>336</sup> Yusuf N. (1995). Traditional Medicine and healthcare delivery system in Nigeria. Pp32- 44. Faculty of Business and Social sciences , University of Ilorin.

<sup>337</sup> Bannerman, R. H., (1982). Traditional medicine in modern health care. World Health Forum 3(1), 8-13

<sup>338</sup> WHO Media Centre: Traditional Medicine. Fact sheet N°134 2008 [<http://www.who.int/mediacentre/factsheets/fs134/en/>] , (Accessed June 2014).

<sup>339</sup> World Health Organisation .(2011). Legal Status of Traditional Medicine and Complimentary/alternative Medicine: A Worldwide Review. [who.int/medicinedocs/en/jh2943e/432/html](http://www.who.int/medicinedocs/en/jh2943e/432/html)

<sup>340</sup> World Health Organisation (1979) Alternative Approaches to Meeting Basic Health Needs in Developing Countries. A Joint UNICEF/WHO Study, Geneva. WHO Office.

to prevalent use of traditional medicines and patronage of traditional practitioners by people globally. Consequently, this extensive use of traditional medicines / health care by people all over the world led to a call from the WHO for the ‘formal’<sup>341</sup> integration of Traditional medicines into the health system of most countries with the requisite regulations and policies that would safeguard it.

Universally, people have established distinctive indigenous healing traditions adapted and sharpened by their cultures, environments and belief systems, which had satisfied the health needs of their societies over a period of time<sup>342</sup>. And, various explanations have been given as to why people still resort to and patronize these indigenous traditional health practitioners/ medicines. Adefolaju<sup>343</sup> clarifies that most patrons of traditional health care believe and rely upon the services of the practitioners for the relief of physical illnesses as well as mental and spiritual comfort. To others, they simply cannot do without traditional medicine/ care given the fact that when compared to its orthodox alternative, it appears to be more accessible, cheaper and offers a lot more emotional healings and explanations. Roan<sup>344</sup> further indicated that the success of traditional healthcare / medicines is boosted by the practitioners understanding of the peculiar social, cultural and political circumstances of the people, families and communities.

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<sup>341</sup> Although most people use traditional medicines globally and still patronize traditional health practitioners, a lot of countries have yet to incorporate traditional medicines into their health system, leaving the choice of utilization solely at the discretion of the people.

<sup>342</sup> World Health Organization: National policy on traditional medicine and regulation of herbal medicines- report of a WHO global survey. WHO 2005 [<http://apps.who.int/medicinedocs/pdf/s7916e/s7916e.pdf>], (Accessed Oct 2014).

<sup>343</sup> Toyin Adefolaju. (2011). The Dynamics and Changing Structure of Traditional Healing System in Nigeria. *International Journal of Health Research*, June 2011; 4(2): 99-106. Poracom Academic Publishers. *Int J Health Res*, June 2011; 4(2): 1 01

<sup>344</sup> Roan, S. (1999). *Alternative Medicine*. Encarta Yearbook, November.



The WHO had estimated in year 2000 that at least 80% of the global population rely on traditional medicine for their primary health care needs<sup>345</sup>. In Nigeria however a 2009<sup>346</sup> study on the Prevalence of concurrent use of herbal and synthetic medicines among outpatients in a mission hospital in Nigeria showed that 69.4% of Nigerians used traditional medicines. Another study<sup>347</sup> conducted in 2011 indicated 66.8% were using traditional medicines. Yet again, an additional 2011 comparative analysis<sup>348</sup> of orthodox and traditional medicines suggested that about 41 percent chose traditional medicines as their first choice of medication for curative purposes.

Even though bio medical / orthodox health system may possibly exist side-by-side with the traditional system, traditional medicines have managed to sustain their acceptance and prominence due to historical and cultural reasons<sup>349</sup>. Even though the popularity of traditional medicines / practice may have declined at some point in Nigeria which led to the first protest by traditional practitioners in 1922 against the relegation, as documented by Erinosh<sup>350</sup>, in recent times, traditional medicines have gained popularity and seem to be commercially accessible in general.

Perhaps, it would not be out of place to assume that the present popularity of traditional medicines/ practice in Nigeria may well be grounded in the fact that in 1966, the Nigerian government through the Ministry of Health approved a research by the University of Ibadan into the therapeutic properties of native herbs with the intention of standardizing and

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<sup>345</sup> World Health Organization (2000). General Guidelines for Methodologies on Research and Evaluation of Traditional Medicine pp. 1-80. Geneva, Switzerland.

<sup>346</sup> Adibe MO (2009). Prevalence of concurrent use of herbal and synthetic medicines among outpatients in a mission hospital in Nigeria. *International Journal of Drug Development and Research* 2009, 1:60-66.

<sup>347</sup> Ibrahim A O, Kazeem A O and Mercy Amachree. (2011). Herbal medicine use among urban residents in Lagos, Nigeria. Oreagba et al. *BMC Complementary and Alternative Medicine* 2011, 11:117  
<http://www.biomedcentral.com/1472-6882/11/117>

<sup>348</sup> K.P. Osemene, A.A. Elujoba and M.O. Ilori. (2011). A Comparative Assessment of Herbal and Orthodox Medicines in Nigeria. *Research Journal of Medical Sciences*. Volume 5 Issue 5, 2011. Pp 280-285

<sup>349</sup> *ibid*

<sup>350</sup> Erinosh O A. *Health Sociology for Universities, Colleges and Health Related Institutions*. Ibadan: Abuja: Bulwark Consult; 2006. Reprint

regulating traditional medicines<sup>351</sup>. Sequels to the 1966 authorization, during the 1980s, new policies were put in place to endorse, register and regulate traditional health practice and their practitioners<sup>352</sup>. Prior to the endorsement and registration of traditional practitioners / practice and medicines, Ademuwagan (1969 & 1973)<sup>353</sup> and Sofowora<sup>354</sup> had called for the incorporation of traditional medicines / practice into Nigeria's healthcare delivery system and advocated that herbal medicines be granted same recognition as bio medicines. What's more, the National Council on Health- NCH approved the formation of a National Traditional Healers' Board at the central level with associated representatives of the Federal and State governments which were to be replicated at the Municipal levels.

In 2010, the Nigerian government set up the 'Nigeria Natural Medicine Development Agency – NNMDA; an agency charged with the responsibility of gathering information, developing ideas, preserving knowledge, studying trends in other countries, organizing data, documenting, developing such and using it to promote traditional medicine products and practices in Nigeria and to further fast-track the incorporation of the traditional system into the conventional bio medical health system in line with trends in Asia<sup>355</sup>.

With these developments, and subsequent health care reforms in Nigeria, Traditional Medicines/ practice is ostensibly accepted and acknowledged as an important part of the primary health system<sup>356</sup>. Besides, with the Nigerian Minister of health Professor Onyebuchi

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<sup>351</sup> Ali A., Abdullahi. (2011). Trends and Challenges of Traditional Medicine in Africa. *Afr J Tradit Complement Altern Med.* 2011; 8(5 Suppl): 115–123. Published online Jul 3, 2011. doi: 10.4314/ajtcam.v8i5S.5 PMID: PMC3252714

<sup>352</sup> ibid

<sup>353</sup> Ademuwagan, Z. A. (1969). The relevance of Yoruba medicine men in public health practice in Nigeria. *Public Health Reports* 84: 1085-91.

- Ademuwagan, Z. A., J. A. A. Ayoade, I. Harrison and D. M. Warren (eds.) 1979 *African Therapeutic Systems*. Waltham, Mass.: Crossroads Press. Awaritefe, A. and J. C. Ebie

<sup>354</sup> Sofowara .A., (1981). The state of medicinal plants research in Nigeria. University of Ife press. Nigeria. Pp 1-2

<sup>355</sup> opcit

<sup>356</sup> Federal Ministry Of Health & Ali A., Annual Bulletin. Abuja, Nigeria: Federal Ministry of Health; 2004. 'Healthcare in Nigeria

Chukwu setting up a number of commissions in 2014 to aid the integration of traditional medicine into the bio medical healthcare delivery system, traditional medicines indeed is set to compete with and possibly dominate bio medicine in future<sup>357</sup>. The minister alleged that traditional (herbal) medicine would be introduced as a course of study in Nigerian universities based on his acknowledgment that traditional medicinal plants were effective in the treatment of malaria. He however stated that, as a pre requisite for the acceptance and integration of traditional treatment into conventional malaria medicines, traditional medicines practitioners ought to study science courses such as: Physiology, Anatomy, Pharmacology, Chemistry, among other subjects to enable them give the right diagnosis and prescriptions.

According to Okigbo and Mmeka<sup>358</sup>, the use of traditional medicine in Nigeria has improved intensely over the years primarily, due to its safety, affordability, availability, accessibility acceptability and appropriateness for the management of numerous diseases mostly chronic ones. Even though its efficacy is still in contention, it appears that almost half the population use traditional medicines side by side with bio medication on a regular basis, with the maximum frequency of use in rural areas and Lagos<sup>359</sup>.

Although there is no data on the number of traditional medicines that are generally available in Nigeria, however, Prof. Adebukola Adefule Ositelu in a paper she delivered during the 2014 world traditional medicines day, titled “Collaboration between Traditional and Conventional Medicine Practitioners emphasised that 61% of 877 conventional drugs of

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<sup>357</sup> Chukwuma Muanya. 2014 September 11. “Fresh vista towards developing traditional medicine in Nigeria”. The Guardian Newspaper. Accessed : Monday, 03 November 2014 available at : url : <http://www.ngrguardiannews.com/features/natural-health/178496-fresh-vista-towards-developing-traditional-medicine-in-nigeria>

<sup>358</sup> Okigbo R N, Mmeka E C. (2006). An Appraisal of Phytomedicine in Africa’ KMITL Science and Technology Journal. 2006;6(2):83–94

<sup>359</sup> . Amira OC, Okubadejo NU. (2007) Frequency of Complementary and Alternative Medicine Utilization in Hypertensive Patients Attending an Urban Tertiary Care Centre in Nigeria’ BMC Complementary and Alternative Medicine. 2007;7(30):1–5. [PMC free article] [PubMed]

choice may well be traced to natural medicine<sup>360</sup>. Weintritt<sup>361</sup> also acknowledged and documented that there are no less than 522 medicinal plants/ herbs used in the control and treatment of various illnesses in Nigeria. In addition, one could suggest that traditional medicines account for roughly one tenth of the entire Nigerian therapeutic market.

Most of the people who use traditional medicines in Nigeria have cited various reasons; according to Owumi<sup>362</sup>, the quest to preserve their cultural heritage coupled with poverty, insufficient access to bio medicines, treatments and facilities to treat and manage diseases could have contributed to the prevalent use of traditional Medicines.

Izugbara<sup>363</sup> speculates that traditional medicines in Nigeria are sought after by people due to medical conditions that had defied or were not responsive to bio medications and treatments. In addition, health conditions that lead to stigmatization from the public and those medical conditions believed to have stemmed from mystical causes.

According to the World Health Organisation<sup>364</sup> some of the reasons cited for the increasing demand for traditional medicines in developed countries are: apprehension about the adverse effects of chemicals used in bio medicines, better access to health data, changing values and a reduction in acceptance of paternalism. Correspondingly, rises in reported cases of chronic diseases have also been ascribed to the increasing use of traditional medicines. While bio medical treatments are generally accessible to deal with these illnesses, some patients are

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<sup>360</sup> Chukwuma M., 2014 September 11. "Fresh vista towards developing traditional medicine in Nigeria". The Guardian Newspaper. Accessed : Monday, 03 November 2014 available at : url : <http://www.nguardiannews.com/features/natural-health/178496-fresh-vista-towards-developing-traditional-medicine-in-nigeria>

<sup>361</sup> Weintritt J. 2007. 'The Use of Plants in Traditional Medicine in Nigeria' *Africana Bulletin*. 2007:119–131. Warszawa.

<sup>362</sup> Owumi B E. (2002). 'The Political Economy of Maternal and Child Health in Africa' In: Isiugho-Abanihe UC, Isamah AN, Adesina JO, editors. 2002. *Currents and Perspectives in Sociology*. Ibadan: Malthouse Press Limited; 2002

<sup>363</sup> Izugbara CO, Etukudoh IW, Brown AS (2005). 'Transethnic Itineraries for Ethnomedical Therapies in Nigeria: Igbo Women Seeking Ibibio Cures' *Health and Place*. 2005;11:1–14. [PubMed]

<sup>364</sup> WHO, Ali, A., WHO (2002) *Traditional Medicine Strategy 2002 –2005*. Geneva: World Health Organisation

persuaded that they have not provided satisfactory result, hence, the need for unconventional or alternate measures<sup>365</sup>.

Although some studies may overemphasize the extent to which people use traditional medicines and its significance in providing affordable health care delivery, the efficacy and quality of most traditional medicines especially in Nigeria has not been proven. The quality and efficacy of traditional medicines, prescription methods and rational use has to be adequately analysed in order to ensure that they are safe for consumption. This is given that most critics of traditional medicines have often cited the safety and lack of standard dosage as reasons why it is not safe, therefore should not be incorporated into biomedical system. On the other hand, this perception by the critics might be wrong since drugs once assumed to be safe are regularly withdrawn from the market for causing serious side effects and loss of lives<sup>366</sup>. For instance, in Nigeria, the National Agency for Food and Drug Administration and Control –NAFDAC barred the use of a generic analgesic commonly known as Novalgin because of the severe side effects and deaths that occurred in children who used it. Another case in point is that of the 1950 to 1960 where some pregnant women received doses of thalidomide for morning sickness and ended up having babies with deformities<sup>367</sup>.

Although, traditional medicines/ practices have been criticised and perceived to be rooted in witchcraft<sup>368</sup>, a lot of rural residents who do not have regular access to bio medical facilities / medicines depend on it for their health needs. And, these users have attested to the quality, safety and efficacy of traditional medicines. In 1992, it was estimated that traditional healers

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<sup>365</sup> *ibid*

<sup>366</sup> K.P. Osemene, A.A. Elujoba and M.O. Ilori. (2011)1. A Comparative Assessment of Herbal and Orthodox Medicines in Nigeria. *Research Journal of Medical Sciences* .Volume 5 Issue 5, 2011. Pp 280-285.

<sup>367</sup> *ibid*

<sup>368</sup> . Bello R A., (2006). Integrating the Traditional and Modern Health Care System in Nigeria: A Policy Option for Better Access to Health Care Delivery In: Saliu H, Jimoh A, Arosanyin T, editors. *The National Question and Some Selected Topical Issues on Nigeria*. Ibadan: Vantage Publishers

across the six geo political zones in Nigeria used more than 205 medicinal plants as regular sources of traditional medicines preparation<sup>369</sup>.

Finally, although the utilization rate of traditional facilities / medicines and treatments has increased sporadically across Nigeria, there is limited empirical evidence from tests conducted and clinical trials to assess its safety and efficacy. Therefore, with the constant calls for the integration of traditional practice / products into the bio medical system in Nigeria, there is need to ensure that traditional medicines are well tested to avoid adverse effects on users.

### **3.1.2 Historical Development of Biomedical or Orthodox Health Care system**

This section discusses the historical development of bio medical health system in Nigeria, the main components of the system; Health Professionals, Institutions, Community Agencies, healthcare budgets and funders (mainly governments), the health Industry, Planning/Coordinating agencies and the public.

The emergence and trajectory of bio medical health system in Nigeria has been traced from the pre-colonial times. With the introduction of imperialism, the colonial authorities brought their own doctors with them and provided orthodox health care to colonial superintendents and their families only, leaving the indigenous people without any access to such health care<sup>370</sup>. But then, according to Egwu<sup>371</sup>, the postcolonial era ushered in a period of medical freedom and the beginning of strategic developments in the health system which led to a departure from traditional practices to the introduction and general provision of basic health facilities and services in urban areas.

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<sup>369</sup> FEPA, (1992).

<sup>370</sup> See ; A paper by Godwin N., A. titled “ Biblico-Historical Foundations Of Public Health: An Adventist Perspective”. Presented at the 28th International Faith and Learning Seminar held at Babcock University, Ilishan-Remo, Nigeria. June 17-29, 2001

<sup>371</sup> Egwu, I N., (1996). PHC System in Nigeria: Theory, Practice and Perspectives. Lagos: Elmore Press, pp.18, 19.)

Egwu went on to say that this signified a milestone in the history of health care development in Nigeria since it marked the beginning of the establishment of bio medicare, nevertheless this system was not without its own downsides. For instance, the health system had an outlook of the British system and portrayed the British model of care which was basically patient-oriented, hospital-based, doctor-centred and curative in nature. There was limited number of bio medical health personnel, insufficient coverage and access to care; incompetent and unproductive management of health facilities, coupled with the clear inequity between curative and preventive care. This account clearly suggests that from the onset, the Nigerian bio medical system was introduced in such a way that rural dwellers had limited access to bio medical healthcare facilities because the system was established mainly in cities to cater for them and to protect them (colonial administrators) from contacting communicable diseases<sup>372</sup>.

Another account from Schram<sup>373</sup> states that the first primary bio medical healthcare delivery centers were established between 1880, 1885 and 1886 in Nigeria by the Christian missionaries from the Roman Catholic, Anglican and Baptist missions. Although there were reports that these health care facilities were in competition with each other since they were set up to enable the Christian missions win converts, yet, they were notably well managed and maintained good standards<sup>374</sup>.

As bio medical system expanded gradually, the Colonial administrators determined the services to be rendered and provided the requisite human resources. Overtime, managing the centralised West African healthcare system became more difficult and each region was

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<sup>372</sup> Chuke P. O. Nigeria: (1988). In Saltman, R.B. Ed. The International Handbook of Health Care Systems. Greenwood Press, N.Y, 1988.

<sup>373</sup> Schram, R. (1971). A History of Nigerian Health Care Services. Ibadan University Press, Ibadan.

<sup>374</sup> Ibid.

required to handle and manage its own healthcare system with technical support from the West African Council for Medical Research, which was created on February 1954<sup>375</sup>.

As healthcare systems became regionalised during the 1950s, the Nigerian healthcare further expanded and advanced; with it came some landmark developments such as the creation of what was later known as the pioneer ministry of health in Lagos. Some of the bio medical personnel were either working as civil servants or missionaries and from there, the chief medical officer was appointed as the main facilitator of healthcare policies in Nigeria.

With the formation of what could be considered the first federal/ central health ministry in Lagos, regional (in the east, west and north) health ministries were equally created and thus began the primary and secondary levels of healthcare system in Nigeria<sup>376</sup>. With the formation of these regional health ministries came the issue of funding support and it was agreed that while the federal government would be in charge of the health care budget of the States (regions), the state administrators were permitted to distribute their health budget as they deemed fit<sup>377</sup>.

Schrams report added that by 1960, when Nigeria gained independence from imperial powers, Christian Mission-owned healthcare facilities were by far of better standard and more in number than Government-owned hospitals . This is evident from the fact that the Seventh Day Adventist Hospital in Ilesha and the Wesley Guild Hospital in Ile-Ife turned out to be the core of a tertiary facility (teaching Hospital) in Nigeria<sup>378</sup>.

However, from 1914 to 1918, with the end of World War 1, military hospitals were set up in Nigeria to cater for war veterans who had participated on the allied side and were either

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<sup>375</sup> Ibid

<sup>376</sup> Ibid. see chuke

<sup>377</sup> Bull, Mary., 1954 – 55. Medical Services in Nigeria, 1954-55. Oxford Development Project Report.

<sup>378</sup> Scott-Emuakpor A. (2010) The evolution of health care systems in Nigeria: Which way forward in the twenty-first century. Niger Med J 2010;51:53-65



wounded or deformed. Some of these facilities were later converted to civilian use at the end of the war and over time public healthcare facilities were set up by the government and labelled “primary, secondary and tertiary facilities”<sup>379</sup>.

From the foregoing, the bio medical health care delivery system in Nigeria was set to function with an array of health care providers such as; public, private, Mission, Not for profit, Non-governmental and traditional. In addition, the Nigerian government provides these services to the people through three universal levels of care namely; primary health care; secondary health care (district level hospitals); and tertiary health care (teaching hospitals with specialist doctors used mainly for referrals)<sup>380</sup>.

Nigeria operates three tiers of government; federal, state and local government. And each tier of government is responsible for the provision and administration of a particular level of healthcare. While the federal ministry of health (FMOH) oversees and is responsible for policies and structures, processes and provision of technical support to the general health system at an organisational level, local government councils are in charge of the provision of primary care; the state manage the secondary facilities and also have schools of health technology where semi-skilled health personnel are trained while the federal government is responsible for the tertiary teaching hospitals<sup>381</sup>. Nevertheless, in principle, the three tiers of government are involved in all the major health system functions such as stewardship, funding and provision of services<sup>382</sup>.

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<sup>379</sup> *ibid*

<sup>380</sup> Uzochukwu BSC, Onwujekwe OE, Soludo E, Nkoli E, Uguru NP. (2009). The District Health System in Enugu State, Nigeria: An analysis of policy development and implementation .May 2009.The paper is an output of the Consortium for Research on Equitable Health Systems. The Health Policy Research Group, University of Nigeria Enugu campus, Nigeria.

<sup>381</sup> *ibid*

<sup>382</sup> World health Organization. Nd. [Online ]The Nigerian health system. available at : [www.who.int/pmnch/countries/nigeria-plan-chapter-3.pdf](http://www.who.int/pmnch/countries/nigeria-plan-chapter-3.pdf) accessed November 5th 2014

Nigeria's bio medical health system underwent several development stages after its formal transition from traditional health system to bio medical system. Although the dates are the same, the various accounts differ in terms of the analysis of milestones achieved during each phase of reform / policy development.

According to Asuzu<sup>383</sup> the Nigerian bio medical health system passed through five development / reformative stages, with the first stage characterised by limited framework for the health system due to its unitary nature. He added that the 1950s was an intermediate between the first and second phase. Known as an era of regionalization, it marked a shift from the unitary nature of the health system although no precise records of such a reform exists. Also, the regional governments became independent and managed corresponding health systems with the central / federal government.

Asuzu indicated that the Second National Development Plan of the post-independence period of the 1960s failed to clearly articulate a health system with distinct levels of care and a definition / allotment of accountabilities / duties to the three tiers of government. Moreover, he added that 1970s witnessed a Third National Development Plan that was fairly ambitious with emphasis on the Basic Health Services Scheme. Although it appeared rather elaborate in its attempt at reforms, the third plan was remotely full in infrastructure and auxiliary health human resource development. Again, the third health plan had no clear policy framework, neglected sharing responsibilities among the three tiers of government for financial resources, human resource development, the type of services to be delivered, and the health personnel responsible for the discharge of services. During the 1980s, subsequent reforms and policies were necessitated by the 1979 Alma Ata Declaration, part of which was the National Health

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<sup>383</sup> M.,C., Asuzu. ND. The necessity for a health systems reform in Nigeria. *Journal of Community Medicine & Primary Health Care*. 16 (1) 1-3

Policy of 1988. This policy introduced and was operative on the principles of primary health care till the year 2000<sup>384</sup>.

In his work, Chuke<sup>385</sup> gave a rather detailed historical account of the beginning of what could be considered a general / countrywide healthcare delivery in Nigeria. Termed as 'development plans'<sup>386</sup>, Chuke and Scot<sup>387</sup> categorised these developmental stages into seven distinct healthcare development plans thus:

- i. the First Colonial Development plan: 1945- 1955 (Decade of Development).
- ii. The Second Colonial Development plan :1956- 1962
- iii. The First National Development Plan : 1962- 1968
- iv. The Second National Development Plan: 1970- 1975
- v. The Third National Development Plan: 1975- 1980
- vi. The Fourth National Development Plan: 1981- 1985
- vii. The Five year Strategic Plan: 2004 - 2008<sup>388</sup>.

**i) The First and Second Colonial Development plans :1945- 1955; 1956-1962 ( nearly two decades of Development)**

The first developmental phase (1945 -1955) was for 10 years and introduced by the colonial masters. With the declaration of a healthcare mandate themed “ policy for medical and health services, this development plan was aimed at providing healthcare services across the nation and was characterised by healthcare services expansion. This was due to the fact that the

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<sup>384</sup> *ibid*

<sup>385</sup> *ibid* – see Chuke. The International Handbook of Health Care Systems.1988.

<sup>386</sup> *ibid* – see Scott-Emuakpor A. The evolution of health care systems in Nigeria: Which way forward in the twenty-first century. Niger Med J 2010;51:53-65

<sup>387</sup> *ibid*

<sup>388</sup> *Opcit*- Scot Emuakpor

metropolises and cities had access to healthcare whereas; the rural dwellers had limited access. Hence, the policy was geared towards healthcare expansion into the rural areas. The extension into rural areas continued in the second phase and saw the emergence and development of clinics / dispensaries with twenty to twenty four beds for preventive and curative purposes (especially for maternal and child health); one medical officer who also doubled as a health supervisor and sanitation workers. During this extension, the role of local governments in healthcare provision, support and financing was reinforced since the policy document stated that local government councils were expected to cover some parts of the cost for the development of the rural clinics with funding from the regional government<sup>389</sup>. The policy document was quite comprehensive and clearly outlined expectations and expected outcomes from the rural healthcare expansion. This colonial development policy was effective before and after Nigeria gained her independence in 1960.

**ii) The Third National healthcare Development Plan: 1975- 1980**

In 1975, the Third National Development Plan was introduced based on the fact that after more than twenty years of the introduction of the colonial development plans and other national development plans, there was still much to be achieved within the national healthcare services extension plans in terms of target outcomes and impacts. Part of the explanations given for the low impact of the national health policies in the rural areas was the fact that although educated urban residents were receptive of the new bio medical healthcare system and used it, the rural dwellers perception of this new system was quite negative and they were struggling with the idea of abandoning their cultural / ethnic traditional healing system for something new. Additionally, although sanitary inspectors were introduced during the period of the rural clinics expansion, there was no record of whether this led to improved sanitation or not, and this necessitated a change of policy direction.

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<sup>389</sup> *ibid*

According to General Yakubu Gowon who was Head of the Military Government at the time the third national policy was introduced, the third policy was meant to be "A Monument to Progress" given that there was no remarkable progress in the health sector since the implementation of the past policies. Therefore, the third development plan was directed towards improving the number of existing facilities rather than implementing another health care policy<sup>390</sup>.

### **iii) The Fourth National Healthcare Development Plan 1981- 1985**

The fourth national healthcare development policy was a five year plane which started in 1981 and ended in 1985.

According to Emuakpor<sup>391</sup>, The Fourth National Development policy took cognisance of issues related to preventive health for the very first time. It should be noted that the British model of healthcare services as introduced by the colonial masters was 'curative services' based. Nevertheless, the new policy statement sought the application of the Basic Health Services Scheme -BHSS, which offered the creation of three levels of bio medical health care facilities thus;

The first one was the CHC – known as the Comprehensive Health Centres. It was established to cater for communities with a population of over twenty thousand people. While the second one was known as the PHC- Primary Health Centres, meant to cater for communities with a population of five to twenty thousand people. Whereas, the third facility was known as HC- 'Health clinics and it catered for the healthcare needs of two to five thousand people<sup>392</sup>.

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<sup>390</sup> opcit

<sup>391</sup> ibid

<sup>392</sup> Alakija W. (2000). Essentials of community health, primary health care and health management. Medisuccess Publications, Benin City.

Operationally, each Comprehensive Health Centre was expected to have at the barest minimum, one Primary Health Centre in its catchment area or preferably four; while a Primary Health Centre was expected have at minimum, one Health Clinic in its catchment area and preferably two. These health facilities were to be built and managed by state and local governments with funding from the federal government. According to Emuakpor<sup>393</sup>, this policy where funding was to be shared responsibility between the three tiers of government, was no different from the one published in 1954 by the Eastern Nigerian Government during the 1950s era of regionalization.

By 1983, still within the fourth development plan, there was a transition that ushered in a new military government. With this new change of government came a revision of the fourth national plan with focus on primary healthcare. Besides, even though primary healthcare and its basic principles were clearly articulated in the policy documents, yet again, as corroborated by Asuzu, it was not implemented and needed another reform.

One of the government's first efforts was to revise the Fourth National Development Plan. The health strategy under this revised plan gradually shifted emphasis to primary health care. Although this has always been the ultimate goal of the plan, the political will did not seem to exist for its implementation. The adoption of the WHO target of Health for All by the Year 2000 by the federal government was marked by shifts in emphasis and structural changes in health care administration<sup>394</sup>.

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<sup>393</sup> opcit

<sup>394</sup> ibid

#### **iv) The Five year Strategic Plan: 2004 – 2008**

The Alma Ata declaration<sup>395</sup> of 1978 stated the need for countries to pay full attention to primary healthcare by channelling the world's resources into healthcare rather than spending them on armaments and military conflicts. In line with this 'health for all by the year 2000' declaration, the Nigerian government changed its policy and focused more on organizational reforms in the administration of healthcare within the three tiers of government<sup>396</sup>. Therefore, the five year strategic plan saw structural adjustments towards the implementation of primary healthcare and a definition of roles and responsibilities at all tiers of government to accommodate this paradigm shift (primary healthcare). At the federal level, the Executive board of National Health planning was responsible for developing national health policies as well as coordinating and implementing such plans. At the state level, health advisory councils were created to advise and support the Commissioner of Health in the execution of his duties. At the local government level, the State Ministry of Local Government alongside the State Ministry of Health created Local Government Health Committees within their spheres of influence (local jurisdiction) to help in policy formulation for sustainable healthcare delivery to the people. At the community level, a number of communities had set up people-centred community primary health care services.

Ten years down the line, despite the 2000 to 2004 strategic health plans, administrative policies, planning committees and health reforms, the Nigerian health system appears to be besieged by a lot of challenges which impedes its ability to provide healthcare to a growing population of over 160 million citizens. Writing on the need for a health system reform, Asuzu restated Baba and Babatunji's<sup>397</sup> opinion on the state of Nigeria's healthcare when he

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<sup>395</sup> Primary Health Care: Report of the International Conference on Primary Health Care . Alma -Ata, USSR, 6-12 September 1978. Geneva. World Health Organisation 1978 p. 6.

<sup>396</sup> opcit

<sup>397</sup> Marycelin Baba., Babatunji O., (2012).Nigeria's Public Health: Gains and Challenges. Pubblicata su Equilibri (<http://www.equilibri.net/nuovo>) Equilibri

mentioned that the reason why Nigeria keeps needing health system reforms is because the previous systems were not producing the best / ideal outcomes and with Nigeria's appalling ranking of 187th out of 191 countries in the 2000<sup>398</sup> world health systems performance, one could only conclude that the health system is under performing.

In 2010, Nigeria ranked 197th out of 200 countries in the WHO health systems performance. Its low performance was attributed to the fact that the country allocates less than 5 % of its yearly budget to the health sector as opposed to recommended 15% by the WHO. Moreover, the WHO added that Nigeria's low ranking in health system performance was as a result of its fragile National Health System, given the fact that inspite of the WHO recommending an average healthcare spending of \$34,00 per capita income, Nigeria merely spends about \$944 per capita<sup>399</sup>. Nigeria's healthcare funding will be discussed in details in the following paragraphs.

According to Baba and Babatunji, notwithstanding the joint efforts between Nigeria and other private / international agencies towards the provision of sustainable healthcare services, the lack of political will to tackle Nigeria's health system challenges has rendered the health care system weak<sup>400</sup>. They added that some of the challenges faced by the Nigerian health system range from ; "emerging and re-emerging health complications such as HIV/AIDS, insufficient salaries/remuneration for health personnel, low quality of care, unequal healthcare services, brain drain, and unfounded employment of health workers, low budget allocation and lack of strategic plan and preparedness for epidemics/pandemics"<sup>401</sup>

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<sup>398</sup> See year 200 world health report.

<sup>399</sup> See more at: <http://www.vanguardngr.com/2010/10/nigerias-health-system-ranks-197-of-whos-200-nations-nhis/#sthash.LS7fdDBH.dpuf>

<sup>400</sup> opcit

<sup>401</sup> ibid



According to Emuakpor<sup>402</sup>, the strategic goals of the previous years have not been achieved. In his words, “The capacities of the facilities that emerged from previous efforts have been stretched and infrastructure damaged beyond repair. Primary health care services now exist only in name in Nigeria. Average Nigerians now resort to herbalists and traditional medicines for care on grounds of lack of geographical access and affordability while the rich seek medical care outside the shores of the country, in places like ; India, Singapore, United Kingdom, South Africa and Ghana.

From 1945 when the first colonial healthcare development plan was formulated to the Alma ata 1978 declaration and the early part of year 2000 when Nigeria pledged its commitment to primary healthcare, the Nigerian healthcare system has constantly struggled to provide quality and equitable health services to its citizens. From low healthcare performance rankings, to crumbling infrastructures, inability to offer all basic services, poor sanitary conditions, shortage of required bio medical personnel as well as medicines, vaccines, treatments and other essentials needed to efficiently offer healthcare services to the public, the Nigerian health system continues to exhibit incompetence and neglect . However, the question remains, whose fault is it? Judging from the fact that the policies are already on ground as well as the requisite apparatus and structures, what is the real problem with the Nigerian health system and at what level of government can one say the challenge lies?

Subsequent paragraphs will discuss and analyse the Nigerian health system based on the key components of a well-functioning bio medical health system as outlined by the WHO<sup>403</sup>.

### **3.1.3. Nigeria and the Key Components of a Well-Functioning Health System**

As earlier mentioned in chapter one, well-functioning health care system must have the following six components;

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<sup>402</sup> opcit

<sup>403</sup> World Health Organization. (2010). Key components of a well- functioning health system.

- a. Leadership and governance
- b. Health information systems
- c. essential medical products and technologies
- d. health financing
- e. human resources
- f. service delivery

Consequently, the present state of the Nigerian health system will be discussed based on these factors.

#### **a) Leadership and Governance**

According to the WHO, A well-functioning health system “responds in a balanced way to a population’s needs and expectations by: improving the health status of individuals, families and communities; defending the population against what threatens its health; protecting people against the financial consequences of ill-health; providing equitable access to people-centred care; making it possible for people to participate in decisions affecting their health and health system”<sup>404</sup>. And, without grounded and sustainable policies / leadership, health systems do not instinctively provide balanced responses to these challenges, nor do they make the most competent use of their resources<sup>405</sup>. Health systems respond to challenges based on their capacities and what you have on ground / built into the system prior to that challenge.

Leadership and governance in the health system is not just about controlling the activities of the other tiers of government by the federal ministry of health, rather, it involves looking

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<sup>404</sup> ibid

<sup>405</sup> World Health Organization (WHO) “National Health Workforce, Leadership and Stewardship Capacity.” 2009. Retrieved December 7, 2011. < <http://www.afro.who.int/en/clusters-a-programmes/hss/human-resources-for-health/programme-components/national-health-workforce-leadership-and-stewardship-capacity.html>>.

beyond supervising and managing the whole health system in order to protect public interest<sup>406</sup> and concentrating on “obligations and tasks for the strategic administration of the health system, as well as the inter sectorial, socio-political setting within which the health system operates”<sup>407</sup>. In addition, it involves making sure that health authorities take charge of directing the whole health sector (not just public sector health services); and for managing future challenges such as unanticipated events and disaster / disease outbreaks as well as with existing difficulties<sup>408</sup>.

The preceding statement from the WHO regarding health sector leadership or stewardship and preparedness against epidemics raises the issue of how Nigeria responds to epidemics and other disasters within the health sector. According to Uneke et al, poor and sometimes incompetent leadership and governance in the health sector has been cited as one of the factors responsible for the failure / low performance of most health systems in LMICs such as Nigeria.

The Nigerian ministry of health confirmed that the poor performance of Nigeria’s health system could be blamed on the high level of incompetence and poor leadership by the federal government with regards to issues affecting the health sector<sup>409</sup>. Having established leadership / governance deficit as the main cause of the appalling performance of the Nigerian health system, the Ministry further acknowledged there were key constraints to health sector leadership / governance in Nigeria and noted eight of them thus;

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<sup>406</sup> WHO., Chigozie U, (2007) . World Health Organization (WHO) 2007. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes. WHO's Framework for Action Geneva: Uneke

<sup>407</sup> Chigozie J. U, Abel E. E, Chinwendu D. N, Patrick G. O, and Friday O. (2012). Enhancing Leadership and Governance Competencies to Strengthen Health Systems in Nigeria: Assessment of Organizational Human Resources Development. *Healthc Policy*. Feb 2012; 7(3): 73–84. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3298023/> accessed on : 11th November 2014

<sup>408</sup> World Health Organization .2000. The World Health Report 2000: Health Systems – Improving Performance. Geneva: Chigozie Uneke

<sup>409</sup> Federal Ministry of Health (FMOH) 2004. Health Sector Reform Programme: Strategic Thrusts with a Logical Framework and a Plan of Action, 2004–2007. Abuja, Nigeria: accessed November , 2014. [http://www.herfon.org/docs/Nigeria\\_HealthSectorReformProgramme\\_2004\\_2007.pdf](http://www.herfon.org/docs/Nigeria_HealthSectorReformProgramme_2004_2007.pdf)

- (1) Lack of clearly defined roles and tasks of key actors;
- (2) poor leadership / managerial tools in form of applicable policies, effective strategies and development agenda for the health system
- (3) Inability to develop intersectoral cooperation with other arms of government, NGOs, the public, and other health sector stakeholders in general
- (4) poor propagation and application of health policy implementation
- (5) lack of constitutional and legal support for key policy drives
- (6) lack of inclusion of / definition of roles for private sector stakeholders in policy articulation
- (7) low budgeting and conditions of policy management practices
- (8) Insufficient funding of the health sector (Federal Ministry of Health, 2004).

Perhaps one could suggest that the challenge with the leadership / governance of the Nigerian health system is that as evident in the formative years of the system, there is lack of a clear definition of strategies / directions for the implementation of national health policies. Most times, the ministries fail to clearly define the processes involved in executing national health policies, beyond the policy documents. According to the WHO, the processes / strategies are supposed to be transparent, people centred and inclusive of all stakeholders within the health sector. Beyond articulating a health policy, there has to be considerations, provisions and carefully thought out ways of transforming these course of actions into useful resources as well as taking cognisance of its effects on funding, human resources, medicines/ treatments, technology, infrastructure and service delivery<sup>410</sup>.

In its present state, the Nigerian health system needs urgent development of leadership/ governance capabilities as this will facilitate active policy interchange with other sectors, operative regulation through a combination of strategies and incentives, backed up by legal

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<sup>410</sup> World Health Organization. (2010). Components of a health system.

actions and enforcement machineries that will ultimately lead to better health for all. And, according to Uneke et al<sup>411</sup>, there is an improved need and willingness among policy makers and key stakeholders within the health sector to develop capacities and a deeper knowledge of the approaches that can boost the transparency, governance and competence of the Nigerian health system.

#### **b) Health information systems**

Health information systems has been defined as a tool for gathering, processing, analysis and transmission of information required for the effective organization and operation of health services as well as for research & training<sup>412</sup>. According to the WHO<sup>413</sup>, good governance in the health sector can only be guaranteed if there is decent information on health challenges, on the wider environment in which the health system functions, and on the performance of the health system. This precisely takes account of timely data on: improvement in meeting health challenges and social objectives such as equities, household surveys, civil registration systems and epidemiological surveillance; Health funding, together with national health accounts and an analysis of financial issues and of financial and other barriers to health services for the poor and vulnerable.

According to Campbell et al, Health information system-HIS (as it is popularly called) is an instrument used for daily (health related) actions within the health sector, policy and decision

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<sup>411</sup> Uneke C.J., Ezeoha A., Ndukwe C.D., Oyibo P.G., Onwe F. (2010). "Development of Health Policy and Systems Research in Nigeria: Lessons for Developing Countries' Evidence-Based Health Policy Making Process and Practice." *Healthcare Policy* 6(1): 48–65 [PMC free article] [PubMed]

<sup>412</sup> Abubakar, A., A.,(ND) Health Management Information system in Nigeria

<sup>413</sup> opcit

making<sup>414</sup>. Operational and efficient planning, monitoring & evaluation of health services require intelligence which largely depends on reliable data.

In Nigeria, the National Health management Information Systems – NHMIS became operative from 1960 by providing statistical data for the Federal ministry of health. These data supplied by the NHMIS were often published quarterly / yearly and covered areas such as ; human resources for health, mortality & morbidity, birth & deaths registrations and data on daily clinical activities.

In 1988 the civil service was restructured and this led to the creation of the DPRS- Department of Planning, Research & Statistics. This development brought about the creation of the first NHS -National Health Policy which further resulted in the formation of national health information systems at state and local government levels. By 1999, the newly established health information systems were faced with issues of inaccurate and unreliable data collection, incoherent and ambiguous formatting of data collection tools amongst other problems. In 2004, a change in the policy direction of Nigeria's health system prompted by the adoption of the United Nations' Millennium Development Goals revealed the flaws in the NHMIS and this led to its review. From 2004, the NHMIS was positioned to collect data reflective of MDGs indicators. This new positioning called for apportioning of financial obligations to the three tiers of government towards the NHMIS funding, building the capacities of NHMIS officers , thorough evaluation of health indicators / data system, together with a slight modification of the NHMIS data collection forms, inventories and guidebooks<sup>415</sup>.

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<sup>414</sup> P., C Campbell, E., O.,A Ekunwe. (1999). Managing Health Information System. Nigerian Quarterly Journal of Hospital Medicine Vol. 9, No. 2 (June 1999) pp. 127-130. available at:

<http://www.ajol.info/index.php/nqjhm/article/view/12360> accessed. 12th November, 2014

<sup>415</sup> ibid

With the revision of the NHMIS and subsequent duplication at all tiers of government, it was assumed that the NHMIS would be an effective system that would aid in the timely collection and management of health data for effective policy making. However, the present state of the NHMIS appears to be a far cry from its original objectives which were; Provision of information, assessment of the health status of the population, identification of major health problems, setting priorities at the three tiers of government; Local Government, state and national levels, monitoring the progress towards stated goals & targets of health services, provision of general information for decision making at all levels of government, etc<sup>416</sup>.

Ten years after its review, the NHMIS is presently faced with several challenges that have made it difficult to operate efficiently, fulfil its objectives or achieve its stated goals within the health system. Some of the problems facing the NHMIS today are issues related to financing, insufficient human resources, inadequate work materials, poor management of data flow, poor coordination between the three tiers of government, Lack of feedback to peripheral levels from the federal agency, Complex data collection tools and an enormous build-up of unprocessed data<sup>417</sup>.

In the face of these challenges and coupled with the fact that data from the agency on HRH and utilization rate of essential medicines were not readily available on request during this study, it would not be out of place to suggest that the NHMIS in its present state appears not to have reliable and timely data on trends and needs for HRH – Human Resources for health; consumption of and access to essential medicines, treatments and vaccines; suitability and cost of technology; geographical distribution and competence of infrastructures and access to health services and on the quality of services rendered as required by the WHO<sup>418</sup>. The

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<sup>416</sup> *ibid*

<sup>417</sup> *opcit*

<sup>418</sup> See WHO. May 2010. Components of a well functioning health system.

NHMIS has not built its capacity in a manner that permits easy access to and efficient dissemination of information to relevant stakeholders and members of the public.

### c) **Health financing**

Health financing could be a vital policy mechanism for health advancement and reduction of health inequities if its principal goal is to ease universal coverage by getting rid of financial obstacles / constraints to access as well as preventing poverty and catastrophic expenses<sup>419</sup>. In order to facilitate their health outcomes, the WHO recommends that countries set up a transparent system to raise appropriate funds for health equitably. Also, there has to be a system to group or collate funds across population groups in order to share financial risks. In addition, the national funding governance system must be backed up with relevant laws/ regulation, financial audit and public expenditure reviews along with a clear operational rule to guarantee proficient use of resources.

In Nigeria, the Federal Ministry of Health is responsible for planning and managing every aspect of health services and this includes financing. However, some responsibilities are delegated to state governments via their health Ministries to enable the implementation of national programs and the management of health establishments while the local governments see to healthcare delivery at the grass root level<sup>420</sup>. According to Emuakpor, Over 90% of health services financing comes directly or indirectly from the federal government<sup>421</sup>, with guaranteed liberty for discretionary spending by the state and local governments.

On the other hand, Payment for healthcare in Nigeria comes from a number of sources. Twenty four percent comes from public taxes, six percent from aid partners, between sixty

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<sup>419</sup> ibid  
<sup>420</sup> opcit  
<sup>421</sup> ibid



three to sixty seven percent<sup>422</sup> from private sector/ out of pocket spending by individuals and seven percent comes directly from private risk pooling<sup>423</sup>. Twenty percent of health revenue is generated from user fees charged at public health facilities given the fact that the government authorized charging of user fees, with the following exceptions: HIV patients, maternal and paediatric care (for children up to five years) and leprosy<sup>424</sup>.

Twenty four percent of health care services funding which reportedly comes from public taxes are sourced from the three tiers of government; federal, state, and local government budgetary allocations<sup>425</sup>. Although the rest of the finances are sourced from donor loans, grants, private sector contributions / individual payments, the specific value of the private sector contribution to healthcare financing in Nigeria is still unclear<sup>426</sup>. Perhaps, an analysis of Nigeria's budgetary allocation to the health sector over the years would give an added perspective on health financing in Nigeria.

Scholars opined that just as the development plans did not yield noteworthy changes in the health sector in the past years, in the same vein, the healthcare budgetary allocation did not show much significant progress post-independence. Between 1975 to 1980, out of a projected expenses of N43, 000 million, the federal government budgeted a total sum of N689 million naira for healthcare which was about 1.6 percent of the estimated health budget. Although there are no records of the definite amount that was spent, nevertheless, with a population of

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<sup>422</sup> Soyibo, A., O.Olaniyan and A. O. Lawanson (2009), National Health Accounts Of Nigeria, 2003-2005: Incorporating

Sub-National Health Accounts of State, Health Policy Training and Research Programme, Department of Economics, University of Ibadan Nigeria.

<sup>423</sup> Bakare, A.S and Olubokun, S. (2011).Health Care Expenditure and Economic Growth in Nigeria: An Empirical Study? Journal of Emerging Trends in Economics and Management.

<sup>424</sup> Uneke CJ, Ogbonna A, Ezeoha A, Oyibo PG, Onwe F, Ndukwe CD. (2009) User fees in health services in Nigeria: The health policy implications.Internet J Health 2009;8:2.

<sup>425</sup> James CD, Hanson K, McPake B, Balabanova D, Gwatkin D, Hopwood I, (2006) To retain or remove user fees?: Reflections on the current debate in low- and middle-income countries. Appl Health Econ Health Policy 2006;5:137-53.

<sup>426</sup> ibid

over 75 million people, per capita expenses on health for that period was pegged at USD 18.40<sup>427</sup>

From 1981 to 1985 the health allocation was N3066.6 million out of a projected N69, 686.3 Million, which was ultimately 4.4 percent. Assuming that the sum of 3066.6 Million Naira was spent on health during that period, it would amount to USD 5519.88 Million (based on the exchange rate of one Naira to USD1.80 in 1981). With a growing population of nearly 90 Million people, per capita health expenditure was USD 61.3.

Beginning from the 1980s, Nigeria's economy started dwindling due to the continuous change of governments and this led to a reduction in budgetary allocations. By 1985, even though the Babangida military administration had cited the deteriorating state of health sector as part of the reasons for its takeover, the health budget for that year did not really reflect that. On the contrary, the budgetary allocation of 2.7 percent for health was perhaps the lowest post independent allocation to health. Although no explanation was given for the reduction in the health budget, it appears that the introduction of the Structural adjustment program may have contributed to the reduction of the health budget given that it underscored reduced spending on social and health services.

With the devaluation of the naira in 1985, the Nigerian economy continued to decline and this affected budgetary allocations to state and local governments. In 1989, the federal health budget was a lot less than it was in the early 1980s. Although the years of the oil boom witnessed marginal health allocations, the early 1990s saw a significant reduction in health budgets. Though, between 1996 to year 2000, the budget improved slightly but available data

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<sup>427</sup> opcit

suggests that recurrent was higher and basically spent on bio medical health personnel and overhead costs<sup>428</sup>.

Another analysis from the central bank of Nigeria<sup>429</sup> reported that federal government expenditure on health rose from the sum of USD141 million in 1998 to USD228 million in 2003. Whereas, health expenditure as a fraction of the total federal budget reduced between 1998 and 2000, but improved in the following years, getting to 3.2 per cent in 2003. In the same year, Per capita health spending was projected to be USD39.76, increasing to USD44.67 in 2004 and subsequently USD54.61 in 2005<sup>430</sup>.

According to the World Bank<sup>431</sup>, the bulk of the federal governments' health expenses go to teaching / tertiary hospitals and federal medical centres. State expenses on health as at 2000, was valued around 6.3% of total expenditure, and projected for 2003 at about US\$420 million or US\$3.50 per capita. Similar to federal expenditure, state health costs often focuses on secondary health facilities and probably on personnel. Available data on 2003 health spending showed that it was equivalent to USD300 million or USD2.45 per capita. As for the local governments, their health expenses is often spent on personnel<sup>432</sup>

In 2004, the budget allocation for health by the federal government was a sum of 26.4 billion naira out of a general budget of 99.8 billion. Out of that general budget, the defence ministry was allotted 10.6 billion naira, the first time ministry of health was getting an allocation slightly higher than that of defence. Despite that the health ministry got almost twenty six percent of the total budgets which seemed quite robust and substantial, it did not translate to

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<sup>428</sup> Joint Learning Network. Nigeria : a background information on national health financing. Available from : <http://www.equitablehealthfinancing.org/countries/nigeria> accessed November 17<sup>th</sup>, 2014.

<sup>429</sup> CBN (2005) "Annual Reports and Statement of Accounts". CBN Reports, 2000, 2001, 2002, 2003 as quoted in World Bank Country Report for Nigeria, 2005

<sup>430</sup> ibid

<sup>431</sup> World Bank/DMO, 2006 "Country Status Report for Nigeria, Nigeria Debt Management Office report as quoted by World Bank".

<sup>432</sup> ibid

better health outcomes given that the budget merged capital spending with recurrent. If the bulk of the budget went into overhead costs and personnel, how much would be left to be spent on infrastructures and pharmaceuticals? Besides, there was no delineation of recurrent and capital expenditures, thus, no evidence of how much was actually released or the exact amount that was spent, and on what? During this time, Nigeria had a population of about 130 million and per capita expenses was USD 1.42<sup>433</sup>.

The health expenditure pattern in Nigeria to a very large extent indicates an unstable trend. In 1997 it was 4.6 percent; by 2005 it rose to 6.6 per cent, and then reduced to 5.8 in 2009. The definite aggregate expenditure for the years 1997, 2001, 2005 and 2009 stood at approximately 134,522, 256,283, 972,921 and 1,596,573 naira, respectively. These figures are reflective of poor commitment of the nation to improved health provision and delivery. Based on available data, the sum total of expenditure on health indicates that private spending makes up a higher percentage- (twice) of what the government spends yearly. For instance, between 1997 and 1999, Government expenditure on health was 23.5 per cent and 36.3 per cent of the total health spending. Yet, for the same period, private expenses constituted 76.5% and 63.7% of the whole health spending. Again, Reports have it that out of pocket payment for health services by individuals amounted to 68 per cent of total health expenditure in 2005. It should also be noted that rises in annual per capita expenses correlate with personal out-of-pocket spending on health. Individuals and households still remain the main source of health funding in Nigeria<sup>434</sup>

In 2007 per capita expenditure on health was \$131 and the health spending as a fraction of the GDP was 1.4 per cent. Prior to that time, between 1996 when the total spending on health as a fraction of the GDP was 4.3 per cent to 2005 when it went back to the same percentage,

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<sup>433</sup> Opcit- Emuakpor

<sup>434</sup> Olanrewaju O., Chukwuedo S. O, Frances N O. (2013) Equity in healthcare expenditure in Nigeria. International Journal of Finance & Banking Studies Vol 2, No 3, 2013 ISSN: 2147-4486

the public health expenditure has fluctuated between 4.3 per cent and 5.5 per cent, without any justification for the increase and sudden decline in health spending<sup>435</sup>.

Perhaps, the situation with the Nigerian health sector might not be limited to being grossly underfunded because during the years when the health sector got more funding, it did not ultimately translate to good health outcomes. Perhaps, it may also be because curative medicine does not necessarily translate to good health directly or so much.

In a study conducted by Bhargava et al<sup>436</sup>, they suggested that good output was positively correlated to overall investment in human and physical capital, political and international conditions. In addition, another cross country survey conducted in 1996<sup>437</sup> indicated that huge expenditures on communication, health and transportation have progressive effects, while expenditures on defence and education did not have same level of impact on output<sup>438</sup>. Government health spending in Nigeria has been insufficient (between 1 to 5 per cent<sup>439</sup>) based on the WHO standard of 15 percent of the GDP for African countries<sup>440</sup> and has not really impacted positively on health outcomes in the country.

In 2012, the total health spending as a proportion of Nigeria's GDP was 5.3 percent<sup>441</sup>. By 2013, it stood at 5.6 percent at a total sum of USD1.79 billion<sup>442</sup> and in 2014, the budgetary

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<sup>435</sup> Echendu D. Adinma, & Brian-D J. I. Adinma . (2010) Community Based Healthcare Financing: An Untapped Option to a more Effective Healthcare Funding in Nigeria. Online Journal. Niger Med J, Vol. 51, No. 3, July–Sept., 2010.

<sup>436</sup> Bhargava A, Jamison D, Lau L, Murray C (2001). Modelling the Effect of Health on Economic Growth. *J. Health Econ.* 20(3):423-440

<sup>437</sup> Deverajan S, Swaroop V, Zou H (1996). The Composition of Public Expenditure and Economic Growth. *J. Monetary Econ.* 37(3):313-344.

<sup>438</sup> Mathias A E, Dickson V J and Bisong J O. (2013). Health care expenditure, health status and national productivity in Nigeria (1999-2012). *Journal of Economics and International Finance* Vol. 5(7), pp. 258-272, October, 2013 DOI: 10.5897/JEIF2013.0523. retrieved from <http://www.academicjournals.org/JEIF>

<sup>439</sup> See Central Bank of Nigeria (CBN). Annual Reports and Statement of Accounts. World Bank Country Report for Nigeria, 2005.

- World Bank. African Development Indicators. Washington, DC: World Bank; 2000.

<sup>440</sup> World Health Organization, Africa Public Health Alliance & Campaign [internet]. 2010. [cited 2014 November 19]. Available from:

[http://www.who.int/workforcealliance/members\\_partners/member\\_list/aphra/en/index.html](http://www.who.int/workforcealliance/members_partners/member_list/aphra/en/index.html).

<sup>441</sup> *ibid*

allocation to health in Nigeria once again diminished to USD1.7Billion, about (6) six per cent of the total budget and fourth to defence , finance, and education. Out of the total budget, 82 percent was allotted to recurrent expenses while the rest was for Capital<sup>443</sup>.

While the budgetary allocation to health was increased in 2013, it shrank in 2014 and this trend of fiscal indiscretion in the health sector has affected the health status of Nigerians especially with new disease outbreaks. Another look at the proportion of total yearly spending on health by the government shows the trend from as low as 3.6% in 1996, it increased to 5.0% in 1997; then diminished to a miserable 2.7% in 2000 and rose slightly to 5.6% by 2013, then reduced by 2014<sup>444</sup>. The unevenness and indiscretion in allocating financial resources to the health sector in Nigeria signifies poor planning in the health system and lack of health service forecasts which ignores and does not reflect awareness of the rising cost of healthcare among declining services per capita<sup>445</sup>.

A further analysis of the per capita expenses on healthcare in Nigeria from the World Bank's microeconomic perspective indicates that per capita spending on healthcare in Nigeria sums up to USD80<sup>446</sup>. Despite the minimal rises by USD13 from year 2010 to 2013, still, when compared to South Africa, Nigeria's per capita spending on health stood at USD 74 while South Africa was USD497. With only 25 per cent of all health spending coming from public funds, Nigeria continues to have a higher infant mortality rate when compared to Ghana a

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<sup>442</sup> Appropriation Bill [online ]. 2013. [cited 2013 november 13]. Available at: <http://www.nassnig.org/nass2/legislation.php?id=1583> accessed November 12, 2014

<sup>443</sup> Chikwe Ihekweazu . dec 2013. [Online ]Analysis of Nigeria's budget for health in 2014 available at : <http://nigeriahealthwatch.com/analysis-of-nigerias-budget-for-health-in-2014/epiAfrica> accessed : November 5th, 2014

<sup>444</sup> See Central Bank of Nigeria (CBN). Annual Report and Statement of account, 2000. And Health Reform Foundation in Nigeria (HERFON). Nigeria Health Review. 2006. [cited 2013 Oct 8] . Available from: <http://www.herfon.org/home.html>

<sup>445</sup> Ufuoma J E . (2014). Accelerated reforms in healthcare financing: the need to scale up private sector participation in Nigeria. [online] Int J Health Policy Manag. Jan 2014; 2(1): 13–19. Published online Dec 9, 2013. doi: 10.15171/ijhpm.2014.04 Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3937949/> accessed November 18, 2014.

<sup>446</sup> World Bank Health Expenditure per capita [online source ]. [cited 2013 Sep 16]. Available from: <http://data.worldbank.org/indicator/SH.XPD.PCAP>.

country with a lower per capita expenditure of USD54 and South Africa. Besides, even though Ghana has a lower GDP per capita than Nigeria, it spends significantly higher on publicly funded healthcare at USD27 per person than Nigeria's USD18.70 per person<sup>447</sup>.

Although Nigeria made a commitment to spend at least 15 per cent of its yearly budget on healthcare in 2001, several years down the line the country still struggles to allot a substantial amount to the health sector<sup>448</sup> and even the meagre budget cannot really be accounted for. In a comparative study of Ghana, South Africa and Nigeria, it was discovered that Ghana and Nigeria had difficulty in accurately establishing where (donor) resources for health are being spent. Also, when Nigeria's National Planning Commission requested for details of all development funding given to Nigeria from 1999 to 2007, there was unwillingness to share the figures<sup>449</sup>.

Based on available data, it is evident that beyond budget irregularities, discrepancies in state and local government spending, Nigeria still faces issues of general fiscal mismanagement and lack of accountability and transparency in health care budget expenditure. For instance, there is no record of the exact amount spent by donors on various health related programs in Nigeria. Likewise, the procedure for distributing money to projects remains unclear<sup>450</sup>.

The dispersed nature of public health funding in Nigeria, via the federal, state and local government levels and the apparent dearth of organized information on state expenditure suggests that it would be rather difficult to correctly calculate total public health funding. Therefore, given that positive health outcomes are directly related to the way health funds are

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<sup>447</sup> Rachel Burke and Devi Sridhar . (2013). Health Financing in Ghana, South Africa and Nigeria: Are They Meeting the Abuja Target? The Global Economic Governance Programme University of Oxford

<sup>448</sup> Obansa, S. A. J. & Orimisan, A. (2013). Health care financing in Nigeria: prospects and challenges. Mediterranean journal of social sciences. 4(1)

<sup>449</sup> David Stevens, Global Dashboard. Nigeria: do donors know what they're spending?" [online]. <http://www.globaldashboard.org/2010/03/19/nigeria-donors-spending/> (accessed 23 sept 2014)

<sup>450</sup> Health financing in Ghana, South Africa and Nigeria: Are they meeting the Abuja target?, Rachael Burke & Devi Sridhar. August 2013 / GEG WP 2013/80.

disbursed, the government has to put in place a more efficient and transparent mechanism that will ensure equitable health coverage for all citizens.

Another aspect of the health sector which has affected health funding in Nigeria is insurance. In Nigeria, most people pay out of their own pocket for health services given that even though Nigeria has a National Health Insurance Scheme which has been in existence since 1999, it only caters for civil servants and in only two states<sup>451</sup>. Besides, the trifling amount allotted to health insurance which is about four percent of the total health budget does not significantly impact on health statuses nor reflect in the budgeting process. Presently, Nigeria does not have any social security grants for citizens and it appears that none might be introduced in the near future considering that even though the National Health Insurance scheme which was meant to reduce poverty by cutting down on 'out of pocket payment' for healthcare by individuals and households has yet to fulfil its objectives. so long, the community based health maintenance organizations - HMOs, have been grappling with issues such as small risk pools, inability to protect the poor beneficiaries, dependence on subsidies, financial / management lapses and sustainability challenges<sup>452</sup>. Although health insurance is known to improve adequate access to healthcare, due to the issues surrounding its set up such as high premiums by the private insurance companies in Nigeria, most Nigerians are unable to utilize its benefits, thus, continue paying out of pocket for health care.

Beyond the issue of poor insurance coverage, another challenge facing the health sector in Nigeria is inequity in resource distribution. This is based on the fact that just as it began post-independence, where the bulk of the financial resources were channelled towards building health services in the urban areas, in contemporary times, over 70 per cent of Nigeria's health budget is being expended in urban areas where only 30 per cent of the population live. If the

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<sup>451</sup> Humphreys G. (2010). Nigerian Farmers Rejoice in Pilot Insurance Plan. Bulletin WHO. 88 pp. 329-330

<sup>452</sup> opcit



saying that ‘the health of any nation is a very vital to the development of that country’ is anything to reckon with, the federal government of Nigeria has to rise up to the issues surrounding health sector funding in the country and ensure that inequity in all its ramifications is totally reduced to the minimum.

#### **d) Human Resources for Health –HRH**

The health labour force is essential to attaining health for all in every country<sup>453</sup>. The WHO recommends that a functional labour force is one that is quick to respond to people’s health needs and expectations. In addition, such labour force is rational and competent enough to accomplish and help people attain the best health outcomes within existing resources and conditions. Although countries are always trying to increase their labour force in order to accommodate the ever growing health needs.

However, the key issues affecting human resources for health across countries include: improving employment (and its processes), education, training and distribution; enhancing productivity and performance; and improving retention. In order to enhance the efficiency and output of HRH, countries have to ensure the recruitment process takes cognizance of remuneration systems that produce the right kind of incentives. Secondly, the staffing must make provisions for achieving appropriate numbers of the right mix with regards to the following ; numerical strength (number), skills, experiences and diversity. Thirdly, there has to be regulatory mechanisms to ensure system wide deployment and distribution in accordance with needs. Furthermore, every country must put in place and ensure adherence to work standards and ethics as well as create the right support systems and enabling work environments. To sum it up, the WHO recommended that there has to be mechanisms that will guarantee teamwork and collaboration of all health sector stakeholders such as: health

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<sup>453</sup> Opcit – See WHO,2010. Components of a health system

worker advisory groups, donor coordination groups, private sector, professional associations, communities, client/consumer groups<sup>454</sup>.

Beyond physical capital and pharmaceuticals, work force for health remains one of three key health system inputs that improves health outcomes and ensures health service delivery<sup>455</sup>. According to Kabene et al<sup>456</sup>, HRH comprises diversity of clinical and non-clinical personnel accountable for public and individual health intervention<sup>457</sup>. As a key health system input, HRH to a very large extent determines the health systems output through the combined efforts of the skills, knowledge and drive of those people in charge of delivering healthcare services.

Even though HRH are essential for the delivery of health services to patients<sup>458</sup>, there is shortage of health personnel in the Nigerian health sector and this could be traced back to post-independence era. Although the human resource challenge in the health sector existed long before independence, it became quite obvious during the 1970s due to brain drain / high migration rate of trained medical personnel to other countries<sup>459</sup>.

In 2006, the WHO estimated that the world faces scarcity of about 4.2 million health workers with African countries being mostly affected by this dearth of health personnel<sup>460</sup>. Although Nigeria has the highest Human resource for health in Africa, 2012 global estimates indicated

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<sup>454</sup> Ibid.pp 1-2

<sup>455</sup> World Health Report 2000 . [online] available at:

[http://www.who.int.proxy.lib.uwo.ca:2048/whr/2000/en/whr00\\_ch4\\_en.pdf](http://www.who.int.proxy.lib.uwo.ca:2048/whr/2000/en/whr00_ch4_en.pdf) accessed : November 21, 2014.

<sup>456</sup> Stefane M Kabene, Carole Orchard, John M Howard, Mark A Soriano and Raymond Leduc .(2006).The importance of human resources management in health care: a global context[Online article] .Human Resources for Health 2006, 4:20 doi:10.1186/1478-4491-4-20. Retrived from: <http://www.human-resources-health.com/content/4/1/20>

<sup>457</sup> See WHO world health report, 2000. Pg 75

<sup>458</sup> Connell, J., Zurnb, P., Stilwellc, B., Awasesd, M. and Braichet, J. (2007) Sub-Saharan Africa: Beyond the Health Worker Migration Crisis? Social Science & Medicine 64, 1876–1891

<sup>459</sup> Azuzu, Michael C. (2004) The Necessity for a Health Systems Reform in Nigeria Journal of Community Medicine & Primary Health Care 16, 1; 1-3.

<sup>460</sup> WHO, 2006. World Health Report 2006 – Working Together for Health [online] WHO. Available at <http://www.who.int/whr/2006/en/> [accessed November 22 2014]

that the country lacks about 144,000 bio medical health personnel<sup>461</sup> with an estimated ratio of patient to doctor being 39 per 100,000 population<sup>462</sup>. Nigeria is home to over 152, 616,000 people<sup>463</sup> and a part of the 3% of the world's health workers who are located in Africa and facing 24% of the global disease burden, with less than 1% of world health expenditure<sup>464</sup>.

Based on available data, the table below shows the number of HRH that the Nigerian health sector has had from 1981 to 2008.

Table 3:

	1981	1992	2002	2007/ 2008
Physicians	10,399	21,235	22,000	39,210 / 52,408
Dentists	379	1,295	1200	
Pharmacists	2,609	6,060	-	13,199
Radiographers	384	600	-	840
Physiotherapists	236	701		1,473
Medical laboratory scientists	6,687	6,134		12,703
Community health officers	348	600		19,268
Nurses *RN	29,962	71,712	62,000	128,918
RM*	24,112	58,028	51,000	90,489

<sup>461</sup> Adebayo, Bukola .2012. [online ]Nigeria has Shortfall of 144,000 Health Workers– Don The Punch, December <http://www.punchng.com/health/nigeria-has-shortfall-of-144000-health-workers-don/>

<sup>462</sup> Population references bureau, 2010

<sup>463</sup> Ibid

<sup>464</sup> Opcit – see WHO,2006, 486

*Table 3. Sources: Population Reference Bureau, 2010; Erinosh, 1998; African health observatory, 2008*

The 2002 listing of physicians and dentists reflects those registered with the Nigerian Medical and Dental associations as well as those living abroad and others who may have died. Likewise available data on nursing did not reflect the number of duly registered personnel which are estimated at; 98,000 for RN and 75,000 for RM

At present, Nigeria has 26 recognized medical schools, 86 nursing schools, 77 schools of midwifery, 12 medical laboratory schools, 6 physiotherapy schools, 5 radiography schools, 9 schools of pharmacy, 19 schools of pharmacy technology, 40 schools of health records, 13 schools of community health officers, 43 schools of community health extension workers, 4 schools of dental technology, 6 schools of dental therapy and 3 schools of optometry<sup>465</sup>.

It appears that the recruitment process into Nigerian medical and nursing schools may have contributed to the shortage of health workers in the country. According to Emuakpor<sup>466</sup>, most of the teaching hospitals currently introduced specialized nursing training, such as ophthalmic nursing, theatre nursing, etc, while certain categories of health workers such as Public health attendants otherwise known as Sanitary inspectors and dispensary attendants are totally non-existent. The scarcity of personnel in Nigeria is further worsened by brain drain / migration of qualified health personnel to developed countries where there is a higher demand for their skills and corresponding remunerations. For instance, in 2007, the number of Nigerian doctors who had migrated overseas was estimated to be approximately 3,567. And, out of that number, 2,392 and 1,529 are estimated to have migrated to the United States and United Kingdom respectively.

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<sup>465</sup> African health workforce observatory & WHO. 2008. Human resources for health country profile-Nigeria.

<sup>466</sup> opcit

Part of the reasons for the high migration of Nigerian doctors to developed countries might not be unrelated to the low salaries of health workers in Nigerian compared to those of their counterparts in other countries. For example, available data indicates that the average entry level salary of a Nigerian medical doctor employed in the public sector (which is being run by the government) is One hundred and one thousand, one hundred and seven naira, sixty four kobo - N101, 107.64<sup>467</sup>. Other factors such as technological advancement in diagnostic equipment care, availability of infrastructures, training opportunities and better living conditions have also been cited as reasons for brain drain among Nigerian health workers.

**e) Service delivery**

Health systems are said to be “only as efficient as the services they provide”. This implies that poor service delivery will also have a negative impact on and create bad image for the health system. In order for a health system to effectively deliver services to people, a number of factors have to be in place such as:

**i. Networks of close-to-client primary care, organized as health districts or local area networks with the back-up of secondary care facilities, specialized and hospital services, responsible for a well-defined population**

The MSH defines healthcare basic services delivery<sup>468</sup> as the ‘management of the components of a health system that make available healthcare services, whether in stationary facilities, such as primary health centres, hospitals, outpatient units, or by means of mobile or outreach services as well as targeted health campaigns such as nationwide vaccination days’. Besides, in structuring health services system, there are crucial questions to be asked regarding the provision of basic services that would guarantee an effective health system.

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<sup>467</sup> ibid

<sup>468</sup>William N., (2007).Rebuilding Health Systems and Providing Health Services in Fragile States. Management sciences for health Occasional paper, No 7(2007)

Questions like: “a. *what health services are to be delivered?* b. *How are the health services to be organized and produced?* c. *Who will receive the services?* d. *Who will pay for the services and how will providers be paid?*”<sup>469</sup> The essence of asking these questions is for ease of allocating scarce resources such as finances, infrastructures, personnel and pharmaceuticals. At the establishment of its health system, every country decides what aspect of care to focus on. Therefore, answering these questions would also enable healthcare administrators to channel available resources towards preventive, curative and public health care services. Depending on the type (curative, preventive etc) and level of care (primary, secondary, private, public etc.) a country has chosen, these questions would also help in ensuring equitable distribution of resources since it would help in identifying where majority of the vulnerable population live, their earning capacity and what kind of care should be made available to them<sup>470</sup>.

In relating these questions to Nigeria, Onokerhoraye opines that healthcare needs differ in time and space. In the same way, differentials in access to healthcare are often influenced by physical access or location<sup>471</sup>. Onokerhoraye added that the need for health care varies in space; consequently, in organising healthcare provisions, there is need for a spatial distribution. Also, the spatial dimension in healthcare provision organization is also essential in understanding usage given that having physical access to health facilities is an important determining factor of the utilization of health care facilities by people.

The provision of curative and preventive health services by the Nigerian government is part of the efforts to close the gaps of inequities. The essence of focusing on preventive health is to avert disease outbreaks and ensure that the health system is not over burdened by multiple

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<sup>469</sup> Ibid pp 21

<sup>470</sup> Ibid pp 23

<sup>471</sup> Onokerhoraye, A. G. (1976). A Conceptual Framework for the Location of Public Services in the Urban Areas of Developing Countries: The Nigerian Case”, *Socio-Economic Planning Science*, Vol. 10, pp. 237-240.

diseases. Disease prevalence in most parts of the country coupled with Nigeria's dedication to preventive and curative health care services has been the key determinants of the distribution of service provision in the country. Although Nigeria currently has a network of primary or local area health centres as well as strategically positioned secondary and tertiary health care facilities to support the primary health clinics, these resources and infrastructures are sparsely distributed and not well planned. And, often times tend not to uphold the country's healthcare obligations to its citizens by deviating from the core ethics and standard guidelines for health services provision. This has resulted in health system inequities where the urban population have access to better healthcare services than those in the rural areas.

An explanation for the urban concentration of most health care facilities in Nigeria could be traced back to the formative years of the Nigerian health system where the colonial administrators established health facilities close to their residents and for their sole use. This precedent set the pace for the prevailing disparity in the location of health services in the Nigerian health system and has resulted in poor or denied access to rural dwellers

The question of 'who bears the cost of treatment in Nigeria' has been answered in the previous chapter. However, is revisited here in part. In Nigeria, healthcare expenditures are borne by households and individuals through a direct out of pocket payment. Available data indicates that Out-of-pocket expenses as a proportion of private expenses on health in 2005 were 90.4 %<sup>472</sup>.

There is currently no recent data on private health spending statistics in Nigeria. But, with the introduction of the new NHIS weekly payment model it is expected that out of pocket payment on health would reduce significantly. Paying the sum of two hundred and fifty naira per week or a once off payment of twelve thousand five hundred naira per year for health

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<sup>472</sup> opcit

insurance coverage ensures that even the poor people who live on less than a dollar per day can actually prioritise their spending and pay ahead for their health needs, according to their daily or weekly earning.

No research has been conducted to measure the impact of the NHIS before the collaboration with telecom service providers and whether it had reduced private spending on health by those insured. Also, it is not known whether the new payment incentives in Nigeria by the NHIS would influence the way and manner in which service providers make their services available. Notwithstanding, this is a landmark development in the Nigerian health system, and it is projected that within the next five years when the impact would have been evident, it would have far reaching outcomes.

Healthcare planning is often subject to change as new diseases emerge and the health system has to respond accordingly. In the same way, healthcare facilities, resources and infrastructures have to be expanded to accommodate the growing health needs of the population it is meant to serve. The distribution pattern of primary healthcare facilities in Abuja and Nassarawa were found to be suitable for the population; while healthcare facilities are evenly distributed in the local area councils that make up Abuja, the thirteen (13) local government areas of Nassarawa state had the following: six hundred and twenty (620) Public facilities and a total of two hundred and seventy four (274) private facilities. Whereas the twenty two (22) local government areas in Kaduna state had a total of nine hundred and ninety nine (999) public primary healthcare facilities and five hundred and fifty three (553) private clinics. The pattern of distribution showed that while residents of Sanga had access to health centers and dispensaries, areas like Kaduru, Kaudan North and Kudan have the lowest number of public and private facilities compared to the population they are meant to serve. Likewise, Ikara, Kachia and Birnin Gwari have higher number of public facilities but limited numbers of private facilities.



Primary healthcare facilities are usually the first place patients' visit for diagnosis and treatment of ailments<sup>473</sup> and any dissatisfaction over the services rendered would ultimately result in loss of confidence by patients and boycotting treatment. In order to avoid the major consequences of dissatisfaction over poor health service delivery, particularly, in remote and underserved areas, the government has to monitor and ensure equitable distribution and ease of access of health services at all cost. For instance, beyond having personnel and physical infrastructure in place, there are other aspects of health services that matter. The Nigerian government and healthcare administrators need to understand that having an uninterrupted supply of quality, affordable and efficacious essential medicines coupled with knowledge of the right prescription and dosage regime are crucial to providing effective health services<sup>474</sup>.

**ii. Provision of a package of benefits with a comprehensive and integrated range of clinical and public health interventions, that respond to the full range of health problems of their populations, including those targeted by the Millennium Development Goals**

As a rule, every functional health system must be able to categorize, maintain and occasionally update a priority and integrated clinical / public health intervention services package based on the prevalent health needs of its citizens at all levels of healthcare facilities. The integrated intervention package sets the agenda for the provision of health services and also aids in coordinating improved health all over the country.

Nigeria has fared well in terms of designing intervention programs and packages for maternal, reproductive and child health. Data from the UN suggests that the Nigerian government has renewed efforts towards fulfilling the MDGs before the end of the year 2015,

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<sup>473</sup> Onokerhoraye, A.G.(1978), "Spatial Aspects of the Health Care Problem in Nigeria: A Case Study of Kwara State", *Quarterly Journal of Administration*, Vol.12, pp.241-255.

<sup>474</sup> Opcit –MSH- 2007

especially with the introduction of clinical interventions for reproductive health and the elimination of user fees for most government sponsored nationwide health packages.

Some of the persistent public health issues currently facing Nigeria are: Malaria, TB, and HIV/AIDs. Available data indicates that sixty percent of outpatient visits to hospitals are caused by malaria; likewise, thirty percent of childhood deaths; twenty five percent of child mortalities (infants under one year) and eleven percent of maternal mortality are caused by malaria<sup>475</sup>.

In 2014, out of twenty two high burden countries with high incidences of TB, Nigeria ranked eleventh. In their 2013 publication of Global TB report, the WHO projected an annual TB occurrence in Nigeria at one hundred and eighty thousand cases. On the other hand, a 2014 survey of National TB prevalence level indicated that Nigeria's TB burden was higher than the WHO estimates in 2013<sup>476</sup>. Hence, in 2015, part of Nigeria's public health concern and objective is to reduce the TB prevalence and mortality by half.

Furthermore, apart from malaria and TB, the HIV scourge which is declining in most countries but worsening in Nigeria has also raised concerns about public health safety in Nigeria. Nigeria has the second-highest number of individuals living with HIV with a prevalence rate among adults (15 to 49 year olds) in 2012 being 3.1 percent. The United States Centre for Disease Control and Prevention also revealed that in three years, the number of people infected with HIV/AIDS in the country rose marginally by nearly five hundred thousand. In the same way, HIV/AIDS related mortalities also increased to 217,148.

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<sup>475</sup> Chika Okeke. 2014, December 29th. "Health: The Highs and Lows Of 2014" leadership newspaper [online] available at: <http://leadership.ng/news/398280/health-highs-lows-2014> accessed 13th February 2015

<sup>476</sup> Kasim Sumaina, Paul Obi. 2014, April 10<sup>th</sup>. "Nigeria Ranks 11th among Countries with High Burden of Tuberculosis" Thisdaylive[online] available at: <http://www.thisdaylive.com/articles/nigeria-ranks-11th-among-countries-with-high-burden-of-tuberculosis/175783/> accessed 13<sup>th</sup> February 2015

One aspect of the HIV/AIDS prevalence that is worthy of note and one that has posed a question is the high degree of mother-to-child transmission and infection by blood transfusion, notwithstanding the fact that such modes of transmission could easily be prevented<sup>477</sup>. This mode of mother to child transmission has further resulted in sixty thousand children being infected with the virus in 2012 and Nigeria currently ranked as a country with the highest number of children living with HIV/AIDS<sup>478</sup>. In response to the high prevalence of HIV/AIDS, the Nigerian government recently launched a preventive package that would stop mother to child transmission of HIV/AIDS, being the commonest mode of transmission in the country. It is expected that this would help in reducing infant and maternal mortalities, thereby achieving some of the MDGs program objectives by the end of 2015.

Aside reducing high mortality rate in the country, the other positive aspect of introducing preventive vaccines and kits to citizens is to avoid waste of resources due to the resistant nature of most of these diseases such as TB. For example, rather than focus on preventive care, if a health system is pro-curative and patients develop resistance to a particular medication; do not respond to treatment where the government had spent huge resources in procuring medicines, it amounts to wasted resources and efforts. Yet, on the other hand, if a health system is pro preventive care, it would require few resources to manage diseases and those resources would not be wasted; diseases would be tackled effectively; would not get out of control; hardly gain grounds nor spread fast within the health system.

Public health interventions by the government have led to a significant reduction in polio cases, even in politically volatile areas within the northern part of the country. The rate of success against polio reduced faster in the last five years than in the previous fifteen years

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<sup>477</sup> The Punch Editorial Board, 2014, June 15<sup>th</sup>. "Nigeria's high HIV/AIDS prevalence rate" The punch Newspaper [online] available at: <http://www.punchng.com/editorials/nigerias-high-hiv-aids-prevalence-rate/> accessed 13<sup>th</sup> February 2015.

<sup>478</sup> *ibid*

because there were more resources to combat fewer incidents. The success recorded in polio reduction shows that focusing on preventive health leads to fewer diseases and ill people thereby making funds available to treat those who are ill. By so doing, if less people need medicines, there will be greater access to medicines as opposed to when demand overwhelms supply.

In spite of the health benefits of having integrated clinical and public health intervention packages in a health system, most national clinical health intervention packages are often driven by private organizations and the preventive aspect which is often mobilised by the government appear not to respond appropriately to the full health needs of the population due to weaknesses in the administration and poor implementation strategies. A typical example is that of cancer; cancer has become widespread in the country, cutting across gender and age and the ministry of health is expected to build the capacity of primary healthcare facilities particularly, in rural areas for early detection and referral to back up facilities (general hospitals). But, it is not so- most primary healthcare centres are underfunded and lack human and material resources such as diagnostic equipment.

Moreover, most cancer awareness campaigns and treatments are sponsored by private organizations. Where patients are able to get accurate diagnosis through private facilities, or through access to private intervention packages (NGOs) and decide to use public facilities for specialized care, the waiting period (the length of time it takes to see a specialist) could be quite lengthy. Most patients who cannot afford the cost of cancer treatment in a private clinic die while awaiting their appointments with oncologists at general hospitals. Hence, the government has to ensure that health and clinical intervention packages are designed and tailored to meet the prevailing health needs of its citizens per time.

While it is good to initiate nationwide campaigns against malaria and polio, such efforts should be channelled towards cancer, tuberculosis, hepatitis and other silent killers. Beyond those listed here, there are other killer diseases that are causing high mortality across genders (owing to the high cost of treatment) but due to the poor data management and information system, coupled with lack of cooperation between public and private, little is known about them, as a result, there is little or no intervention package for them.

Developing clinical and public health intervention package is not supposed to have any cost implications for patients. And, if it does, it shouldn't lead to impoverishment or boycott of treatment due to low purchasing power. For example, some combined clinical and public intervention packages have considerably greater treatment costs than others. The government can focus on subsidising expensive treatments for certain health conditions, provide funding for medicines and ensure users pay limited amount as operating or treatment cost in any kind of healthcare facility. In a community with a high number of poor people, the local government can subsidise treatments and provide unhindered access to back up facilities when necessary in order to ensure that health services are delivered when the people need and at a reasonable cost.

The Nigerian government has to decide the kind of integrated clinical / public health packages that should be financed. And, it should be on the basis that the intended intervention would reduce mortality rates, it would be people centred; that is, based on their health needs and, also have the most rewarding impact on population health. In addition, the government can also choose a particular clinical / public health intervention package based on the fact that it would affect essential health indices and yield better outcomes.

While the Nigerian health system may not have the requisite resources for optimum performance, ensuring available resources and infrastructures are operable would guarantee

effective service delivery. In order for citizens to enjoy quality services, perhaps, the emphasis has to go beyond policy making, inadequate financing, shortage of infrastructure and trained personnel to policy implementation, regulation, data collection, planning and management as well as accountability.

Rather than make new policies, if existing policies are applied and implemented in the coordination of health services, it would ensure equitable distribution of scarce resources and timely access to health facilities. In terms of personnel and distribution of medicines and medical supplies, a functional data management and information system coupled with a well-organized and closely monitored delivery process would help in planning and allocation of human and material resources to each identified network (s) of primary health facilities based on the prevailing health needs of the population.

While this study maintains that health financing in Nigeria is poor compared to the WHO requirement; low ratio of doctor to patient; uncoordinated pharmaceutical supply chain resulting in low access to medicines; health services inequities thrive due to disorganized provision of health services, it suggests that Nigeria currently has the capacity to effectively manage its health system and scarce human and material resources for health by engaging in a well-coordinated and effective public private partnership coupled with the ability to collect, optimise and utilize health oriented information for proper regulation, planning, coordination and supervision of health service provision.

Having an effective information management system in Nigeria will help in health resource assessment and understanding the type and level of disease prevalence. The assessment will in turn enable accurate allocation of scarce resources. It will aid in determining current demographics and service capacity where there has not been a census in the case of Nigeria; an effective information management system will also help in determining service coverage

and population epidemiology amongst others. Therefore, the Nigerian government has to focus more on updating its information system for the collection and management of accurate data that could be used in planning and allocation of scarce resources.

**iii. Standards, norms and guidance to ensure access and essential dimensions of quality: safety, efficiency, incorporation, continuity, and people – centeredness**

Every health system must have standards to ensure maximum professionalism in every aspect of healthcare practices. Also, standards help in ensuring that quality, affordable, timely, and effective treatments / care are delivered to patients based on their health needs per time. A careful analysis of healthcare challenges shows that, greater emphasis has always been laid on ‘access and quality’ related issues. The foremost causes of poor health services delivery can be prevented by setting standards that would ensure access (physical and cost -effective) to qualified personnel as well as medications. Low access to health service infrastructure, personnel and affordable essential medicines coupled with non-adherence to standard treatment guidelines on the part of the personnel and patients have led to increased morbidity in some cases mortalities in the Nigerian health system.

Access to health services can be enhanced with the provision of a regulation and monitoring system. Similarly, a coordinated health provision services system would ensure an uninterrupted service delivery through the availability of functional infrastructure, qualified personnel and quality health supplies. In providing health services for the people, the government and other private providers have to take cognisance of the fact that health

services must be delivered in such a way that it would impact on the most critical health indicators<sup>479</sup>.

Nigeria has a standard treatment guideline which was included in the last revision of the national essential medicines list and it clearly outlines guidelines for treatment and appropriate dosage for medicines at all levels of treatment. The essence of having standards and norms in every health setting is to ensure that quality, cost-effective, accessible, and excellent health services are delivered to the people at every level of care and at all times regardless of their geographical location.

Quality health service delivery necessitates having an effective information system that would help in identifying the various needs of each population; it would also point out the most vulnerable groups of the society as well as those who need improved access to the most essential health services. Furthermore, a coordinated health provision plan would also guarantee that health services are rapidly extended to regions where they are not existent then make available, backup supplies of pharmaceuticals to parts where they are urgently needed.

There is a high concentration of human resources for health at the tertiary level in Nigeria. As a result, those who seek care at the primary facilities are often attended to by nurses, midwives, interns or unauthorised personnel. In some cases, most primary facilities are left without qualified professionals who understand the required standards and tenets of the medical profession. Besides, in the absence of qualified physicians, unauthorized adjuncts attend to patients often times, inappropriately and this results in wrong diagnosis, inappropriate treatment: prescriptions and use of medicines, and, in due course, patients lose confidence in the health system and resort to self-medication.

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<sup>479</sup> Opcit-MSH,2007



Disharmony between public and private healthcare providers is another factor that has contributed to poor service delivery in Nigeria. Similarly unhealthy rivalry amongst bio medical healthcare personnel equally affects the provision of health services and sometimes results in complete denial of access to healthcare. In 2014, the disharmony led to several strike actions which interrupted healthcare delivery to a lot of people who rely mostly on public facilities for their health needs.

Thus even where there are standards guiding medical practices, if not closely monitored and deeply entrenched in the system as a norm with heavy repercussions for any deliberate act that breaches ethics / standards, people would regularly disregard such standards.

#### **iv. Mechanisms to hold providers accountable for access and quality and to ensure consumer voice**

Healthcare providers make efforts towards delivering quality and efficient services by using accountability, management systems and quality enhancement initiatives. However, although these initiatives record a high success rate in industrialised fields, they tend to have lower success rates in healthcare settings<sup>480</sup>. A number of factors have been accountable for the low success rate of these techniques. The insignificant adjustment in organizational culture to balance the tools and processes that are used to increase quality has been ascribed as the main factor responsible for health providers' inability to ensure access to quality healthcare<sup>481</sup>. Healthcare organizations and providers have been unable to create a sense of accountability with their employees rather they keep shifting grounds and fail to inculcate a sense of quality in the minds of their employees as well as re-establish the essence of providing quality services to the public. Holding healthcare personnel accountable for their daily performance

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<sup>480</sup> Blumenthal D., Kilo C., (1998). A report card on continuous quality improvement. *Milbank Q.*76 (4):625-648.

<sup>481</sup> Mauriel J.A., Detert J., Schroeder .R., (2000). A framework for linking culture and improvement initiatives in organization. *Acad manage Acad manage Rev.*;25(4):850-864.

guarantees permanence of performance and relentless enhancement which culminates in effective health services delivery and better health outcomes

Accountability and stewardship are some of the mechanisms that could be used to ensure healthcare services are made accessible to patients by providers with a deep sense of responsibility for the best possible care and patient satisfaction. In Nigeria, most public health care employees lack a sense of accountability. This lack of accountability is evident in low quality of patient care and disregard for money spent on health services. This attitude is worse in remote areas where there are limited healthcare facilities. And in the case where private facilities abound, most poor people cannot afford the cost. Thus, are forced to tolerate poor services.

The poor culture of accountability by healthcare personnel in Nigeria has led to people not getting value for the money spent on their healthcare needs. And, when they do not get value for their money, they either go to more expensive places where quality is assured or travel abroad. Therefore, lack of accountability by healthcare personnel could be said to increase health tourism as well as misuse, underuse and overuse of healthcare resources<sup>482</sup> (especially in a case where people choose certain facilities over the others due to the quality of care and value for money).

Where there is no form of performance measurement<sup>483</sup> mechanism, resources are wasted without the commensurate outcome. Where performances are not assessed, personnel do not have a sense of responsibility for their actions and tend to misbehave without fear of the consequences. However, where there is accountability, it ensures that feedback from performance measurements are used to improve healthcare provision processes for better

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<sup>482</sup> Kwon S.W.,Adler P. Riley P.Lee B. Signer J. Satrasala R., (2003). Performance improvement capability: keys to accelerating performance in hospitals. *Calif Manage Rev.*2003;45(2):12-33.

<sup>483</sup> Persaud D. Rathwell T., (2002). Running to standstill: change and management in Canadian healthcare. *Healthc manag Forum.* 2002;15(3):52-60

outcomes. Accountability in a healthcare system reduces inequities in the provision of healthcare services by ensuring that there are no variability in service provision regardless of the location, level and type of healthcare facility<sup>484</sup>.

In more developed countries like the USA, there are organizations known as ACO – Accountable Care organisations with networks of primary health services providers which are responsible for the quality and cost of care provided to a specific population. The objective of this legal entity is to make sure that healthcare provision services are well coordinated and provided efficiently; performance benchmarks achieved with financial rewards. The ACO is further recognised by the United States Patient Protection and Affordable Care Act and respects consumer views. The ACO has various models such as the network model, organized medical group model, hospital systems model and collaborative model. All models are created to accommodate and monitor both public and private healthcare facilities for quality, cost management and efficiency in healthcare services provision<sup>485</sup>.

Based on WHO 2010 Global Strategy recommendation for improvement of maternal and child health, Nigeria established the NIAM– Independent Accountability Mechanism to track progress and improvements on maternal and child health. NIAM is supported by the MOH and constitutes both government and non-governmental (public and private) resource persons responsible for tracking progress across the country<sup>486</sup>. beyond the WHO Global strategy, the alma ata declaration also stated how primary healthcare should be structured, delivered and managed within decentralised systems like that of Nigeria. These commitments to efficient health services delivery are clear indications that Nigeria has foundational frameworks for the

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<sup>484</sup> Shortell S. M., Ferlie E. B., (2001). improving the quality of healthcare in the United Kingdom and the United States: a framework for change. *Milbank Q.*2001; 79(2):281-315.

<sup>485</sup> Peter Boland, Phil Polakoff, Ted schwab. 2010, October “Accountable Care Organizations Hold Promise, But will they achieve cost and quality targets?” *managed care magazine* [Online]. Available at: <http://www.managedcaremag.com/archives/1010/1010.ACOs.html> accessed 17th February 2015.

<sup>486</sup> Aminu M.G., Sarah B., (2014). The Nigeria Independent Accountability Mechanism for maternal, newborn and child health. *International jorngl of Gynaecology & Obstetrics* (Impact factor: 1.56).10/2014; DOI: 10.1016/j.ijgo.2014.02.004

provision of quality, efficient and cost effective health services. Yet, healthcare accountability and consumer participation is poor in spite of enabling policies and legislations.

Although there are systemic and operational reasons for poor health services delivery in Nigeria, consumer voices are hardly heard due because the consumers hardly demand prime services from healthcare operators / providers. Nigerian citizens appear quite tolerant- this laissez-faire disposition accounts for poor standards, lack of accountability and the reason why most issues in the health system go unnoticed, unreported and unsolved is mainly because the victims choose not to complain. If health workers set the operational benchmark quite low and consumers do not complain or protest, it's only natural for the health workers to operate by the accepted standards. In addition, most healthcare personnel can only provide the level of healthcare permissible by the system. If the Nigerian system permits poor service delivery due to negligence on the part of the administrators or inability to monitor, implement and enforce international standards, consumers would also receive a corresponding level of care.

Beyond the lax nature of Nigerian consumers, other explanations for poor health services delivery in Nigeria are: mismanagement of resources and ineffective regulations / management of the Nigerian health system. Other than operational concerns where healthcare providers in Nigeria tend to disrespect patients by not listening to them; not offering detailed information and not ensuring prescription and diagnostic information is well understood, systemic challenges appear to be the bane of the Nigerian health system.

Operational challenges in health service delivery are the kinds that occur at the point where health service providers render services to consumers and they have their roots in Systemic

malfunctions, hence Aina<sup>487</sup> suggested that individuals, organisations or government intending to effect positive transformation in the Nigerian healthcare System must begin with the Systemic anomalies. After all, if the management or administration of the Nigerian system does not hold operators and providers accountable for their actions or set the standards high as well as establish monitoring, regulation and enforcement mechanisms, the services can only be as effective as the quality of the approved standards.

In 2011, an NGO called for a confidential probe of maternal and infant mortalities in the Nigerian health system<sup>488</sup>. This call for enquiry revealed the weak accountability structure of the Nigerian health system. It showed that although there are laws that support and back up citizen's ability to enjoy efficient health services, query and demand compensation for poor service delivery, health system administrators and leadership in Nigeria are not eager to comply. Healthcare providers in Nigeria are obligated to proffer explanations for poor service delivery and the occurrence of preventable deaths, yet, they hardly do so.

For instance, most hospitals in Northern Nigeria audit their maternal and child care systems through the use of review initiatives and quality assessments such as IMPACT initiative applied by the PRRIN- MNCH : Partnership for Reviving Routine Immunization In Northern Nigeria : Maternal, New-born and Child Health Initiative. Though this initiative has its own limitations in terms of enforcing action against bio medical personnel based on consumer reviews, it has helped in reducing public health issues through effective immunization. Also, when underserved and high risk populations are identified it leads to the creation of suitable preventive and public health intervention programs such as the creation of National Stop

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<sup>487</sup> Olufemi A. 2013, February 6<sup>th</sup> "Nigerians do not deserve better healthcare" Abusidiqu The Voice of Reasoning [online] available at: <http://abusidiqu.com/nigerians-do-not-deserve-better-healthcare-by-olufemi-aina/> accessed 18<sup>th</sup> February 2015.

<sup>488</sup> Bridget Nwagbara. 2011, September 15<sup>th</sup> " Confidential Inquiry Into Maternal Deaths in Nigeria: A call to Hold health Systems Accountable. Women Deliver publication [online] available at: <http://www.woemndeliver.org/updates/entry/confidential-inquiry-into-maternal-deaths-in-nigeria-a-call-to-hold-our-hea> accessed 17<sup>th</sup> February 2015

Transmission of Polio –NSTOP initiative which improved the efficiency of polio eradication campaigns and led to the reduction of polio cases in Nigeria which was quite prevalent in the Northern part of the country.

Service delivery processes affect how medicines reach patients and whether they are appropriately prescribed, dispensed, and taken. When analysed critically, it is evident that poor access to essential medicines, a direct consequence of systemic anomalies in medicines supply chain is, as a result of poor health service delivery in Nigeria. Quality, cost-effective and efficient health service delivery depends upon effective regulation and proficient management of the health system which provides an explanation for the success of performance measurement. Performance measurement significantly increases the quality and effectiveness of health service delivery in well regulated health systems as measured by accountability and consumer reviews. The role of all stakeholders in the provision of quality and effective health services in Nigeria is therefore critical.

#### **f) Essential medical products and technologies**

Access to essential medical products and technologies is one of the building blocks of a health system. by extension, general access to health care is greatly reliant on access to affordable essential medicines, vaccines, diagnostics and health technologies of assured quality, which are used in a scientifically sound and cost-effective way<sup>489</sup>.

Economically, medical products are the second largest component of most health budgets after remunerations for HRH –Human Resources for Health, and the biggest component of private health expenditure in LMICs such as Nigeria. Correspondingly, it can be argued that the state of a country’s essential medical products and technologies determines the health and

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<sup>489</sup> World Health Organization. (2007). Everybody’s business. Strengthening health systems to improve health outcomes. WHO’s framework for action. Geneva, World Health Organization

general well-being of its population and as such should be identified as a critical success factor towards achieving economic viability and growth.

To ensure the prioritisation of citizens' access to quality and affordable essential medicines some countries have acknowledged access to essential medicines as a fundamental human right. In Cuba for instance the government has persistently explored ways of providing quality, affordable and timely healthcare services / essential medicines to its population and even to other countries. Yet, despite having a population of over 160million people, Nigeria still struggles to provide quality and affordable essential medicines and has been unable to build a well-functioning and competent healthcare delivery system.

The vital constituents of an operational essential medical products / technologies subsystem within a healthcare system are:

**i. Medical products regulatory system:**

Every healthcare system is expected to have a medical products regulatory system for marketing authorization and safety monitoring. This monitoring system should be reinforced by creating the appropriate legislation and enforcement mechanisms as well as setting up a check-up unit where inspection can take place and ensure easy access to a medical products quality control laboratory. In Nigeria, National Agency for Food & Drug Administration and Control – NAFDAC serves as the regulatory system for food and medical products. NAFDAC came into existence in Nigeria following the scourge of fake and substandard products in the country. Prior to the establishment of NAFDAC, Osibo<sup>490</sup> and Ohabunwa<sup>491</sup> alleged that there may have been more counterfeits and substandard than genuine products / medicines in motion. According to Aluko, in 1990 over 109 children died as a result of being

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<sup>490</sup> Osibo, O.O. (1998). Faking and counterfeiting of drugs. West African Journal of Pharmacy. 12(1):53 – 57.

<sup>491</sup> Ohabunwa, M. 2002. Health care delivery in Nigeria. Past Present and the future. Nigerian Journal of Pharmacy. 31:15-17.

administered counterfeit paracetamol<sup>492</sup>. A different study carried out in 2001 on 581 samples of 27 different medicines from 35 pharmacies in Lagos and 279 in Abuja showed that forty eight per cent of the samples did not meet the terms set by pharmacopoea limits, and the proportion were constant and even for the various types of medicines tested<sup>493</sup>.

Earlier on, the 1988 World Health Assembly resolution entreated countries to help in battling the universal health risk posed by counterfeit and substandard pharmaceutical products. Hence, following this incident and other cases where the proliferation of fake drugs led to preventable deaths and other infirmities in Nigeria, the pharmaceutical council and other relevant bodies compelled the government into taking positive steps to remedy the situation<sup>494</sup>. These efforts led to the creation of the National Agency for Food and Drug Administration and Control –NAFDAC in 1993 as an agency under the Federal Ministry of Health. NAFDAC was established to regulate and control the production, importation, exportation, advertisement, distribution, use and sale of food, cosmetics, medicines, medical devices, bottled/ packaged water and chemicals.

The National Agency for Food and Drug Administration and Control was established to replace former Federal Ministry of Health organization known as the Directorate of Food and Drug Administration and Control. The body was considered unproductive, largely, due to its lack of legislations and enforcement mechanisms regarding fake / counterfeit medicines. As a result, NAFDAC came into existence to tackle banned / counterfeit products in Nigeria and with the goal of eradicating counterfeit pharmaceuticals, foods and beverage products that are

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<sup>492</sup> Aluko, S.O. (1994). Death for Sale: A case study of drug poisoning and deaths in Nigeria. *Social Science and Medicine*. 38(1):97

<sup>493</sup> Taylor RB, Shakoor O, Behrens RH, Evverard M, Low AS, Wangboonskul J, Reid RG, Kolawole SA. (2001) *Lancet* 2001 Jan 15, 357(9272): pp 1933 - 6

<sup>494</sup> W.O. Erhun., O.O. Babalola,. M.O. Erhun. (20010. Drug Regulation and Control in Nigeria: The Challenge of Counterfeit Drugs. *Journal of Health & Population in Developing Countries*; 2001, 4(2):23-34. Available at: [http://www.nigeriapharm.com/Library/Drug\\_regulation.pdf](http://www.nigeriapharm.com/Library/Drug_regulation.pdf) accessed 27th December, 2014



not manufactured in Nigeria and ensuring that available medical products / treatments are safe and efficacious.

In 2005, at a World Bank meeting on health, former Director General of NAFDAC, late professor Dora Akunyili presented a paper where she gave insight into counterfeits and fake medicines. In relating Nigeria's experience, Akunyili underlined that in the past (before the creation of NAFDAC), the medicines distribution and regulatory system in the country was chaotic<sup>495</sup>. And as a result of the chaos, counterfeits infiltrated the Nigerian pharmaceuticals market in various forms. For instance, most of the counterfeit medicines had no active ingredients while some had only lactose, chalk in capsules / tablets and olive oil in Supradyn capsules (a multivitamin). In addition, most of the medicines had inadequate active ingredients while some of those with active ingredients were wrongly packaged and labelled; there were some that did not have the full names and addresses of the manufacturers<sup>496</sup>. There were also cases of clones of a large number of medicines in high demand whereby, the clones had the same quantity of active ingredients as the original but were not as effective as the original; Most of the medicines were expired or had no expiry date; moreover, most of the medicines were expired and re-labelled with the aim of prolonging their shelf life. Some herbal medicines were poisonous, dangerous, ineffective or fraudulently mixed with orthodox medicine.

Akunyili emphasized that medicine regulation in Nigeria over the years was poor. As a result of the poor regulatory system, medicines and other pharmaceuticals were advertised and sold like other kinds of commodities with medicines manufacturers and importers directly

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<sup>495</sup> See : a paper presented by Dora Akunyili "Counterfeit And Substandard Drugs, Nigeria's Experience: Implications, Challenges, Actions And Recommendations"

Dr. Dora Akunyili, Director General, National Agency For Food And Drug Administration And Control (Nafdac), Nigeria, At A Meeting For Key Interest Groups On Health Organized By The World Bank In Washington D. C On 10th -11th March 2005.

<sup>496</sup> Some of the medicines had 41milligrams Chloroquine instead of 200mg, 50milligrams Ampicillin in place of 250mg. again; Paracetamol tablets were packed and labelled as Fansidar (Sulphadoxine + Pyrimethamine).

supplying to local medicine markets. The medicines markets which were being patronized by authorised and unauthorised medicine dealers / sellers in turn sold to people who could not verify the quality of those medicines.

After the formation of NAFDAC, the medicines regulatory / distribution systems were overhauled albeit the opposition from pharmacists who were major patrons of the chaotic 'drug markets'. Having set up a regulatory system, the newly formed NAFDAC focused on establishing organizational procedures for the implementation of legislations and other monitoring strategies such as;

- Ensuring factories are GMP certified before they are allowed to export medicines into Nigeria
- Ensuring that factories are inspected by NAFDAC officers( irrespective of their location across the globe) before their registration for exportation of medicines / other controlled products are approved or renewed
- Appointing re-certification analysts in China and India who re- verifies / confirms medicines quality from those two countries before they are being exported to Nigeria.
- Safeguarding against false declarations' by making sure that pre-shipment information is provided by medicines importers before the arrival of their consignment<sup>497</sup>.

Having set up an operative regulatory system, in 2001 / 2002, NAFDAC carried out baseline studies in six major 'medicine markets' across Nigeria to ascertain compliance to medicines registration, as well as the level and extent of counterfeit / sub-standard medicines in Nigeria. The study indicated that 67.95% of the medicines in those markets were not registered by NAFDAC. Moreover, the study also indicated that 18% of medicines found in major

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<sup>497</sup> Opcit

pharmacies across the country were counterfeit. But, by 2004, the incidence of counterfeit medicines in Nigeria had reduced by eighty percent.

Even though this might be one step ahead in the right direction, it has not increased access to medicines in Nigeria neither has it restored people's confidence in the healthcare system. As a matter of fact, available data indicates that in 2014, Over thirty thousand Nigerians sought medical treatment abroad, and as a result, Nigeria lost \$1 billion US dollars to medical tourism<sup>498</sup>, especially to India<sup>499</sup>. In addition, over 60 per cent of that amount was spent in four key areas of healthcare: orthopaedics, cardiology, renal dialysis, nephrology, and oncology – these happen to be the core areas where India renders cost effective treatments. Overtime, India has become the destination of choice to Nigerian medical tourists due to the low cost of medical treatment, adequate / top class infrastructure and availability of competent bio medical personnel. And, as at 2014, India was ranked as one of the top three medical tourism destinations in Asia<sup>500</sup>.

While most Low and middle income countries such as South Africa and India have identified medical tourism as a national industry with major boosts in their economies, the Nigerian economy suffers capital flight worth billions to these tourist countries. Funds that should be channelled into building quality healthcare structures, increasing access to affordable essential medicines to the poor or revamping the healthcare system are spent on medical treatments in other tourist economies. Cuba presently exports its medical knowledge to other countries; Venezuela, Haiti and Brazil are the major importers of Cuba's medical expertise.

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<sup>498</sup> Emmanuel Elebeke.2014, May 1<sup>st</sup>," Nigerian spends \$1bn annually on medical tourism". Vanguard news paper online. Available online at: <http://www.vanguardngr.com/2014/05/nigerian-spends-1bn-annually-medical-tourism/> accessed : 10<sup>th</sup> January, 2015

<sup>499</sup> Online. "47% of outbound medical tourism in Nigeria go to India" a publication of the Hospitality and Tourism Management Association of Nigeria. Available at: <http://www.hatman2010.org/index.php/newsletter/28-47-of-outbound-medical-tourism-in-nigeria-go-to-india> accessed 10th January 2015

<sup>500</sup> 2014, September 1<sup>st</sup> " India ranks among top 3 medical tourism destinations in Asia." The times of India. Available at : <http://timesofindia.indiatimes.com/business/india-business/India-ranks-among-top-3-medical-tourism-destinations-in-Asia/articleshow/41447360.cms> accessed : 10<sup>th</sup> January, 2015

In 2013, when the Brazilian president complained about shortage of doctors in over seven hundred municipalities, Cuban doctors were sent to remote areas in Brazil where there was shortage of medical personnel<sup>501</sup>.

Nigeria currently remains one of the worst hit by medical tourism and the reason for this is not farfetched. Issues such as; insufficient medical infrastructure, inadequate access to pharmaceuticals and medical diagnostics, lack of competent human and financial resources as well as low budget allocations have contributed to the loss of confidence in the Nigerian healthcare system. And, as a result, Nigerians now prefer travelling abroad for medical treatments. In 2011, Professor Babatunde Oshotimehin, a former Minister of Health, and Dr Ngozi Okonjo-Iweala, alluded that 20% of the annual healthcare budget allocation (approximately 200 million in US dollars) could be saved annually if Nigerians who travel overseas for medical treatments are treated locally<sup>502</sup>. Although the creation of NAFDAC has slightly improved the quality of medicines in Nigeria, this has however not led to a reduction in medical tourism as a good number of Nigerians still travel abroad for medical care due to the poor state of the healthcare system coupled with high cost of medicines / medical care.

Despite the positive strides made by NAFDAC in regulating importation of medicines into Nigeria, the country currently lacks a rights-based approach to healthcare delivery and access to medicines for the poor. The right to healthcare and access to essential medicines in the country has to be entrenched in the national constitution and enforced<sup>503</sup> if the grounds covered by NAFDAC are to be taken advantage of. Otherwise, the high cost of medicines in the country and scarcity / inadequate geographical access might prompt people into

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<sup>501</sup> Jonathan watts.2013, August 28. "Brazil's doctors jeer at Cuban medics arriving to work in rural health scheme" The Guardian. Online. Available at: <http://www.theguardian.com/world/2013/aug/28/brazil-doctors-jeer-cubans#> accessed 17<sup>th</sup> January 2015.

<sup>502</sup> ibid

<sup>503</sup> article 12.1 of the International Covenant on Economic, Social and Cultural Rights Covenant, States and recognizes "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health " it also provides the most comprehensive article on the right to health in international human rights law

patronizing quacks. It would also make them vulnerable to counterfeits which would ultimately lead to treatment failures; organ dysfunction or impairment, deterioration of chronic disease conditions and death. Reasons being that when patients are exposed to counterfeit medicines, even when they finally have access to and are treated with genuine ones, they would no longer respond to the treatment due to the fact that their bodies have become resistant due to the earlier ingestion of counterfeit medicine.

As a way of consolidating the accomplishments of NAFDACs regulation of the influx of fake medicines (on the part of the Nigerian government) and in order to increase access to essential medicines in the country, three Nigerian pharmaceutical companies in 2014 were certified by the WHO to join other companies within Africa and beyond in producing medicines for Malaria, HIV/AIDs, Tuberculosis and other United nations coordinated missions. The WHO pre-qualification of the three Nigerian companies has brought the total number of Nigerian companies manufacturing drugs locally to four<sup>504</sup>. According to the federal government of Nigeria, the pharmaceutical sector paid a high price for the prequalification. The minister of health added that “To attain the WHO Pre-qualification is capital intensive and government is aware of the huge expenditure incurred by the local drug industry to the tune of about \$600, 000,000 dollars in pursuance of this cause”<sup>505</sup>.

Given the capital intensive nature of prequalification for the production of generics, perhaps, one can conclude that when the pre-qualified companies eventually commence local production of generic medicines, the markups and profit margins would be so high that the whole aim of producing locally would be defeated since, the medicines would be expensive.

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<sup>504</sup> The four pharmaceutical companies currently producing medicines locally in Nigeria are : Swiss pharma Nigeria Limited, Evans Pharmaceutical Ltd, May & Baker Pharmaceutical Ltd and Chi Pharmaceutical Ltd. Out of eleven companies, only four have succeeded in getting certified for medicines production locally.

<sup>505</sup> Friday Olorokor. 2014. October 12. “WHO pre-qualification: Local pharmaceutical industries spent \$600m, says FG”. The Punch newspaper. Online : Available at: <http://www.punchng.com/news/who-pre-qualification-local-pharmaceutical-industry-spent-600m-says-fg/> Accessed 14th October 2014.

In addition, at present no Nigerian pharmaceutical company produces vaccines. Possibly, should any company qualify and decide to start local production of vaccines in the country, without government subsidies, local production again, would have failed in improving access to medicines, vaccines and diagnostics. Reason being that it would cost a pharmaceutical company over 2 billion naira to establish a local vaccine production plant. This cost alone limits their ability to start up and if they are able to start up without government support, they might not be able to sustain production due to demand and supply related factors. (Most vaccine related health problems are considered public health issues and a reserve of the national government.

Invariably, most vaccine purchases are made by the government while the private sector market for vaccines remains comparatively small<sup>506</sup>. Studies estimate the cost of producing a vaccine at 200 to 500 million USD (for every vaccine). And this includes research development, testing the vaccine on cohorts, undergoing various regulatory processes for approval, final production and registration. Due to the high technology demands and capital intensive nature of the production of vaccines, only the highest ranking pharmacy companies and highest shareholders are producing vaccines<sup>507</sup>. Pfizer has the highest market share of 7.1, GlaxoSmithKline has share of 5.9%, Novartis has 5.2%, Sanofi-Aventis has 5.1%, and AstraZeneca has 4.5% while Johnson & Johnson has a share of 4.4%.

In as much as a recent study has shown that local production of essential medicines or medicines for special conditions could help in closing the access to medicines gap<sup>508</sup>,

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<sup>506</sup> Chiejina Alexander.2014, November, 24. "Investment in Nigeria's pharma sector hits N70bn". Businessday newspaper, online. Available at: [http://businessdayonline.com/2014/11/investment-in-nigerias-pharma-sector-hits-n70bn/#.VLkGpiuUf\\_E](http://businessdayonline.com/2014/11/investment-in-nigerias-pharma-sector-hits-n70bn/#.VLkGpiuUf_E) accessed : January 16<sup>th</sup>, 2015.

<sup>507</sup> OpCit ; see also; Pfizer has the highest market share of 7.1% , GlaxoSmithKline has share percentage of 5.9, Novartis has 5.2%, Sanofi-Aventis has 5.1 percent, AstraZeneca has 4.5% while Johnson & Johnson is number has a share percentage 4.4.

<sup>508</sup> Kaplan W, Laing R. (2005). Local production of pharmaceuticals: industrial policy and access to medicines: an overview of key concepts, issues and opportunities for future research. In Health, nutrition and population discussion paper. Washington: World Bank; January 2005

nevertheless, if the prequalification process is capital intensive, it negates the whole idea behind local production of generics.

Nigeria presently spends a significant proportion of its insufficient foreign exchange incomes on medicines importation from China and India apart from the case of revenues lost to medical tourism. (Even though the national budget does not stipulate the exact amount set aside for purchase of pharmaceuticals in the budgetary allocation for health). Therefore, local production of medicines would go a long way in improving access to medicines and ensuring a better health outcome for the system. However, it all depends on capital. If local production is capital intensive and the regulation process for imported innovator brands are rigorous, then, improving access to medicines would remain a mirage.

According to Mujinja, Mackintosh, Justin-Temu and Wuyt<sup>509</sup>, potentially, local production might improve access to medicines in both urban and rural areas across developing countries; however, the reality on ground as indicated by their research points to the fact that locally produced medicines were more likely to be used by rural dwellers. For instance in Tanzania, locally manufactured generics were found in both urban and rural areas. While imported innovator brands were found in urban areas<sup>510</sup>.

Despite various forms of access to medicines advocacy by international organizations, improved access to essential medicines remains a major challenge to most developing countries due to factors ranging from rational selection/ use of medicines , reasonable pricing for essential medicines, sustainable financing of healthcare / pharmaceutical products, responsive health systems and an efficient supply/ distribution mechanism. Improved access

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<sup>509</sup> Mujinja G., Maureen M., Justin-Temu,M., and Marc W., 2014. Local production of pharmaceuticals in Africa and access to essential medicines: 'urban bias' in access to imported medicines in Tanzania and its policy implications. *Globalization and Health* 2014, 10:12 doi:10.1186/1744-8603-10-12 available online at: <http://www.globalizationandhealth.com/content/10/1/12> accessed January 15th, 2014.

<sup>510</sup> *ibid*

to essential medicines depends largely on medicines regulatory authority. Without a well-organized and proficient medicines regulatory system, the reliability and sustainability of healthcare systems in developing countries and beyond would still remain a huge illusion.

When talking about access to essential medicines, it is important to understand that it goes beyond making it affordable or by improving physical or geographical access/ availability. Rather, there is need to consider and take cognisance of other factors that hinder or limit access such as; ensuring that the available medicines are of good quality, safe, effective and that people have accepted and are willing to use it rationally<sup>511</sup>. On the other hand, without proper medicines regulations, enforcement and administrative mechanism, the safety and geographical access / availability of essential medicines, even if they are affordable, would have been compromised. Therefore, there is need to ensure that the Nigerian medicines regulatory unit or NAFDAC is resourceful and well equipped to register medicines more efficiently and in a timely manner that is not capital intensive as this will also affect the cost of medicines, especially to majority of Nigerians who pay out of pocket for healthcare. Likewise, prequalification or WHO certification for local production and applications for new medicines need not be capital intensive if the objective of improving access to medicines in developing countries must be achieved.

Barriers of access to medicines are not limited to accessibility, availability, affordability, acceptability and quality. Delays in the registration process of new products can also affect public health as people will not be able to access the medicines they need and when they need it. Delays in the assessment process are also part of the constraints of access to medicines. Most of these delays come about as a result of excessive bureaucracy in the accreditation and medicine approval/ regulation process. Thus, there should be an awareness regarding

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<sup>511</sup> Andy G., (2004). Access to Medicines and Drug Regulation in Developing Countries: a Resource Guide for DFID. available online at: <http://apps.who.int/medicinedocs/documents/s18246en/s18246en.pdf>



medicines approval due to the fact that the approval process even though it is made deliberately rigorous due to human safety reasons can also inadvertently constitute a nullification of access to medicines. For instance, the certification procedure which was required for Ebola treatment was very (its taking too long since it is still ongoing in some countries) rigorous at a time when the Ebola outbreak was becoming uncontrollable. The procedure for certifying vaccines and treatments was simply too rigorous and lengthy.

The challenge of access to quality and affordable medicines in Nigeria has been exacerbated by 'resistance' to most frequently used medicines like those for malaria, antibiotics and multivitamins. And, this is a result of the influx of substandard brands<sup>512</sup>. Due to the high incidence of treatment resistance caused by the use of fake malaria medicines, doctors in Nigeria now use combined therapy for the treatment of malaria<sup>513</sup>. This challenge gets worse by the registration process for new medicines which are manufactured as replacements for the resistant ones. Beyond the regulation process, the issue of rational use also raises concerns given that people can easily buy medicines across the counter without prescriptions in Nigeria and some patients assume that the dosage for every malaria medicine is the same and can be used with or without a prescription<sup>514</sup>.

The government and other relevant authorities like NAFDAC, Standard Organisation of Nigeria and the Pharmaceutical Council must pay attention to certification and regulatory processes in order to ensure that there are no delays in the pharmaceutical chain. Moreover, to avoid hindrances to people's ability to access the medicines they need in a timely manner. Furthermore, it is also important to understand that storing medicines for a long time also

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<sup>512</sup> PM news.2013, march.19th "Doctors Worry Over Fake Anti-Malaria Drugs" PM news online. Available at: <http://www.pmnewsnigeria.com/2013/03/19/doctors-worry-over-fake-anti-malaria-drugs/> accessed: January 16<sup>th</sup>, 2015.

<sup>513</sup> Ibid.

<sup>514</sup> Obuaku C., 2014. Field data: The Nigerian healthcare system: A study of access to affordable essential medicines and healthcare.

(inspection delays) adds to a reduction in its shelf life. As the medicines / consignment travels from the manufacturer to the importers, importers to exporters, wholesalers, distributors/ suppliers and then to the local pharmacy store or other retail outlets, every delay reduces the shelf life of the medicines. Besides, unfavourable environmental temperature also affects the medicines. Harsh weather conditions affect the shelf life of most pharmaceuticals and reduce their potency by increasing the level of toxicity or making them expire fast.

For instance, a visit to some medicines outlets in Abuja and Kaduna revealed that over 40 per cent of the medicines on the shelf were expired but rather than dispose of them, the sellers reprinted the packets and sometimes re-label. Also, most of the medicines outlets complained that by the time the medicines get to them, they are close to expiry dates and in order to maximise profit, they rebrand and sell to unsuspecting patients. Perhaps, this trend may have contributed to the high case of drug resistance in Nigeria. Bearing these in mind, the medicines regulatory authority in Nigeria and other stakeholders have to ensure that as medicines await inspection, they are properly stored of under suitable conditions in order to limit contamination, damage wastage of scarce resources, and preventable deaths from toxic medicines.

In all, it can be proposed that pricing of medicines in Nigeria is largely determined by the regulatory process. Currently, there is no consistent statistics or study on the link between pricing and regulatory processes. However, interviews with distributors in Abuja, Kaduna and Nassarawa states indicated that there was a high rate of incidence of high mark-ups and ad ons as a result of the capital intensive nature of the medicines certification / regulatory process. Most importers and suppliers complained about the arduous nature of medicines registration process. While others also bemoaned the fact that going through the whole process is draining, physically and financially, hence, each member of the pharmaceutical supply chain calculates and adds to their profit margin and this builds up to the final

consumer – the patients. Consequently, these markups influence and determine the high cost of medicines in Nigeria.

It is well established that delays causes medicines to deteriorate and delays treatments for most health conditions. Yet, it is not clear whether the delays in registration causes importers to increase the prices of medicines- most importers and distributors pay so much to bring in the medicines in the first place. This study collected and analysed data on the procurement, supply, distribution and regulation processes of essential medicines in Nigeria in order to find out which way the causation (factors of insufficient access to medicine) flows. Do these processes contribute directly and indirectly to low access to medicines? Data indicated that they did and here is how;

Prices of medicines prices (same product) from the same manufacturers varied across the three states. These disparities were also determined by location. For instance, medicine prices for the same product varied across private pharmacies and stores in Abuja. In some stores located at zone 3, Piccan, a teething medication for babies cost ₦2800.00, while it cost ₦2200.00 in Utako district, within the same Abuja. Whereas in Keffi and Akwanga, the same medicines were either unavailable or more expensive

While essential medicines are meant for everyone and should be available in the right dosage at all times in every primary health facility, most innovator brands are considered ‘elite’ medicines in Nigeria and are not available in most public healthcare facilities. Besides, if they are found in private facilities, it is usually at an exorbitant price. This is because those medicines even though essential, are very expensive and only the rich can afford them. When we traced and tried to find out the reason for these price variations it was discovered that prices were fixed at the distributors / suppliers discretion, subject to the hurdles the importer

faced during the registration / certification process (these include transportation, customs clearance, registration etc.).

All these gaps in pricing and low availability of medicines in certain locations result from lack of checks and balances, slow information management system, bureaucracy and logistics challenges, overlapping responsibilities in the procurement and distribution processes, and the lack of a medicines supervisory committee to monitor the effective distribution and supply of essential medicines to primary facilities.

Access to essential medicines in Abuja, Nassarawa and Kaduna states is hindered by a lot of supply side challenges such as selective distribution. Selective distribution is a situation where a distributor / supplier driven by high profit margin, supplies to a certain group of retailers who can afford the high markups and ad ons'. The result is that this act of selective distribution has caused uneven availability of essential medicine across different geographical locations. Backlogs and inconsistencies in the supply chain seems to affect Public facilities more since most essential medicines are either free to pregnant women / children under five years and subsidised for other users. A bottleneck in distribution reduces access to quality and affordable medicines to patients and can lead to preventable deaths. Furthermore, the absence of a medicine supply / delivery monitoring unit to supervise supply and deliveries to primary facilities worsens the matter. Above and beyond, where medicines are available (typically in private medicine stores), most poor people are unable to pay for these medicines and this ultimately translates to inability to access medical care.

With forty four per cent of the entire global pharmaceutical market shares, the United States of America is currently dominating the medicines market, followed by Japan and other European countries. When it comes to medicines importation into Nigeria, China, India and the European countries dominate. In terms of returns, the collective values of the top twenty

pharmaceutical companies total US\$ 378 billion, which represents over sixty per cent of the whole international pharmaceutical market and no Nigerian company is listed alongside the top pharmacy companies. With a growing population which is currently estimated at 160 million, Nigeria has no market share in terms of diagnostics or cosmetics, and only generates an insignificant percentage of revenues from the international pharmaceutical market.

In order to control market forces and monopoly (which are the greatest determinants of commodity prices including pharmaceuticals) the Nigerian government needs to provide incentives for the production of generic alternatives of innovator brands, as well as adopt the same model used by the Philippines government to control market prices and compel every company to sell essential medicines at the same price irrespective of the brand.

The high cost of medicines in Nigeria currently hinders access to life saving medicines and this in turn has a ripple effect- leads to irrational use of medicines which further leads to overdose or ingestion of cheap and substandard medicines that could ultimately lead to preventable deaths. Thus, in order to improve access to medicines by eliminating all forms of geographical availability and affordability challenge, the Nigerian government in collaboration with NAFDAC and the pharmaceutical industry has to build local capacities for medicine production; impose a uniform price for all brands of commonly used medicines such as antibiotics, anti malarialas, multi vitamins and paediatrics and strengthen NAFDACs capacity for timely regulation of medicine by increasing its physical and human resources.

#### **ii. National lists of essential medical products:**

The world health organisation has a list of medical products / diagnostics which are considered essential and are expected to be in the right quality and dosage at all times within every primary healthcare facility. The essential medical products list is further divided into two; model list of essential medicines for children and list of adult medicines. In addition to

the essential medicines list, there has to be national diagnostic and treatment protocols coupled with standardized equipment per levels of care, to guide procurement, reimbursement and training.

The WHO essential medicines model list is intended for use for children up to 12 years of age. While the main list presents a list of minimum medicine needs for a primary health-care facility, it contains the most effective, safe and cost-effective medicines for priority conditions. Priority conditions are selected on the basis of current and estimated future public health relevance, and potential for safe and cost effective treatment. The corresponding list presents essential medicines for priority diseases, for which specialized diagnostic or monitoring facilities, and/or specialist medical care, and/or specialist training are needed. Studies<sup>515</sup> have shown that most bio medical health personnel in Nigeria are aware of the existence of essential medicines list or drug formulary, but hardly use it as a guide for prescription. Rather, they rely on information from pharmaceutical companies sale representatives and medicine advertisements in pharmaceutical or medicinal journals, which to a large extent cannot be relied upon for accurate medicine information and prescription pattern.

In addition, Oshikoya et al observed that an assessment of most national and pan African pharmaceutical journals revealed the existence of information gap with regards to correct paediatrics prescription based on WHO standards<sup>516</sup>. The essence of adopting the WHO essential medicines model list is to ensure safe prescription and rational use within

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<sup>515</sup> Akande TM, Aderibigbe SA. (2007) Influence of drug promotion on prescribing habits of doctors in a teaching hospital. *Afr J Med Med Sci* 2007;36:207-11. [PUBMED]

<sup>516</sup> Oshikoya KA, Senbanjo IO, Soipe A. (2009) Adequacy of pharmacological information provided in pharmaceutical drug advertisements in African medical journals. *Pharm Pract* 2009;7:100-7

countries<sup>517</sup>. However, if medical personnel do not have the right information regarding the medicines he intends to prescribe for a patient, how can one guarantee rational use of those medicines?

The concept of essential medicines has been in existence since the Alma Ata declaration when the first model list was published by the WHO. Having existed for close to 38 years, it has served as a guide for right use of essential medicines and has remained one of the most important components of access to healthcare. The WHO essential medicines model list has been adopted by many countries that either uses it as a selection guide or a model for the publication of their national essential medicines list.

Among other reasons, the principle behind having an essential medicines list in Nigeria is to: Limit the number of medicines deployed in the health care system; create opportunities for the delivery of concise, accurate and complete information on available medicines, as selected and published on the essential medicines list; to improve prescribers knowledge of the pharmacological properties of recommended medicines- therefore improve medicines quality; and, to improve rational use of medicines across all sectors of the health care system through effective monitoring<sup>518</sup>

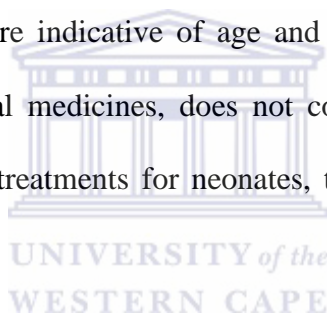
Nigeria adopted and published its first essential medicines list in 1989. The list was revised in 1991 after two years. In 1996, after five years, the third revision was published. After seven years, the fourth revision was published in 2003 with some major changes. Most of the changes and additions included treatments for HIV / AIDs, TB, malaria and integrated management of childhood illnesses. Some medicines, formulations and dosage forms of new internationally accepted names for certain medications were also added to the fourth revision.

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<sup>517</sup> Beggs SA, Cranswick NE, Reed MD. (2005) Improving drug use for children in the developing world. Arch Dis Child 2005;90:1091-3

<sup>518</sup> Professor Ibrahim Abdu-Aguye, Chairman, National Drug Formulary and Essential Drugs Review Committee 2003 at the launch of the Essential Drugs List - Fourth Revision 2003 - Federal Republic of Nigeria

In 2010, after another seven years, the fifth and most recent revision was published with 322 medicines listed (includes vaccines and other oral / treatment formulations). Perhaps a major difference between the Nigerian essential medicines list and that of the WHO is the fact that it did not lay emphasis on paediatrics<sup>519</sup>. The fifth revision did not specify appropriate dosage differentiation for children by age. Secondly, the list for children was not separated from the adults'. Although the WHO at some point did integrate the children's list into adults, it still maintained a separate list for children for the purpose of referrals. The WHO introduced paediatric essential medicines list in 2007 and by 2011, the list had undergone its third revision and contained 269 medicines. By 2013, the list<sup>520</sup> was revised again for the fourth time and now includes weight and age restrictions. The WHO essential medicines list for children contains symbols that are indicative of age and weight restrictions. Whereas, the Nigerian national list of essential medicines, does not contain those. Although the WHO model list for children contains treatments for neonates, the Nigerian list does not contain that.



What's more, Oshikoya and Senbanjo observed that notwithstanding over a hundred listing of medicines for children in the WHO model list, the Nigerian national list of essential medicines does not provide directives on the use of ibuprofen, caffeine, prostaglandin E and surfactant for neonatal care. In addition, the Nigerian essential medicines list does not contain

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<sup>519</sup> See ; WHO model list of essential medicines for children. 2 nd ed, March 2010. Available from: [http://www.who.int/medicines/publications/essentialmedicines/Updated\\_second\\_children\\_list\\_en.pdf](http://www.who.int/medicines/publications/essentialmedicines/Updated_second_children_list_en.pdf) [last accessed on 2014, September.

<sup>520</sup> WHO Model List of Essential Medicines for Children 4th list (April 2013) available from : of <http://www.who.int/medicines/publications/essentialmedicines/en/> accessed 22<sup>nd</sup> January 2015.



innovative antibiotics and antiemetic medicines for children such as an anti-biotic known as ‘fourth generation cephalosporins-imipenem<sup>521</sup>

Furthermore, apart from TB, HIV/AIDS and Malaria, the revised Nigerian Essential Medicines List of 2010 does not provide a broad treatment of diseases (orphan diseases and oncology) as well as rational variations of medicines for the treatment of special conditions. Another key observation is that the fifth revision does not contain traditional medicines. Presently, the number of traditional medicines / alternative therapy endorsed and registered by NAFDAC has increased significantly. And, one would have thought that given the prominent role traditional medicine plays within the Nigerian healthcare system, herbal medicines and alternative / complementary therapies would have been included in the national essential medicines list. The WHO essential medicines model list only serves as a guide to rational selection. There are no stringent rules to it. Every country has the right to decide what is listed and what should not be listed.

Unlike in the formative years, essential medicine selection is now evidence based. Countries select medicines whose efficacy have been tested and proven. Therefore, there is need for the Nigerian government to include lab tested traditional medicines for the treatment of common diseases. With the ease of access to traditional medicines by the average Nigerian and the high cost of orthodox essential medicine, the government and other stakeholders can improve access to medicines by including traditional medicines to the next revision of the national essential medicines list.

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<sup>521</sup> Oshikoya. K.A., Senbanjo I.O., (2010). Providing safe medicines for children in Nigeria: The impediments and remedies. *Annals of African Medicine*, Vol. 9, No. 4, October-December, 2010, pp. 203-212 *Annals of African Medicine Society* .ISSN: 1596-3519

On average, healthcare spending in Nigeria is very high compared to other developing countries, since a high number of people have to pay out of pocket for their healthcare needs. The high healthcare expenditure in Nigeria is further compounded by the fact that the healthcare system is overstretched and cannot adequately cater for the health care needs of the growing population. Majority of the people do not have timely access to the medicines they need and often times, in the right dosage. The Nigerian government has to focus on new strategies that would help in improving medicines access to its growing population without inducing poverty as a result of the low purchasing power of many poor people.

An efficient essential medicines policy / system is supposed to improve the geographical / physical availability; accessibility, affordability, quality and rational use of medicines within a country. The essential medicines system in Nigeria has to fulfil its mandate; the list has to play its (significant) role in ensuring improved access to medicines by guaranteeing that supply chain stakeholders in the pharmaceutical sector, do not maximise profit at the expense of patients. In the preceding section, the Nigerian government was advised to adopt the Philippines' model in order to guard against profiteering by supply and distribution companies. In the same vein, the Nigerian government has to cut the profit link between health organizations, bio medical personnel and medicines, reasons being that most physicians deliberately prescribe expensive medicines to patients in order to maximise profits from reselling such medicines

A typical example of essential medicines price reduction is that of the United Arab Emirates<sup>522</sup>. In UAE, the ministry of health reduced a substantial amount of approximately fifty five to sixty per cent in a list of two hundred and eighty (280) essential medicines at its fifth price subsidising initiative which would be effective from February 2015. The price

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<sup>522</sup> Al Nisr Publishing LLC. 2015, January 25<sup>th</sup> "Prices of 280 essential medicines slashed "Gulf news online Available at: <https://en-maktoob.news.yahoo.com/prices-280-essential-medicines-slashed-043700563.html> accessed: 26<sup>th</sup> January, 2015.

reduction of two hundred and eight essential medicines was done in collaboration with UAE ministry of health officials, international pharmaceutical companies and their local agents - lowered the prices of medicines by sixty to sixty five percent.

Prior to the 2015 medicines price reduction, the UAE ministry of health has had previous reduction initiatives since July 2011. The past initiatives led to a stable decline in medicines prices and further resulted in the provision of improved and affordable health management to citizens, particularly in the areas of neurological, viral and lifestyle diseases such as high cholesterol level, obesity, hypertension and diabetes. The price reduction covers a collection of medicines that comprise herbal, orthodox or bio medicine as well as organic food supplements. Basically, it would reduce the cost of medicines for over seventy per cent of the UAE citizens who pay out of pocket for the medicines they need.

In furtherance of the price reduction initiative, the country also set up the right legislations / enforcement mechanisms that will ensure compliance by all the two thousand two hundred (2200) private pharmacies across the UAE. As a part of the developing strategic partnership between the healthcare sector and the local and international pharmaceutical companies, the essential medicines price reduction in the UAE is intended to provide affordable health care to all citizens irrespective of class and social status. Besides, it also gives the UAE a competitive advantage in medicine pricing among all countries in the gulf.

In the same way, the Nigerian government can negotiate with pharmaceutical companies for a reduction in the price of a number of essential medicines. The negotiation process can start with generics then gradually progress to international pharmaceutical countries and their authorised representatives in the country. The UAE took into account the fact that over 75 % of its citizens pay for medicines out of pocket. Likewise the Nigerian government can do same and ensure that in the absence of a social security and affordable / functional medical

insurance scheme, medicines prices are reduced by at least fifty percent in order to reduce the number of preventable deaths. This is where accurate data and statistics come in. If the Nigerian government has an accurate record and statistics of the number of deaths and reasons for those deaths, perhaps it would point towards the commonest causes of deaths in the country (with regards to shortage of medicines ) and also help in directing policy actions towards improving access to medicines and healthcare for all Nigerians.

The essential medicines policy of Nigeria requires that public primary health care facilities can only procure and use selected essential medicines on the national List. Whereas, private facilities may choose to stock medicines that are not listed in the essential medicines list but prescribed in the national drug formulary. Also, every physician and medical health personnel are expected to prescribe medicines based on the standard treatment guide. Then again, in reality, although most public health facilities obey these directives, they have formed a habit of advising patients on where to obtain medicines (often in a private pharmacy or clinic and are expensive) that are not available at the public facility. Therefore, if and when the government establishes a partnership with the pharmaceutical companies that would aid reduction in medicines price, there has to be an enforcement mechanism that would compel all pharmacies (public / private) to comply with the new price reduction initiative. By ensuring that the price reduction is effected in both public and private pharmacies, the government would have guaranteed that health care personnel do not steal subsidized medicines from public facilities for sale at their own medicines stores.

It is over five years since the Nigerian essential medicines list was updated. And this is in spite of the emergence of new medicines, formulations, diagnostics, innovative therapies and vaccines. The essential medicine list and standard treatment guide remains the same and has not been revised to accommodate these new changes. Ideally, the essential medicines list ought to be reviewed and updated every two years ( as demonstrated by the WHO) in order

to accommodate changes in global health, tackle disease burden / prevalence, and include new medicines as well as latest innovations in the pharmaceutical sector.

Presently, Nigeria is counted as one of the major importers of pharmaceuticals from China and India. Besides, although a few indigenous companies are known to manufacture generics, a wide gap still exists with regards to a large number of Nigerians not being able to access essential medicines. It is alleged that the selection process of essential medicines causes delay in the revision of the list due to confusion over the inclusion of new medicines and the politicization of the selection group. If the selection group could meet frequently and ensure that medicines are included in the list based on disease prevalence (not because of the manufacturer or importer) it would reduce the rate of doctors prescribing medicines that are not listed in the essential medicine list. Also, it would limit irrational use of medicines.

On the reverse side, a closer look at the dynamics of the Nigerian pharmaceutical industry shows that the national essential medicine list has limited medicine research and development prospects in the country, given that sponsors now look beyond the market potential of new pharmaceuticals, rather, they are more concerned about their products being excluded from the essential medicines list. This concern prompts them into lobbying and paying lots of money to have their products included in the national drug formulary / essential medicines list. Adding a particular kind of medicine to the essential medicines list does not guarantee its availability and affordability (the efficiency of procurement, distribution and supply) at all primary healthcare facilities<sup>523</sup>. Secondly, inclusion in the list does not guarantee rational use, efficacy, quality and accessibility. Rather, the Nigerian government and pharmaceutical industry have to focus on developing new medicines and pharmaceutical / health technologies; using existing medical and information technologies and changes within

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<sup>523</sup> Hutchings J, Neroutsos K, Donnelly K. (2010) Making the list: The role of essential medicines lists in reproductive health. *Int Perspect Sex Reprod Health*. 2010;36:205–8.

procurement and delivery systems in an innovative way; introducing and implementing new policies and funding strategies to improve access to medicines.

For instance, one of the latest innovations towards ensuring greater and timely access to medicines and health technology is the improvement of the meningitis-A vaccine by an Indian pharmaceutical company<sup>524</sup>. Every year, over two hundred thousand people are affected by meningitis in sub Saharan Africa. Worse still, over twenty thousand to twenty five thousand persons die annually from the disease. Thus, this innovation has been referred to as a game changer in meningitis control, particularly in rural areas where access to electricity and cold storage is inadequate. The ability to ‘heat stabilize the vaccine by freeze drying’ enables it to be used in every climate and under cold or hot weather conditions. The meningitis vaccine was made heat stable through freeze drying by the serum Institute, an Indian vaccine company. This innovative way of preserving the vaccine in spite of harsh weather conditions, enables the vaccine to retain its potency outside of cold storage environments and also lengthens delivery time<sup>525</sup>.

In discussing access to essential medicines in Nigeria, one cannot help but mention the role of patent laws - the TRIPs (Trade Regulations on Intellectual Property) agreement and its impact on access to essential medicines. The diagram below gives an illustration of a typical medicines market and how each brand is affected by patent laws.

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<sup>524</sup> Prasad R., 2015 January 15<sup>th</sup> “ Meningitis: Indian Vaccine will protect Infants too” The Hindu online newspaper. Available at <http://www.thehindu.com/sci-tech/science/meningitis-indian-vaccine-will-protect-infants-also/article6789358.ece#> accessed 26<sup>th</sup> January 2015

<sup>525</sup> Ibid.

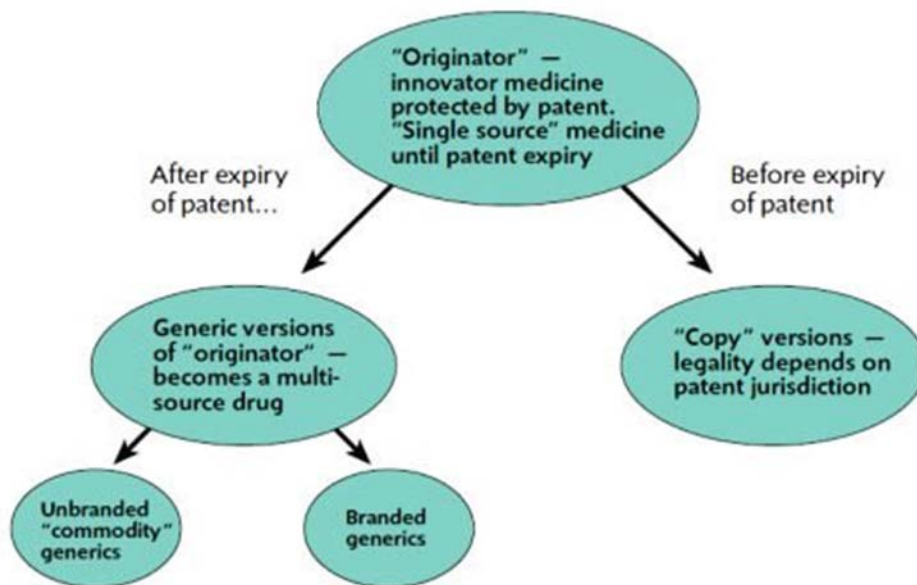


Figure 1.

Source: World health organization

[http://www.who.int/profiles\\_information/images/0/0b/Major\\_components\\_of\\_the\\_medicines\\_market.jpg](http://www.who.int/profiles_information/images/0/0b/Major_components_of_the_medicines_market.jpg) accessed: December 23<sup>rd</sup>, 2014.

The diagram above shows that originator medicines are usually the single source of medicines for most ailments and usually protected by patent laws which prevents other pharmaceutical companies from producing the generic version of that particular medicine until the patent expires. Furthermore, whilst the medicine is patented and cannot be reproduced in most countries, some countries may decide to produce the ‘copy’ version of that same medicine depending on whether the patent law is effective in the country where the medicine is to be produced. On the other hand, at the expiration of a patent, generic or local versions of an originator brand medicine can then be produced locally either as an unbranded or a branded generic.

Although the patent laws vs originator and generic brand debate is still ongoing, the implication is that the existence of a patent law prohibiting the production of generics until

the expiry of an originator brand patent, has limited and reduced access to medicines in most countries<sup>526</sup>. The TRIPs agreement provides legal backing for exclusive ownerships of patent rights over medicines research and production by pharmaceutical companies and countries. It has contributed to increase in medicines prices by protecting intellectual properties and giving exclusive rights of production which invariably enables patent holders to determine the price of any patented medicines at their discretion until the expiration of such patent.

The TRIPs agreement has contributed to the high cost of some medicines (TB, HIV, Cancer treatments) in Nigeria due to over reliance on foreign pharmaceuticals and the low production capacity of local firms. In addition, the fact that patent laws are not reviewed periodically to accommodate flexibilities in international laws has also impacted negatively on the country. Failure to endorse new patent legislations or revise old laws has led to the weak capacity of local industries since they lack the capacity to compete against big pharmaceutical companies in terms of having production rights and possessing the ability to produce highly demanded and innovative treatments. The government can help in protecting domestic companies through the introduction of compulsory licencing, parallel importation to aid local production of generic medicines as well as encourage foreign direct investment in the pharmaceutical industry.

In Nigeria, for instance the WHO only approved local production of HIV and TB medicines in 2014. Before that approval, a lot of people living with AIDs could not afford their treatments at private facilities whenever there was stock out of ARVs at public facilities. Although generic medicines in Nigeria are a lot more expensive than in most developing countries, if the Nigerian government builds the capacity of local companies, medicines prices would naturally reduce. For instance, most indigenous companies lack the capacity to

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<sup>526</sup> Iyortyer, H., (2009). The Quest For access to Medicines and the Effects of the Trips Agreement: An Appraisal of the Nigerian Situation Balanced against Other States., Durham theses, Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/282/>



produce international quality medicines and cannot engage in R and D and this leads to over dependence on imported pharmaceuticals which further drives home the harsh realities of the TRIPs agreement by increasing the cost of most innovator medicines that do not have generic substitutes and may not have for a long until the patent expires.

The issues surrounding access to medicines are complex and require multifaceted approaches. And, one cannot ignore the complexities surrounding the quest to improve access to medicines in Nigeria by over emphasising the salient aspects of the issue. Rather, there is need to engage the minor aspects that may have been ignored and possibly have contributed to widening the access gap.

One of the minor issues affecting the Nigeria and the Pharmaceutical sector is the unwillingness to learn innovative ways of doing things or revise and reform old practices. Potentially, innovative practices often lead to better impacts and outcomes. However, there is often a price to be paid. In as much as innovative technologies and new pharmaceuticals help in improving access to essential medicines, they have been cited as major contributors to the rising cost of healthcare<sup>527</sup>. At the same time, most poor patients are unable to access these expensive pharmaceuticals in Nigeria due to a number of factors that seem to cut across most developing countries such as; patent laws, high cost of medicines, geographical accessibility (distance to the location of high tech pharmaceuticals), where there is medical insurance coverage, the benefit might not cover the cost of those equipment and other high tech related / required treatments, physician prescription preference, or variances between obtainable essential medicines and consumer demand.

The challenges of essential medicines in Nigeria have not received much attention, consequently, they are not properly documented. For instance, there is limited data on trends

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<sup>527</sup> OECD. (2010)Value for money in health spending. Paris: OECD Health Division.

in access to medicines, pricing, procurement process and developments in essential medicines scheme. The ministry of health is not quite transparent with regards to publishing or publicizing spending related to the purchase of essential medicines and pharmaceuticals across states in Nigeria- There is no record of the percentage of the total health budget allocation or fraction of the national GDP that goes to pharmaceuticals. Furthermore, essential medicines selection process is not made public and not made readily available on request. All these shortcomings in the Nigerian essential medicines agenda point towards an urgent need for restructurings.

**iii. A supply and distribution system to ensure universal access to essential medical products and health technologies through public - private channels, with focus on the poor and disadvantaged. A national medical products availability and price monitoring system.**

An efficient medicines supply and distribution system is such that ensures the timely delivery of pharmaceuticals to the people who need it, where and when they need them. A system that ensures that vulnerable people such as children, (girls in particular) women (mostly pregnant and breastfeeding mothers) and disabled people are able to access medicine because there is quality leadership; the kind of leadership that ensures smooth coordination of every key actor for the timely delivery of medicines and health supplies to consumers through designated facilities at the right time.

Within the Nigerian healthcare system, the responsibility of distributing pharmaceuticals falls directly under the federal ministry of health, in partnership with a number of private enterprises. Possibly, a closer look at global supply chain models could give insight into the kind of medicine procurement and supply model practiced by Nigeria and how it has fared so far. The following are the various models used for the distribution and supply of medicines

and other pharmaceutical products ; the Central Medical Store – CMS; autonomous supply model; the direct delivery model; the prime-vendor model; the wholly private medicines purchase, supply and distribution models<sup>528</sup>.

The Central Medical Store -CMS system which is being used by Nigeria is a model where medicine procurement, financing and distribution are managed by government through its agencies. In terms of financing under the CMS model, donor agencies and international development organizations often fund medicines procurement under special schemes such as the Drug Revolving Fund- DRF. Although, in Nigeria, little has been said or disclosed about donor agencies financial support for increasing access to medicine. The major strength of the CMS system is that it utilizes bulk purchase in order to lower cost. Whereas, while it lowers medicines cost, at the same time it presents a very rigid procedure where healthcare facilities struggle to align and also get medical supplies. Here, medicines are pooled together at the central store and bureaucratic processes take effect and tend to delay medicines delivery to most facilities.

The direct delivery model works by suppliers applying directly to government tenders for medicines supply. Here, the government agents bid for medicines and other pharmaceuticals openly from the pharmaceutical companies who then supply directly to healthcare facilities where they are utilized. The basic advantage of this model is that the government does not incur transportation and storage costs. Rather, these costs are borne by the suppliers. In addition, this system has been said to lessen medicines price and increase affordability since most factors in the supply chain that would hitherto have increased procurement costs had been cut off. Also, when well supervised, this system has been known to reduce the influx of

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<sup>528</sup> Cohen, J.C., Mrazek, M.F. and Hawkins, L. (2007), "Corruption and Pharmaceuticals: Strengthening Good Governance to Improve Access" in Campos, J.E. and Pradhan, S. (Eds.), *The Many Faces of Corruption: Tracking Vulnerabilities at the Sector Level*, The World Bank, Washington, D.C., pp. 29-62.

counterfeit medicines in the health system since the authorities know whom (pharmaceutical companies who supplied the medicines) to hold responsible for such.

In the prime-vendor model, the government medicines procurement office usually asks the public to bid for two types of tender and contracts: tender by medicines manufacturers and the one for prime vendors. While the pharmaceutical company submits one proposal, the second tender is submitted by a prime vendor for medicines supply to public stores and healthcare facilities. This process demands that the prime vendor is responsible for sufficient and steady supply of pharmaceuticals to all healthcare facilities.

The independent or semi-autonomous supply agency system is a flexible process which permits medicine purchase in batches. Though, the offside is its tendency to increase medicines cost. Although most healthcare facilities would often experience stock outs as a result of procuring medicines in bits, yet, it would ensure medicines do not expire on the shelves. This model is currently being used by most poor countries who cannot afford a once off purchase of medicines due to financial constraints and limited resources.

The fully private medicines purchase, distribution and supply system is a private model established by investors in order to maximise profit. Unlike the other models where the government can easily monitor and regulate the supply chains, in so doing, control the proliferation of fake medicines. Here, regulation is quite challenging since the sources of medicines are not well known and the quality and efficacy of medicines cannot be guaranteed.

Although this system of private medicines distribution previously flourished in developing countries, it is beginning to fizzle out due to advocacy, better awareness about the implications of fake medicines, and greater government participation and involvement in medicines distribution and supply. While the CMS model has existed in Nigeria for a long

time, yet, this model held sway and typified the Nigerian medicines industry before the establishment of NAFDAC<sup>529</sup>. Prior to the creation of NAFDAC, the Nigerian pharmaceutical industry was infiltrated by drug lords, syndicates and cabals who manipulated the system and threw their weight around. These groups of private traders influenced the system and flouted regulations guiding importation and distribution to the extent that Nigeria became known as the centre of fake medicines<sup>530</sup>. Even though most countries claim the adoption of one model, usually, it is a blend of models for efficient medicines distribution. The choice of what distribution model to adopt is usually determined by the nature of a country's health system. For instance, a country with a higher number of private clinics, would adopt suitable models while one with a high number of public facilities would adopt different models to suit the peculiar needs of its own health system.

While most countries have evolved and introduced efficient ways of distributing and supplying medicines according to the demonstrated healthcare needs of their citizens, Nigeria is still stuck with the traditional method of using a CMS- Central medicines Store and still experimenting with unproven models.

The medicines distribution and supply system in Nigeria comes directly under the portfolio of the National Agency for Food and Drug Administration and Control –NAFDAC. And as the agency responsible for controlling and regulating the manufacture, exportation, importation, advertisement, distribution, sale and use of food, medicines, pharmaceuticals / diagnostics, cosmetics, chemicals detergents and bottled water- NAFDAC has made efforts since 1999 to reform the medicines distribution system in Nigeria. Part of its strategic efforts was the introduction of the Zonal Drug Distribution Centres – ZDDC which was a combination of a distribution process borrowed from Sweden (the model was known as

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<sup>529</sup> Okoli, S. (2000). Pharma Industry in Distress” *Pharmanews*. 22(3):1.

<sup>530</sup> Akunyili, D.,(2004), “The NAFDAC Story”, NAFDAC Consumer Safety Bulletin, Vol. 2 No.1, pp. 10-18.

Apoteket AB) and merged with various models out of which the Cameroonian was the most prominent and reflective of the peculiarity of the Nigerian health system challenge and demands<sup>531</sup>.

ZDDC failed as a result of unyielding and uncooperative stakeholders in the pharmaceutical sector and lack of legal backing from the Nigerian legislature. When the ZDDC model did not work out, a few years later, two medicines distribution models known as the 'Unified Drug Revolving Fund' and the Essential Pharmaceuticals limited were introduced as supplements to the CMS and the first model became known as the CMS-UDRF and became operative in Ekiti state while the second model known as EPL took off in Benue state. These two initiatives are a combination of Public Private Partnerships-PPP with the sole aim of accomplishing a well-organized medicines procurement and distribution to the final user, thereby improving access to medicines in Nigeria<sup>532</sup>.

Granting it is not a new arrangement, the DRF had been tried by most states in Nigeria under various platforms such as; the Centralised State Controlled Schemes, Fifty Percent Cost Recovery scheme and the Petroleum Trust Fund. Yet, due to low advocacy level, awareness and lack of sustainable strategies for expansion, the DRF system appears relatively new. Other factors that contributed to the limited impact of the DRF at inception are: shortage of human resources, low access to medicines for the poorest and most vulnerable as a result of the introduction of user fees, poor financing and logistics, politicization of the scheme, unnecessary governmental intrusion in the operation of the schemes and narrow capacity and prospects for duplicating the scheme in other states.

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<sup>531</sup>CMS-UDRF –PPP. 2008, Training Manual on "CMS-UDRF Mega Depot: Public-Private Partnership on Drug Management System", May 7, Central Medical Stores, University of Ado-Ekiti, Teaching Hospital Complex.

<sup>532</sup> Olaoye, E.O. and Soremekun, R., (2009), "Public-Private Partnership in Health Care Delivery: The Central Medical Stores-Unified Drug Revolving Fund (CMS-UDRF) Model in Ekiti State, Nigeria", in Oluwadare, C.T. and Ogundana, C.F. (eds.), Health Development in Nigeria: Trends, Issues and Prospects, Echo Press and Resources, Ibadan, pp. 157-200.

The Revolving Drug Fund –DRF initiative was established in Nigeria to strengthen medicines supply in each participating state. Other factors underpinning the establishment of the RDF are: the need to safeguard unconstrained distribution and supply of medicines and having a system where poor and vulnerable people such as women and children have access to quality medicines without compromising their purchasing power or getting poorer<sup>533</sup>.

Part of the gains of having a DRF system in a state is that it ensures regular supply of quality essential medicines at all levels of healthcare (primary and secondary). The steady supply of medicines further attracts patients and improves attendance to these facilities which ultimately leads to better health outcomes and good health for all. By 2007, a few states had rolled out the DRF scheme; states like Kaduna, Benue, Jigawa, Enugu, Ekiti, and Jigawa states. By 2008, more states had signed up for the DRF scheme, partly because of the lower markups on medicines procurement compared to the EPL<sup>534</sup>. The EPL adds a thirty percent profit margin to its medicines while the CMS-UDRF profit margin is determined by facility and does not exceed twenty percent.<sup>535</sup>

Theoretically, most countries adopt one distribution model but often combine that system with another procurement model depending on the type of healthcare financing (public or private). In Nigeria, it is the same. Just like the Nigerian healthcare is being financed through a public- private effort, similarly, the pharmaceutical distribution chain is also public and private. At present, although the CMS model exists correspondingly with the private-investors model, the private investor model has dominated the CMS which to a large extent has contributed to the high cost of medicines in Nigeria.

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<sup>533</sup> Partnership for Transforming Health Systems-Department for International Development (PATHS-DFID) 2007, Draft Report on EPL Operations Review, PATHS- DFID, Abuja.

<sup>534</sup> PATHs and DFID. (2007). Technical brief : Strengthening Sustainable Drug Supply Systems

<sup>535</sup> The CMS-UDRF calculates its profit margin thus ; five percent = plus an additional five percent as markup ; wholesale pharmacies pay ten per cent ; retail pharmacies pay ten to twenty percent while private hospitals/clinics pay fifteen to twenty percent.

As discussed in the previous paragraphs, medicines supply and distribution by private investors comes with its own disadvantage which is the desire to maximize profit by the investors. Sadly, this has played out in Nigeria and the government has done little or nothing by way of setting up market and price control policies to curb the excessive profiteering in the pharmaceutical industry, which currently limits people's access to life saving medicines at the right time. As private enterprises flock the Nigerian pharmaceutical sector, Fajemirokun<sup>536</sup> opined that in a situation where medicines retail licences are issued to people not by merit but by favouritism, the system is bound to be ruined, abused and infiltrated by incompetent people who do not have the requisite training, authority and experience.

Characteristically the Nigerian pharmaceutical supply chain functions without close monitoring. For instance, when medicines are procured by International agencies or other private companies, those vendors are charged with the responsibility of ensuring that the medicines and other medical products are delivered to the states. Sometimes, the federal CMS agents neglect the aspect of taking inventory of stocks at the port of clearance. Even though medicines clearance remain the exclusive responsibility of NAFDAC, it is assumed that the CMS might want to take inventory of quality, quantity and compliance with supply tender, in its capacity as the central medicines store. Oftentimes, oversight from federal CMS results in access denial to patients due to distributive delays and or compromised quality due to laxity in taking physical inventory of stock. There are times the Federal CMS takes virtual inventory of consignments. This should be discouraged and discontinued given the fact that virtual monitoring differs from physical supervision and might lead to omissions and a number of inadequacies which could cause other problems in the health system.

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<sup>536</sup> Fajemirokun, O. T. (2004), "Origin of Fake Drugs in Nigeria", in Atueyi, Ifeanyi (Ed.), Fake Drugs in Nigeria: Topical Issues and Facts you need to Know, Pharmanews Ltd, Ikeja, pp.37-45.



The problem with the CMS and the Nigerian medicines procurement and distribution chain is the fact that obtaining procurement documentation and clearance at the ports often delays consignments for a long period. And where waivers are needed, before such waivers are processed and the goods cleared, most consignments would have started showing signs of deterioration. Often times, when healthcare facilities experience stock outs, it is usually as a result of administrative lapses such as delay in clearing consignments at the ports or delay in disbursing funds for clearing of consignments. Some health officials at public health facilities revealed that most times, funds disbursed for special projects and clinical supplies are often stuck at the state ministries of health<sup>537</sup>.

Also, medicines and medical supplies are usually kept at the CMS storage for lengthy periods without any distribution. At other times, supplies are not accompanied by distribution lists at the federal, state, and LGA. In cases where supplies are accompanied by a distribution list, there have been cases where distributors are ignorant of what quantity to supply to each facility per time. This, again, is a function of administrative lapse and negligence of duty by those assigned to ensure smooth delivery of medicines to healthcare facilities

Although a 2007 study indicated that private medicines supply and distribution (includes sale of medicines and pharmaceuticals by vendors and authorised and unauthorised private facilities) offers cheap medicines, 2014 data has indicated otherwise. Most private retailers and medicines suppliers interviewed in Maitama, Wuse, Kado, gwarimpa, Dawaki, Akwanga, Lafia, keffi, Zangof kataf, Zaria and Kaduna South revealed that when calculating mark ups for a particular medicine, they take cognisance of transportation, storage, and human resources cost and these add to the cost of the medicine. Whereas, when interviewed, most out patients at public facilities revealed that medicines are relatively cheaper in public healthcare facilities. Moreover, if ever, when found in private facilities, cheap medicines are

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<sup>537</sup> Opcit PATHs (2007)

either nearing expiry dates, expired, newly introduced and not really accepted (prescribed by doctors )and or fake. Except in extreme cases where that particular medicine is not in high demand or the vendor of that particular medicine is resident overseas and not aware of market forces such as demand and supply ratio for such medicines. (PATHS, 2007:23).

The medicines supply process in Nigeria has demonstrated that potentially, the pharmaceuticals supply chain of any country has the tendency to increase the cost of medicines and cause access to medicines deficit if not well controlled and structured. While most households bear the utmost burden of health costs in Nigeria due to high rate of out of pocket healthcare expenses, which has been worsened by a poorly structured supply chain, the Nigerian government has not made efforts to ensure the constant availability and accessibility of essential medicines to its citizens through an effective supply chain reforms.

A 1988 global report from the WHO confirmed that a minimal proportion (twenty percent) of countries had good procurement, distribution and supply structures whereas the outstanding fraction (eighty percent) of the remaining countries did not have. More than two decades later, the distribution practices of most countries (Nigeria in particular) has remained the same except for occasional programs which serve as temporary supplements.

The Nigerian budgetary allocation for healthcare is quite poor compared to the WHO recommended proportion and as a result, healthcare services delivery is poor. It is difficult to conclude or establish a link between low health funding in Nigeria and limited access to quality and affordable medicines, given the fact that there is no record of how much the government spends on medicines procurement. Equally, one can easily establish a link between the medicines distribution system and insufficient access to medicines in Nigeria. In Nigeria, medicines stock out (caused by a clumsy supply system) has been the second cause of insufficient access to essential medicines, after affordability constraints.

Studies conducted in Abuja, Nassarawa and Kaduna states revealed that, on average, 80% of public healthcare facilities had significant medicines stock out in 2014. Secondly, two third of public healthcare facilities in Nassarawa state and one third of the out patients who were interviewed attested to significant medicines stock out in the past, in these facilities. Only six percent of primary healthcare facilities (in the federal capital territory) had the most commonly used essential medicines in Nigeria. Most healthcare facilities (fifty six percent) in Kaduna and Nassarawa recorded a high stock out of antimalarials, salt water, TB medicines, antibiotics and paediatric medicines such as Vitamin A and vaccines. By the same token, medicines such as iron and other medicines used in the treatment of throat and respiratory tract infections were unavailable. Most facilities were completely out of stock and blamed it on poor monitoring principles, delayed supply /and late delivery.

A 2010 study by Olaoye<sup>538</sup> describes the Nigerian medicines supply procedure as the Achilles heel of the pharmaceutical sector and this has been confirmed by a recent study<sup>539</sup>. Before NAFDAC came into existence, the Nigerian Pharmaceutical sector was infiltrated by counterfeit medicines which were as a direct result of regulatory failure. However, years later, as the country consolidates the gains of a competent regulatory system (even though the country still battles a minimal incidence of fake malaria medicines) the challenge posed by the floppy distribution system mocks NAFDACs achievements. The constraint of access to quality and affordable essential medicines in Nigeria transcends the high cost of pharmaceuticals and diagnostics. It includes poor physical access (availability) which is direct fallout of a traditional procurement and uncoordinated supply chain.

As part of its effort to meet up with deadlines and fast-track improvement towards fulfilling Millennium development goals; four, five and six, the Nigerian government removed user

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<sup>538</sup> opcit

<sup>539</sup> Obuaku.C., 2014. Medicines distribution system in Nigeria. Unpublished

fees for reproductive health medicines (contraceptives) in all public healthcare facilities across the country. This initiative increased access to contraceptives and helped in promoting maternal health to a lot of households in Nigeria who purchase medicines and pay for treatments out of pocket. Even though plans are underway for the inclusion of other reproductive health supplies and essential medicines for women and children, uncertainty looms for a country that has project management, administration, information technology and data processing deficit.

Apart from noticeable gaps in the medicines distribution chain such as the fragmented nature of the zonal (state and local government areas) distribution process, the absence of innovative means of collecting, storing and analysing supply chain data has been the bane of Nigeria's essential medicines system. Similarly, inventory management in the medicines distribution chain in Nigeria is poor coupled with asymmetrical stock monitoring<sup>540</sup>.

The essence of having a medicine policy in every country is to ensure that citizens have timely access to quality and affordable medicines. And, in order to increase access to medicines globally, new medicines procurement and supply systems have emerged and being utilised by most countries to strengthen their health systems. Where new supply chain models are not adopted, the old practices are reformed and repositioned to flow with developing health systems demands and the emergence of new diseases. Improving access to medicine in Nigeria calls for advanced technical resolutions and application processes.

The application process further entails having thorough administrative reforms that would impact on all aspects of the supply chain ranging from tender, procurement, clearing, inventory, quality checks, planning, distribution (macro and micro levels), documentation,

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<sup>540</sup>Adelusi-Adeluyi, J. (2000). Drug Distribution: Challenges and effects on the Nigerian Society. Keynote address at the 73<sup>rd</sup> Annual National Conference of the Pharmaceutical Society of Nigeria held at Nicon Hilton Hotel, Abuja, 6th – 10th, November, 2000.

storage, transportation logistics, delivery coordination to rational use and prescription. Having technical solutions coupled with an effective administrative / implementation system could be likened to a storage tower or buttons<sup>541</sup> which are tied together and work with all aspects of the supply chain to produce results in the health system. This comparison implies that failure in one 'button' affects the effective functioning of the health system.

Medicines stock-outs and poor availability have been considered the commonest causes of health programs underperformance. For instance, in most states where the DRF scheme was introduced, facility level stock outs of almost sixty percent were recorded at the beginning of the program in 2003<sup>542</sup>. A disorganized supply chain can never be effective and would eventually result in stock-outs. If a country's pharmaceuticals supply chain falters, the effect on health may well be overwhelming<sup>543</sup>. A primary health care facility in Zaria often recorded high stock outs of health supplies such as glucose, band aids and cough syrups and this resulted in loss of confidence by patients and low patronage. In a secondary facility in Abuja, TB treatments were not available in December 2013, coupled with strike actions by health personnel and as a result, some patients died while others either transferred to private facilities / herbalists or went home to await death.

The role of Nigeria's in country supply chain is key to increasing access to essential medicines and ensuring medicines are affordable, therefore, cannot be over emphasised. One in every three facilities visited in Nassarawa and Kaduna states at the time of this study recorded high stock outs of ten out of twenty selected essential medicines on our list. While one out of every five facilities visited in Abuja had a significant availability of thirteen out of twenty selected essential medicines. Although sixty percent of the essential medicines on our

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<sup>541</sup> According to the Webster dictionary, a 'button' is -

<sup>542</sup> Erhun, W.O. (2000). A modified Bamako Initiative Drug Revolving Fund Scheme - Lessons from Nigeria. 11th International Social Pharmacy workshop, Kuopio, Finland. June 13 – 17, 2000.

<sup>543</sup> Greg Martin, TWIGH show " Health Systems part 1" [online]. Available at:

list of medicines were physically available at the time of the study, when interviewed, most patients complained about having to purchase same medicine, paediatric vitamin and anti-malarials at a high cost in private medicine outlets due to stock outs in public facilities.

The Nigerian health system has components that are considered core drivers of the health system. Every component is needed for a smooth running of the health system, no component is superior to the other. Having a functional healthcare system that delivers affordable health care services to people when and wherever they need it is a mark of innovation, planning, coordination and implementation. The health system however seems to be lacking some of the ingredients that is necessary for a smooth running healthcare system. Further than having shortage of well-trained healthcare personnel, though the country has a medicines policy, presently, the health system is unable to provide access to medicines and other health supplies to those who need them, where and when they need it and at an affordable price.

Every health system is driven by medicines - access to pharmaceuticals / diagnostics and shortage of it results in health system failure<sup>544</sup>. The peculiarity of the medicines situations in Abuja, Nassarawa and Kaduna states indicate that what these three states have in common are mostly; expired medicines due to lengthy storage period, the exorbitant rates of essential medicines which reduces demand; limits their physical availability and access, high stock outs at facility level and high demand of cheap medicines which leads to patronage of unauthorised medicines sellers and reinforced confidence in traditional medicines. A previous study<sup>545</sup> indicated that Out of pocket payment for medicines account for over 98% of total

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Ruxin J, Paluzzi P, Wilson Y, Tozan M, Kruk M, Teklehaimanot A.(2005) Emerging consensus in HIV/AIDS, Malaria, Tuberculosis, and access to essential medicines. *Lancet*. 2005;365 (9459):618–621.<sup>544</sup>

<sup>545</sup> Oluwabunwa, M. 2002. Health care delivery in Nigeria. Past Present and the future. *Nigerian Journal of Pharmacy*. 31:15-17.

health expenditure in Nigeria and this study has confirmed the validity of that data in Nassarawa, Abuja and Kaduna states.

At present, Nigeria does not have a national medical products availability and price monitoring system except the NHIS – National Health Insurance Scheme medicines prices list. In a situation where monitoring systems abound in Nigeria, they are often inactive and when active, their effectiveness is usually hindered by bureaucratic weaknesses and corruption. A direct result of not having effective medicines availability and price monitoring mechanism in Nigeria is the extensive urban- rural level disparity in terms of physical access and medicines prices which further leads to unequitable healthcare service delivery in certain locations within a particular state. As earlier mentioned, there is a significant variance in the cost of buying a paediatric antibiotic in certain locations within a particular state such as buying in Akwanga is slightly cheaper compared to buying same medication in Keffi or Lafia. That is, if the medicine is physically available.

Even though the national drug policy stipulates that there has to be a medicines monitoring and accountability mechanism, the reality is far from what is articulated in the policy document. The information system of the entire health system is spent and needs urgent attention. There is neither a demand side medicines availability monitoring nor a supply side accountability apparatus. There is paucity of data on medicines accountability and availability status across all levels (facilities) of healthcare except for the NHIS data base where available information is limited

Nigeria can learn from other countries regarding strengthening its health system, particularly increasing access to quality and affordable pharmaceuticals and diagnostics. A very good example of a recent health systems strengthening effort which has impacted positively with significant evidence is the Angolan SIAPS -Systems for Improved Access to Pharmaceuticals

and Services Program'. SIAPS was initiated in collaboration with a number of organizations who came in with various levels of expertise and roles such as: the US Agency for International Development USAID- funded the project while the Management Sciences for Health -MSH oversaw the project implementation in partnership with the national medicines procurement unit known as Central Procurement Agency for Medicines and Medical Supplies –CECOMA and other provincial units.

Having noticed the prevalence rate of malaria in the country, the program was initiated to manage malaria by increasing the availability of ACTs, RDTs, and Sulphadoxine-pyrimethamine –SP. Malaria intervention under the SIAPS was conducted in a number of ways such as *delivery support* ; where USAID funded commodities were received and distributed at all levels. *Capacity building*; training materials and other tools regarding medical warehousing and health commodities were developed and implemented. *Strategic Monitoring*; devices such as the End Use Verification -EUV as well as Procurement Plan and Monitoring Report for antimalarial products – PPMRM were introduced for regular updates on medicines procurement and supply chain management of health commodities. In addition, the program also put in place regular data collection and analysis tools on the availability of antimalarials at the provinces. Data is usually collected at the beginning of the month and mid-month; and contains records of stock delivery. That is, quantity of stock delivered by the central medical store and other suppliers. It also aids in distribution plans and stock replenishment for every province<sup>546</sup>.

Another example is the case of Liberia where the RBHS - REBUILDING BASIC HEALTH SERVICES initiative was introduced through the joint effort of the USAID and the Liberian health and social welfare ministry. In a bid to ensure that healthcare services are delivered to

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<sup>546</sup>Patrick G.,J., "Improving Supply Chain Management: Lessons From Angola" [online] Available online at : <http://www.msh.org/news-events/stories/improving-supply-chain-management-lessons-from-angola> accessed 30th January 2015



the people in an equitable and effective manner, a *performance based financing* division was introduced with the sole aim of encouraging health care services delivery through the creation of a reward programme where healthcare providers, resource persons and facilities are awarded incentives for attaining top performance targets<sup>547</sup>. Armed with an operations manual, the performance based financing division has successfully trained healthcare personnel, implemented and supervised incentives award in over two hundred and fifty healthcare facilities across twelve out of the fifteen counties in Liberia.

Delivering healthcare services in an equitable and effective manner is not a task that can be handled by the government alone or done in isolation. An effective healthcare delivery strategy must be sustainable; people centred and have to draw up responsibilities for all stakeholders. And those responsibilities in turn would require proper harmonization, organization and assimilation of all participants and components of the health system. In the same way, increasing access to medicines involves incorporating all components of the health system and harmonizing them in such a way that quality leadership, policies, finances, information systems and human resources for health would all team up to provide the needed health outcomes<sup>548</sup>.

According to Roberts and Reich<sup>549</sup> every aspect, actor and component of a health system has to be properly coordinated and integrated for operational delivery of essential medicines. In addition, Inez et al<sup>550</sup>, acclaimed that given the role of medicines in a health system, it would require the participation of all health system actors to ensure equitable delivery of medicines and health supplies. Reasons being that; health policies are needed to define and set the

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<sup>547</sup> Opcit . see; <http://www.msh.org/news-events/press-room/msh-case-studies-selected-as-part-of-usaid%E2%80%99s-top-ten-health-systems>

<sup>548</sup> Roberts M, Reich M. (2011) Pharmaceutical Reform: A Guide to Improving Performance and Equity. The World Bank, Washington DC; 2011

<sup>549</sup> *ibid*

<sup>550</sup> Inez Mikkelsen-Lopez, Peter C., Harun K., Conrad M., Graham R., and Don de S., (2013) Essential medicines in Tanzania: does the new delivery system improve supply and accountability? Online. Health Syst (Basingstoke). Feb 2014; 3(1): 74–81. Published online Nov 15, 2013. doi: 10.1057/hs.2013.14

agenda for the right kind of distribution and supply structures as well as processes. Next, there would be need to coordinate finances for the procurement of medicines; afterward, trained bio medical personnel and health workers would be needed to procure and deliver the pharmaceuticals; subsequently, health information systems -HISs would be required for the identification of prevalent diseases; and as a final point, governance is compulsory at every level to supervise and be answerable for every health systems actor as well as ensuring general availability and accountability of human and material resources within the system.

Medicines play a fundamental role in the performance of a health system<sup>551</sup> consequently, losses or limitations in the essential medicines progression are not only public health concerns, but are considered general indicator of the health systems ability to deliver quality and satisfactory health care. Likewise, shortage of medicines in the Nigerian health system signifies a weak health system where out of pocket expenditure on health does not necessarily guarantee satisfaction or good health outcome rather, has led to impoverishments for many.

The discrepancies in the medicines situation in Nigeria is such that even when majority of the population are paying out of pocket for their health expenditures, it does not guarantee that they will get the right medicine or treatment. Occasionally, where medicines are physically available and financially affordable, rational prescription could pose a challenge. For instance, during this study, most of the patients interviewed complained about paying for the same treatment thrice without achieving results. In these instances, who takes the blame for treatment failure? Other patients complained about being given the wrong treatment / medicine. Another example is that of a woman in a private pharmacy at in the FCT who complained that authorised personnel actually prescribed and dispensed cough syrup inappropriately for her six months old baby who was not given the right kind of medicine and dosage for her age. When the first treatment failed, the respondent took her ward to a

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different facility only to be told that the piriton expectorant was not suitable for the age of the child.

At present, most vulnerable people in Nigeria are excluded from treatment not out of choice, but due to prevailing circumstances. Most of these people live through inappropriate / irrational prescription, wrong and incomplete treatment, counterfeit medicines, high mortality, drug-resistant diseases, and additional penury after paying for health products. From the foregoing, it is evident that a free-for-all pharmaceuticals market with little government intervention can only lead to lopsided and irregular information that could generate perverse motivations for the sales of low quality, expired and unauthorised medicines.

There is information gap at every aspect and level of the supply chain, as a result of this knowledge deficit, consumers and patients suffer untold exploitation. The Nigerian government can respond to this data and information deficit by updating its data bases and ensuring that the medicines industry is properly regulated with the introduction of new and innovative supply chain systems; apply an extensive regulatory influence over the Nigerian pharmaceuticals market by influencing the performance of market participants / competitors; introduce effective medicines supply and demand side monitoring through the state CMS, facility and resource persons; price control mechanisms to reduce the price of medicines for most diseases ; encouraging the production of generics for major ailments and diseases; removing harmful formulations and enforcing price reduction for most medicines on the EM list just like the UAE and Philippines did.

There are several global alliances that are dedicated to improving access to medicines and Nigeria can tap into the opportunities these partnerships present for the benefit of all. One of such is the Global Alliance for Vaccine initiative –GAVI. Created in 2000, GAVI works in

the poorest regions of the world to increase access to new and under used vaccines for children. In 2014, GAVI introduced the *pentavalent vaccine*, which is valued at thirty dollars for each dose in US public facilities but is subsidised and offered by GAVI for just one dollar nineteen cents (\$1.19). Through this program, GAVI was able to reach four hundred and forty million (440 million) children in 2014, thus preventing six million deaths.

On a positive note, having endorsed a National Health Act to support the National Health Policy, one can only assume that the Nigerian government would ensure the legislation is properly backed up by effective implementation.

#### **iv. A national programme to promote rational prescribing.**

Rational prescribing could be described as when medications are prescribed and dispensed by authorised personnel in the right dosage and based on its appropriateness to the patients individual, clinical and health needs. Gross<sup>552</sup> defines it as using the minimum quantity of medicines to achieve the greatest conceivable effect within the shortest period and an affordable price. Holloway and Dijk<sup>553</sup> revealed that approximately half of medicines sold all over the world are inappropriately prescribed or dispensed. Therefore, irrationality in medicines prescribing pattern and use is a global issue<sup>554</sup>.

Another research also stated that most of the patients who use medicines, take them incorrectly with the resultant effect of unsuccessful treatment amongst other risks. Irrational

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<sup>552</sup> Gross, F., (1981). Drug utilization therapy and practice: The present situation in Federal Republic of Germany. *Eur. J. Clin. Pharmacol.*, 19: 387-394.

<sup>553</sup> Holloway K. Dijk L., (2011). Rational use of medicines. Cited in 'The world medicines Situation' 2011, 3<sup>rd</sup> eds. Geneva, World health organization. (Online ) available at : [http://who.int/medicines/areas/policy/world\\_medicines\\_situations/en/index.html](http://who.int/medicines/areas/policy/world_medicines_situations/en/index.html)

<sup>554</sup> Enwere, O.O., C.O. Falade and B.L. Salako, (2007). Drug prescribing pattern at the medical outpatient clinic of a tertiary hospital in southwestern Nigeria. *Pharmacoepidemiol. Drug. Saf.*, 16: 1244-1249.

prescribing also poses a challenge to medical practice with negative outcomes –evident in excessive prescription of medicines such as injections and antimicrobials<sup>555</sup>.

There are various ways that medicines can be prescribed inappropriately in every healthcare system; the practice of polypharmacy or the prescription of several medicines to a patient at the same time has been noted as the commonest prescription method that hinders rational prescription<sup>556</sup>. Furthermore, medicines prescription that are not done based on clinical processes such as adhering to national treatment guidelines or hospital prescription policies could hinder access to medicines by increasing chances of drug resistance and also promoting irrational use<sup>557</sup>. According to Alfa and Adigwe<sup>558</sup>, when medicines are prescribed and used irrationally, it not only limits access within the health system, it could also result in wastage of limited resources.

Investigations of prescription pattern in Nigeria showed that most healthcare personnel in charge of prescribing medications were aware<sup>559</sup> of international prescription guidelines but never adhered to the procedures<sup>560</sup>. Other studies<sup>561</sup> also indicated that although most medicines prescribers and dispensers knew about standard treatment and prescription guidelines they tend to overlook treatment procedures and hardly consulted the national essential medicines list. In Nigeria, there is high incidence of indiscriminate prescription of

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<sup>555</sup> Salman, M.T., M.F. Akram, S. Rahman, F.A. Khan, M.A. Haseen and S.W. Khan, (2008). Drug prescribing pattern in surgical wards of a teaching hospital in North India. *Indian J. Practising Doctor*

<sup>556</sup> Woodhouse K.W., Routledge P.A., O' Mahony M S., (2004). Adverse Drug Reactions in Elderly Patients. *Br J clin Pharmacol.*;57(2): 121-6. Review.

<sup>557</sup> Hamidi S., Younis M Z., Forgione D A., Hartmann M., (2009). Rational use and effects of implementing an essential medicines list in West bank, Palestinian territories. *Expert RevPharmacoecon Outcomes Res.*;9(3):243-50.doi 10.1586/erp.09.21.

<sup>558</sup> Alfa J., Adigwe P., (2014). Rational use of medicines in Nigeria: A critical Review. *Journal of Biology, Agriculture and Healthcare*. ISSN 224-3208(paper) ISSN 2225-093X (online) Vol.4, No.16, 2014

<sup>559</sup> Tamuno I., (2011). Prescription pattern of clinicians in private healthcare facilities in Kano, North-western Nigeria *Asian pacific journal of tropical Disease* 1;3:235-238.

<sup>560</sup> Olayemi S. O., Akinyede A. A., Oreagba A.I., (2006). Prescription pattern at primary primary health care centers in Lagos state. *Niger Postgrad Med J.*2006 sep;13(3):220-4

<sup>561</sup> opcit

antibiotics<sup>562</sup> & <sup>563</sup>, anti-hypertensive<sup>564</sup> medications and poor prescription<sup>565</sup> of generic medicines<sup>566</sup>.

Emphasising the concept of rational prescription and use of medicines is fundamental towards achieving regular and unhindered access to quality medicines in every healthcare system. Beyond having a National drug formulary-NDF and essential medicines list -EML, every functional health system must have standard treatment guidelines that outline appropriate medicines prescriptions and dosages. According to Alam et al<sup>567</sup>, there are essentially five conditions for or measures of rational medicines prescription and use; correct clinical diagnosis, appropriate prescribing based on the disease or health needs of the patient, proper dispensing, appropriate packing / labelling and patient compliance / adherence to treatment and dosage instructions. Rational prescribing practices described above can be analysed in using these five measures.

#### **Correct Clinical Diagnosis and consulting time:**

In Nigeria, the national drug policy of 2005 endorses rational prescribing pattern and utilization of essential medicines. Yet rational prescribing / treatment procedures have not been given unequivocal attention by bio medical personnel across the country. This negligence of rational prescribing pattern and use by clinicians has resulted in a number of fatalities and preventable deaths that could have been avoided if medicines were properly

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<sup>562</sup> Adebayo E.T., (2010). Pattern of prescription drug use in Nigerian army hospitals. *Ann Afr Med.*;9(3):152-8

<sup>563</sup> Adebayo E.T., (2009). A baseline study of prescribing practices in Nigerian military hospitals. *Niger J Clin Pract.* ;12(3): 267-8

<sup>564</sup> Etuk E. Isezuo S.A., Chika A. Akuche J. Ali M., (2008). Prescription pattern of anti-hypertensive drugs in a tertiary health institution in Nigeria. *Ann Afr Med.*7 (3): 128-32.

<sup>565</sup> A A.,Mgbahurike, I., Idowu A. Igwilo, (2006). Antibiotic Utilization and prescribing pattern in a Nigerian university medical centre. Lagos. *Nigerian journal of Pharmaceutical research* vol 8; 1:236-421. Available on line at : [www.ajol.info/index.php/njpr/article/view/74006](http://www.ajol.info/index.php/njpr/article/view/74006) accessed 4th February 2015

<sup>566</sup> Akande T.M., Ologe M.O., (2007). Prescription pattern at a secondary healthcare facility in Ilorin, Nigeria. *Ann Afr Med.*;6(4):186-9.

<sup>567</sup> Alam, K., P. Mishra, M. Prabhu, P.R. Shankar, S. Palaian, R.B. Bhandari and D.A. Bista, (2006). Study on rational drug prescribing and dispensing in outpatients in a tertiary care teaching hospital of Western Nepal. *Kathmandu Univ. Med. J.*, 4: 436-443

labelled, dispensed and the information well understood by users. Often times, even when medicines are prescribed based on the national essential medicines list and patients know the right dosage to take, most of those medicines are not usually properly labelled<sup>568</sup>.

Beers et al<sup>569</sup> suggested that in identifying inappropriate prescribing practices, there are a couple of prescription patterns that one should look out for and this involves avoiding a range of medications which are not listed in the national essential medicines list or those unsuitable for a certain age range. Furthermore, lengthy treatment durations and prescribing too many medicines to patients at the same time should be avoided<sup>570</sup>.

**Appropriate prescribing and dispensing:** There has been growing concerns over poor prescribing practices by clinicians and healthcare personnel due to the prevalence of a number of problems which are direct consequences of wrong prescribing such as drug resistance and dispensing of wrong medications or medications that are not suitable for a particular age or health condition, etc. Irrational use of medicines is highly influenced and largely determined by the prescribing practices of bio medical personnel. The absence of qualified and authorised bio medical personnel have been cited as one of the reasons responsible for poor medicines prescription pattern which is prevalent in primary healthcare facilities -most healthcare workers who are not qualified to prescribe and dispense medicines find themselves doing so due to unavailability of authorised personnel. As a result, medicines are inappropriately prescribed and dispensed without enough information and due regard for the health needs as well as wellbeing of patients and consumers<sup>571</sup>.

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<sup>568</sup> Henry C N., Ikonji J O., (nd)

<sup>569</sup> Beers MH, Ouslander JG, Rollinger I, Reuben DB, Brooks J, Beck JC. (1991)Explicit criteria for determining inappropriate medication use in nursing homes. Arch Intern Med 1991; 151(9): 1825-1832.

<sup>570</sup> Beers MH. (1997)Explicit criteria for determining potentially inappropriate medication use by the elderly. An update. Arch Intern Med 1997; 157(14): 1531-1536.

<sup>571</sup> Babalola C. P., Awoloye S. A., Akinyemi J. O., and Kotila O. A. (2011). Evaluation of prescription pattern in Osun State (Southwest) Nigeria. Journal of Public Health and Epidemiology Vol. 3(3), pp. 94-98, March 2011 Available online at <http://www.academicjournals.org/jphe> ISSN 2141-2316 ©2011 Academic Journals

The WHO outlined basic prescribing indicators that point to good prescribing practices by healthcare workers; such as: a. Average number of drugs per encounter, b. Percentage of drugs prescribed by generic name, c. Percentage of prescribed drugs from essential drug list, d. Percentage of encounters with injection prescribed and Percentage of encounters with antibiotics prescribed.

✓ **Percentage of encounters with injection prescribed and Percentage of encounters with antibiotics prescribed:**

In their study in 2004, Odunsanya et al established that antibiotics were highly over prescribed by healthcare personnel. Antibiotics were prescribed without being validated through laboratory tests in order to ensure accurate indication and this resulted in poor compliance coupled with a high prevalence of multi –drug resistance. Drug resistance on its own further triggers other ripple effects such as the use of highly effective and correspondingly, expensive antibiotics which are often paid for out of pocket and deplete the earnings of many poor patients.

Another study conducted by Bablola et al<sup>572</sup> in 2011 established and confirmed the prevalent prescription and use of antibiotics as well as injections in primary healthcare facilities in South west Nigeria. In addition, of all the primary healthcare facilities that were surveyed, there was a high incidence of poor knowledge of injections strength and safety coupled with absence of doctors and pharmacists. Moreover, the available doctors and pharmacists were involved in administrative capacities and rarely attended to patients. When they did attend to patients, they barely prescribed injections. In contrast, most of the healthcare workers often prescribed injections and unsuitable antibiotics for bacterial infections which were found to increase the resistance level of available antibiotics.

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<sup>572</sup> ibid



### ✓ Average number of medicines per encounter

The rationality behind prescribing a limited number of medicines is to ensure that patients comply with instructions without feeling overwhelmed or confused by the number of medicines they have to take which often results in irrational use of medicines. The WHO<sup>573</sup> suggested that prescribers reduce their prescriptions per encounter to one or two to ensure rational use by patients. Despite the WHO standards of 2.0 per encounter<sup>574</sup> for rational use and prescribing of medicines, in Nigeria however, there is a high level of deviation and noncompliance to this standard. The number of medicines prescribed on paper per encounter in Nigeria contains on average, three or more medicines. Only 20% contained one or two medicines<sup>575</sup>.

While multiple prescribing might be advantageous in some cases where drug resistance exists, in Nigeria, it is quite rampant and has increased the rate of irrational use of medicines by patients with the resultant adverse reactions. A study conducted in Ethiopia also indicated that multiple prescribing was high in most parts of Ethiopia<sup>576</sup> with eighty percent of prescriptions containing either two or three medicines on average<sup>577</sup>. Having a limited number of medicines per encounter and building the capacity of health facilities and personnel for follow ups and effective monitoring would help in minimising the effects of poly pharmacy or multiple prescribing<sup>578</sup>.

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<sup>573</sup> World Health Organization (2010). How to investigate drug use in health facilities: selected drug indicators, action program on essential drugs, Geneva

<sup>574</sup> harif, S.I., M. Al-Shaqra, H. Hajjar, A. Shamout and L. Wess, (2007). Patterns of drug prescribing in a Hospital in Dubai, United Arab Emirates. Libyan J. Med., Vol. 3.

<sup>575</sup> opcit

<sup>576</sup> Desta Z, Abula T, Ganes A, Worku A (2002). Prescribing pattern of drugs for outpatient in three hospitals in North West Ethiopia. J. Health Dev. 16: 183-189.

<sup>577</sup> Yenet W (2005). Base line survey on drug prescribing indicators for outpatient in Jimma University specialized hospital in South west Ethiopia. East Afr. Med. J. 12: 142-156

<sup>578</sup> ibid

### ✓ **Percentage of medicines prescribed by generic name**

In Nigeria, although most prescribed medicines are listed in the EM list using their generic names, the prescribers often prescribe and dispense medicines in brand names contrary to the WHO standard of prescribing one hundred percent by generic names<sup>579</sup>. This Prescription of medicines in their brand names often results in increased cost to the patient which may in turn lead to non-adherence to the prescribed drugs. Prescribing generic medicines hold a lot of advantage for the patient ranging from easy dosage instructions to affordable prices. Yet, most medicine prescribers and dispensers would rather prescribe by brand names unmindful of the consequences of not prescribing by generic names such as hindering patients' access to available essential medicines and maximizing profit from the sale of expensive brand medicines at the expense of the patients.

The high incidence of irrational prescribing in Nigeria has contributed immensely to the challenge of access to medicines by lowering people's chances of getting quality, efficacious and affordable medicines in the appropriate dosage and at the right time. Irrational prescribing such as not prescribing medicines by their generic names is quite common in private healthcare facilities and pharmacies. This attitude could be attributed to a number of factors such as information gap within the healthcare system and the pharmaceutical sector. Furthermore, lack of government involvement in the Nigerian pharmaceutical industry has resulted in a laissez faire market where pharmacists are free to order innovator brand medicines from anywhere without fear of repercussions. Also, most prescribers tend to discriminate against most brands, and then end up prescribing medicines from certain

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<sup>579</sup> Isah, E.C., Isah A.O., Ohaju-Obodo, J.O., and Okojie, O.H., (2001). Prescribing practices in public health facilities in Edo and Delta states of Nigeria: a field experience with WHO prescribing indicators. *West African Journal of Pharmacology and Drug Research* 17: 22-28.

manufacturers even though the efficacy of their products have not been confirmed or proven<sup>580</sup>.

There are cases where bio medical personnel, other authorised and unauthorised medicines prescribers and dispensers in Nigeria fail to inform patients about the strength, dosage, frequency and length of use of prescribed medicines<sup>581</sup>. In most cases, the prescribers included banned formulations in their prescription<sup>582</sup>. Studies<sup>583</sup> have shown that avoidable mistakes in medical practices such as prescribing, dispensing and labelling have a tendency to increase the destructive potentials of pharmaceuticals in healthcare facilities. An appropriate dispensing system is an important ally for prevention or reduction of medication errors

#### ✓ **Percentage of prescribed medicines from essential medicines list**

The previous chapters discussed the national drug formulary and essential medicines list in Nigeria as well as its general contents such as the standard treatment guideline. Yet, clinical practices at the primary level in Nigeria reflect limited awareness and knowledge of treatment guidelines by not adhering to treatment and prescribing standards. Despite having a national essential medicines formulary and list a significant proportion (80%) of public and private healthcare facilities particularly in Nassarawa and Abuja metropolis at the time of this study, did not have copies of the national essential medicines list / hospital formulary. In the case where the national essential medicines list was available, prescribers hardly consulted it for prescribing purposes.

The essence of having a copy of the national essential medicines list in every primary healthcare facility at all times is to ensure that medicines are rationally produced, selected,

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<sup>580</sup> Opcit – WHO 2010.

<sup>581</sup> Opcit

<sup>582</sup> ibid

<sup>583</sup> Hogerzeil HV, Walker GJ, Sallami AO, Fernando G. (1989) Impact of an essential drugs program on availability and rational use of drugs. *Lancet*. ;1:141–2.

procured, stored and distributed across the country. Therefore, treatment guidelines and other informational materials are there to guide bio medical personnel in diagnosing and treating patients appropriately with suitable medicines, formulations and dosage combinations where necessary. Where treatment guidelines and rational prescribing practices are followed by healthcare personnel, it improves medicines availability and increases chances of rational use and dosage adherence without the risk of adverse reactions<sup>584</sup>.

In Nigeria, there is low percentage of availability of essential medicines list in most primary healthcare facilities as well as low percentage of medicines prescribed from the national essential medicines list<sup>585</sup>. Available data suggests that often times, medicines are not prescribed from the national essential medicines list, and this deviation from the WHO standard has resulted in unavailability of most essential medicines. Isah et al<sup>586</sup> recorded a low prescription rate of medicines from the national essential medicines list in Edo and Delta states at 96 - 98%. Although their findings contradict that of Chedi et al<sup>587</sup> which pegged the percentage of medicines prescribed from the national essential medicines list at 79-80%, these findings are reflections of the huge disparity in adherence to prescribing guidelines in space. It shows that adherence to appropriate prescribing practices in Nigeria could also be determined by location.

Several reasons have been attributed to the low prescribing rate from the national essential medicines list. For instance on inquiry, most prescribers complained about the unavailability and absence of medicines for different health conditions in the national essential medicines list. In addition, some prescribers cited the fact that patients had developed resistance to a good number of listed medicines. On the contrary, additional inquiry from other studies

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<sup>584</sup> ibidS

<sup>585</sup> Chedi, B.A., Abdu-aguye, Kwanashie, H.O., (2010). Interventional Studies of Anti-Malarial Drugs Utilization in Public Health Facilities In Kano, Nigeria. Bayero Journal of Pure and Applied Sciences, 3(1): 49 – 53

<sup>586</sup> opcit

<sup>587</sup> ibid

which has been proven by this study indicated that most healthcare facilities did not have the list, correspondingly, bio medical health personnel did not have access to the national EM list as well. Besides where the list was available, most prescribers were unwilling to consult it for reasons that may not be far from the ones stated above which might not be a concrete basis for their irrational prescribing patterns.

Generally, research findings suggest that rational prescribing and dispensing practice indicators at all levels of healthcare in Nigeria have yet to reach the ideal level. The reasons for this are not far-fetched – apart from not having a functional medicines policy, there is also the case of weak pharmaceuticals practices mainly, due to the absence of monitoring mechanisms by the government. For that reason, the Nigerian government has to intervene by establishing monitoring units. In addition, there has to be renewed efforts on advocacy and creating awareness for ‘safe prescribing practices’ particularly, regarding most commonly prescribed medicines and treatments such as injectable shots and antibiotics.

**Appropriate packaging / labelling:** One vital aspect of medicines prescription and dispensing which is often neglected is ‘adequate labelling’. Although there are a number of data on medicines prescription pattern across all levels of healthcare facilities in Nigeria, there is paucity of research data on the percentage of occurrence of adequate labelling of medicine in primary healthcare facilities. However, available data suggests that there is high prevalence of poor and inappropriate medicines labelling in Nigeria<sup>588</sup>.

Even though the WHO recommends that each medicine label or package must contain medicines name, name of the patient, and dosage schedule / course of therapy<sup>589</sup> in Nassarawa, Abuja and Kaduna states, it was discovered that prescribers often left out

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<sup>588</sup> *ibid*

<sup>589</sup> Isah, A.O. Ross-Degnan D. Quick, J.D., Laing, R., and Mabadeje, A.F.B. (2004). The development of standard values for the WHO drug use prescribing indicators. [http://www.who.int/dapicium/posters/1a2\\_txt.html](http://www.who.int/dapicium/posters/1a2_txt.html) Accessed 10<sup>th</sup> February 2015.

patients' names and names of prescribed medicine. This level of poor labelling was quite high in remote areas where there was no labelling in most cases due to prescribers assuming that patients were familiar with the dosage. In most healthcare facilities visited during this study, the names of patients or initials were not indicated on the packages neither were the dosage routines properly written on the labels. Patients also complained about forgetting dosage instructions and not knowing how to take medications due to improper labelling.

A study found that a number of pharmacists <sup>590</sup>tend to reduce labelling when the number of medicines prescribed is high. This points to the fact that medicines prescribers and dispensers apportion a certain time frame for labelling and packaging without bothering about proper labelling and the implications of non-adherence to dosage instructions by patients. Medicines must be stored in packages or containers that would not compromise its potency or increase toxicity. In addition, the package must contain the right medicine suitable for the patients' needs with labelling that contains the appropriate dosage and quantity with understandable and plain instructions.

When compared to data from Ethiopia, medicines labelling was similarly low at 13.5% <sup>591</sup> which is a little less than that of Zimbabwe, South Africa and other LMICs. Although WHO does not expect anything less than one hundred percent value in terms of medicines labelling, inappropriate labelling has become common practice in most countries and a global threat to rational use of medicines<sup>592</sup>. A good number of bio medical personnel in most LMICs no longer comply with rational labelling standards and this could be blamed on direct negligence on their part or having limited time as a result of having to see many patients daily. Another

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<sup>590</sup> Lukshmy M. H., Kalana J., and Sewwandi S., Cross sectional surveillance of drug dispensing efficacy, availability and quality of labelling by patient care indicators in health care facilities. *J Pharmacol Pharmacother.* 2013 Apr-Jun; 4(2): 142–144. doi: 10.4103/0976-500X.110904 (online) available at : <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3669575/> accessed 5<sup>th</sup> February 2015

<sup>591</sup> Drug administration and control authority -DACA (2003). Training modules on operation and management of special pharmacies, 2<sup>nd</sup> ed. Ethiopia. Addis Ababa

<sup>592</sup> Opcit

reason could be shortage of packaging or labelling materials particularly, in remote areas where there are no authorized personnel but adjuncts. Inappropriate labelling of medicines has led to underuse, overuse and misuse of medicines by patients resulting in preventable fatalities. Therefore, the Nigerian government and other stakeholders in the health system need to come up with new strategies on how ensure compliance as well as monitor and reward adherence to appropriate prescribing and dispensing of medicines in all facilities across the country.

### **Patient compliance / adherence to treatment and dosage instructions:**

Just as the WHO has set standards for appropriate prescribing and dispensing, In the same way, there are basic indicators that are used in assessing rational usage of medicines and patient care such as: a. Average consultation time, b. Average dispensing time, c. Percentage of precise number of medicines dispensed per time c. Percentage of patient knowledge of appropriate dosage, and d. Percentage of adequately labelled medicines<sup>593</sup>.

- ✓ **Average consultation / dispensing time and percentage of precise number of medicines dispensed per time**

Polypharmacy or multi prescribing has been discussed in the preceding section and would not be discussed further in this section. However, the impact of average consulting time with regards to how it affects medicines dispensing and rational use would be discussed. During the period of this study, most of the patients who were interviewed acknowledged that they spent about four to five minutes with the healthcare personnel and seemed quite satisfied with the consultation time. However, more than half of them expressed dissatisfaction over the time spent at the dispensing counter. Beyond that, they complained about the unavailability of most of the prescribed medicines and the high cost of obtaining the medications from

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<sup>593</sup> Opcit; WHO 1993 ; 2010.

private facilities. In Nigeria, there is limited research on access to essential medicines and key determinants of access such as prescribing patterns and rational use of medicines especially in the Abuja, Kaduna and Nassarawa states. However, a study of prescribing pattern in an orthopaedic facility by Yinusa<sup>594</sup> revealed that most bio medical health personnel are prone to error while prescribing medicines to patients in Nigeria due to the absence of effective prescribing regulations and monitoring. Sometimes, after consultation and diagnosis, some patients complain about being given pain-killers and vitamins regardless of their complaint. A more commonly expressed problem is that small quantities of medicine are given. There is little understanding of strength and dosage of modern medicines. In conclusion,

✓ **Percentage of patient knowledge of appropriate dosage**

Research Findings in Nigeria suggest pervasive use of un-prescribed antibiotics by a significant number of the population<sup>595</sup>. An investigation of patient adherence to prescription in Lagos revealed that two thirds of the surveyed population had difficulty complying with prescription instructions<sup>596</sup>. A major part of female university students used antibiotics to treat menstrual symptoms while mothers of approximately half of children sampled in Enugu state self-medicated by administering un-prescribed antibiotics to those children during bouts of diarrhoea<sup>597</sup>.

Beyond, the irrational prescribing and dispensing practice, irrational patient use of drugs are also commonly observed. Patients often forget what they are told about dispensed drugs as a result, do not adhere to dosage instructions and treatment durations. A study carried out in

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<sup>594</sup> Yinusa W. (2004) Prescription error in an orthopaedic practice. Niger Postgrad Med J. ;11(1):37-9.

<sup>595</sup> Sapkota, R. E., Coker, M. E., Goldstein, R. E., Atkinson, N. L., Sweet J. S., Sopeju, P. O., Ojo, E. O., Ayepola, O., Olufunmiso, O., Shireman, L. (2010). Self-medication with Antibiotics for Treatment of Menstrual Symptom in South West Nigeria. BMC public health, 10:1471-2458/10/60

<sup>596</sup> Olayemi SO, Akinyede AA, Oreagba AI. (2006). Prescription pattern at primary health care centres in Lagos State. Niger Postgrad Med J. 2006 Sep;13(3):220-4.

<sup>597</sup> Ekwochi, U., Chinawa, J., Obi, i., Obu, H. A; Agwu, S, (2013). Use of Unprescribed Antibiotics in Management of Upper Respiratory Tract Infection in Children in South-eastern Nigeria. J trop pediatr, 59(4):314-6



Benin indicated that over half of the study population did not complete the required antibiotic dosage for their health conditions.<sup>598</sup> Most patients use medicines inappropriately by decreasing the dosage to lengthen the duration of the treatment or increasing dosage with the expectation that by so doing, it would be more efficacious. Often times, these patients are not properly informed about the severity of their ailments hence, fall prey to their misconceptions and wrong assumptions about dosage regimen with extreme consequences. This knowledge deficit probably, as a result of inadequate information from dispensing officers leads to unexpected suspension of medications among patients resultant in an aggravation of their health conditions. There are cases where some patients discarded their prescriptions for the fact that the medicines had an awful or nauseating odour<sup>599</sup>. Worse still, other patients complained about the use of abbreviations and illegibility of what was written on the prescription label.

In Nigeria, studies have found that the number of people who find it difficult to adhere strictly to prescription guidelines far out numbers those who use medicines appropriately. The key factor responsible for non-compliance with dosage regimen is poor memory or absent mindedness during diagnosis and prescription. Adigwe et al<sup>600</sup> suggested that poly pharmacy or multi prescribing also increases chances of patients forgetting treatment and prescription instructions-Patients tend to forget dosage guidelines when the numbers of dispensed medicines are more than two.

When used correctly, medicines add to the general fitness and well-being of people. On the other hand, when used inappropriately, medicines could lead to drug resistance<sup>601</sup>; health

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<sup>598</sup> Yah, S. C., Yusuf, O. E., Odeh, E. N (2008). Pattern of antibiotics usage by adult population in the city of benin.scientific research and essay 3(3)pp. 081-5

<sup>599</sup> ibid

<sup>600</sup> opcit

<sup>601</sup> Kehinde, O. Ogunowo, B. (2011).Balancing treatment access and antibiotic resistance. West Afr J Of Pharm 24 :1.

complications<sup>602</sup>, waste resources, compromise health<sup>603</sup>, worsen health system imbalances, and pose a threat to the viability of health systems<sup>604</sup>. Generally, the consequences of non-compliance with rational prescribing and dosage standards are grave and gets worse if patients are illiterate. For instance, some patients described how they had to discard the remaining prescriptions after getting better, without follow up visits to the hospital or knowledge of the essence of completing the prescribed dosage.

Nevertheless, according to Thomas et al, suggests that sensitization workshops about use of medicines and appropriate prescription have great potential to improve rationality in prescribing and use of medicines. Vries et al also suggested the use of short problem-based training course in pharmacotherapy to increase rational prescribing performance and abilities. Before these sensitization initiatives and trainings can be used effectively, policy makers, there is need for health system administrators and managers to set up the right mechanisms for effective implementation of existing treatment guidelines and standards.

While there is serious concern in some aspects of healthcare, as with most sectors of the Nigerian society, there have been laudable milestones over the last three years. Nigeria made significant advances in preventive healthcare such as the approval and adoption of the Pneumococcal Conjugate Vaccine -PCV into the national preventive vaccination schedule. Also, the country is getting quite close to eradicating polio; being one out of three countries that have been unable to eradicate polio, Nigeria as at 2014, now has a record of six cases out of the previous fifty which is equal to ninety percent decline in polio cases. This progress is

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<sup>602</sup> Aboderin OA, Abdu AR, Odetoyn BW, Lamikanra A. (2009). Antimicrobial resistance in Escherichia coli strains from urinary tract infections. *J Natl Med Assoc.*;101(12):1268-7

<sup>603</sup> Oshikoya KA, Ojo OI. (2007). Medication errors in paediatric outpatient prescriptions of a teaching hospital in Nigeria. *Nig Q J Hosp Med.*;17(2):74-8.

<sup>604</sup> Happi CT, Gbotosho GO, Folarin OA, Milner D, Sarr O, Sowunmi A, Kyle DE, Milhous WK, Wirth DF, Oduola AM. (2006). Confirmation of emergence of mutations associated with atovaquone-proguanil resistance in unexposed Plasmodium falciparum isolates from Africa. *Malar J.* 4;5:82.

noteworthy, given the fact that Nigeria had been termed a ‘polio transmitter’, therefore, responsible for the spread of the polio virus to other countries in sub Saharan Africa<sup>605</sup>.

Additionally, the Nigerian health system was quite responsive to the Ebola outbreak which caused high mortalities in other African countries such as Sierra Leone and Liberia. Due to the timely response and intervention in form of finances and other resources by the Nigerian government, healthcare professionals in collaboration with the United States Centre for Disease Control and WHO were able to manage the situation. As a result, out of nineteen reported cases, twelve survived while seven patients died. Having successfully managed the Ebola pandemic in spite of its inherent weak health system, Nigeria was declared Ebola free and went ahead to support other affected countries (Guinea, Sierra Leone and Liberia) in West Africa by sending about two hundred and fifty Volunteers to support those countries in managing the Ebola outbreak.

Apart from international collaboration which helped in containing the Ebola outbreak, the rate of Public Private Partnerships –PPP has also increased in Nigeria resulting in improved access to healthcare and early detection of diseases. The Lagos University Teaching Hospital- launched a Molecular Biology Research Laboratory which was constructed and furnished with medical equipment by Chevron Nigeria plc. The lab was instrumental to the early detection of the Ebola Virus. Moreover, the NHIS-National Health Insurance Scheme currently functions in collaboration with Nigerian mobile networks (Airtel and Mtn).For instance, Nigerians can now have access to health insurance provided they own cell phones and are willing to pay a weekly rate of two hundred and fifty naira.

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<sup>605</sup>Sola O., Chioma O., and Gabriel O., (2014), December 29th. “Nigeria: 2014 - Ebola, Strikes Dominate Health Sector” Vanguard newspaper. Online available at <http://allafrica.com/stories/201412300093.html> accessed 12th February 2015.

In furtherance of its commitment to preventive, diagnostic care and early detection of diseases, the Nigerian Institute of Medical Research – NIMR launched a Human Virology Laboratory. The commissioning of this lab services came at the heels of the launch of the PMTCT – Prevention of Mother to Child Transmission of HIV program. This program would prevent mother to child transmission of HIV and ensure that no child is born HIV positive in Nigeria.

In order to tackle shortage of human resources for health which has been aggravated by the invasion of the health system by quacks, Nigeria also commissioned the Dental Therapist Development Centre -DTDC in Lagos state. The introduction of the dental centre which has been rated as world-class and the first of its kind in the country will aid in monitoring and limiting the activities of fake dentists.

Then again, beyond these milestones, there have been debates about the new health bill, social grant for older citizens and the question of effective implementation- There are also public dialogues on health systems strengthening efforts, primary healthcare reforms; about the growing cost of healthcare, shortage of personnel, healthcare tourism; its impact on the Nigerian economy as well as poor service delivery; and whether Nigeria is moving towards closing the gap of healthcare inequities by making healthcare affordable to all citizens despite their level of income. Besides, while other countries are seeking solutions and strengthening their health system through the application of new and innovative strategies; wanting to catch up with international practices with regards to improving the supply and distribution of medical supplies coupled with the introduction of effective information systems, Nigeria has been caught up in old practices. Healthcare practices in Nigeria at present is a complete deviation from international standards; ranging from poor health system financing , outdated information system, paucity of health oriented data, uncoordinated pharmaceuticals supply chain which has resulted in shortage of essential medicine, the blatant disregard of standard

treatment guidelines by personnel to inappropriate prescribing patterns. All these are due to the fact that the Nigerian government has yet to see to the following: a. Establishment of a national drug policy as a common framework to solve problems, b. Initiation of Health technology assessment and c., Establishing and implementing the National Health Equipment Policy Uneke et al<sup>606</sup>. Fundamental issues which have not been talked about are how to close the gap of inequalities within the health system and how to improve access to quality, affordable and efficacious medicines to all citizens at the right time and in the right doses. And, until public advocacy and research in this field improves, access to essential medicines would not improve and just like every system suffers when each component malfunctions, the Nigerian health system will remain comatose if people are unable to access affordable medicines due to systemic and operational challenges.



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<sup>606</sup> Chigozie J U., Bhupinder K A., Abel E E., Chinwendu D N., and Friday O. (2012). Bridging the divide between research and policy in Nigeria: The role of a health policy advisory committee. *Journal of Public Health Policy* 33, 423-429 (November 2012) | doi:10.1057/jphp.2012.30

## **CHAPTER FOUR: METHODOLOGY**

Chapter two and three analysed and discussed some of the articles and scholarly literatures that have been written on essential medicines and access to medicines as well as the medicines situation in Nigeria. While earlier studies provide valuable information as regards the general situation of the health system and in particular, Access to quality and affordable essential medicines in most countries, such studies are not reflective of the general situation of ATM in Nigeria. Research findings obtained from studies in other countries cannot be generalised and applied to the Nigerian context due to the complex nature of ATM. That is, most of the previous studies on ATM seemed to conclude that the availability and affordability of medicines especially in public health facilities were the bane of ATM in most countries. A limitation of these studies on ATM is that they basically lost sight of the supply chain dynamics of ATM and often used the quantitative approach which tends to present statistical data that is not reflective of the complex nature of ATM. It possibly will be beneficial to also investigate the ATM framework within the Nigerian context using the Qualitative research method as this methodology has high sociological validity and supporting it with quantitative data for descriptive purposes. However, few studies have used these methodologies, and those that did, were not conducted in Nigeria. Therefore, this study would be helpful to better understand the existing ATM structure in Nigeria in a holistic manner and how it functions within the healthcare system.

This chapter will provide details of the research methodology for the study and also explain the aim and an appropriate methodology to answer the research questions. The chapter describes the sampling size, participants of the study, instrumentation done for the study, data collection, as well as data analysis procedures.

‘Not everything that can be counted counts, and not everything that counts can be counted’ - Albert Einstein<sup>607</sup>. This statement puts the methodology used in the study in perspective.

#### **4.1. Overview of the Chapter**

This research was carried out in order to examine Access to quality and affordable essential Medicines in Nigeria. For ease of data collection and to ensure relevant data was gathered, the mixed research approach of qualitative and quantitative methods was used. Qualitative method was more convenient due to the quest to have an in-depth understanding of ATM generally and factors that affect or influence it within the Nigerian healthcare system. However, quantitative method was introduced and utilised to guarantee the validity, authenticity and reliability of data collected as well to have first-hand knowledge of the percentage of people within the study area who are able / unable to access the essential medicines they need. Part of the study was to gain insight and understanding of people’s perception and experiences of access to essential medicines, medicines availability and how much they pay for medicines within the study areas of Abuja, Kaduna, and Nassarawa states. Furthermore, how peoples experiences and perceptions mediate access to medicines and how that impacts upon prescription which is a factor of access. In-depth interviews with health professionals and out patients helped in understanding the barriers to access within the various facilities that were visited during the study.

In order to ‘witness’ the experience of out -patients who were able/ unable to afford or access prescribed medicines, data was collected through in- depth interviews, focus groups and questionnaires; these methods gave insight and understanding of access to quality essential medicines by people who live within a walking distance of specific health facilities. The focused group discussions and in depth interviews helped in understanding whether quality

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<sup>607</sup> See Kevin Harris’s 1995 compilation of ‘Collected Quotes from Albert Einstein. Available at: <http://rescomp.stanford.edu/~cheshire/EinsteinQuotes.html> accessed: 30th October 2014.

medicines are available and affordable in public and private dispensing facilities to treat common conditions at primary care level? It also drew attention to patients' interaction with dispensing officials, pharmacists and health professionals and employees in public / private health facilities involved in efforts to fulfil the healthcare needs of the people.

Generally, respondents were selected from Abuja, Kaduna and Nassarawa states based on a purposeful / criterion based sampling method from public/ private pharmacies, clinics and pharmaceutical distributors.

Facility heads at public / private health facilities, pharmacies and medicines outlets who were carefully selected, participated in in-depth interviews and filled questionnaires for the following purposes; to obtain information on general facility characteristics, services provided, medicines availability and policy related issues.

The results of the questionnaires and in-depth interviews were then processed by codifying them into data sets. Collected data was computed for easy interpretation and analysis. Relevant literatures were also documented and analysed, then used to support the gathered findings.

The reliability of research outcomes and conclusions depend on the quality of the research method; the design, data gathering; management and analysis. That said, this chapter explains the method and process used in gathering the research data, why the method was chosen and how the data was analysed and interpreted to avoid loss of relevant information. The chapter also covers the respondents that were studied as well as the method of selection, samples of the data collection tools and information that was gathered. The key elements of the data collection methods are summarised below but outlined in greater details in 3.2 and the following sections.



The paucity of reliable data in Nigeria indicates that direct efforts at getting primary data will be necessary in order to capture relevant data hence, this study was based mainly on extensive qualitative and quantitative investigative work at the level of Public health facilities, health care personnel, private medicines outlets and households in their vicinity. The study investigated the 4As as indicators of ATM; availability, affordability, acceptability, accessibility and quality of 30 medicines on the WHO's model list of essential medicines, used in treating common conditions.

### **Summary of Data Collection Procedures and Chapter outline:**

This study was based on both primary and secondary data.

#### **Secondary Data**

Textbooks were used to provide one with the historical background and evolution of the Nigerian healthcare system and EM. This was supported by the use of journals and the internet to provide information on current research, analysis and activities in the field of ATM. Furthermore, the search for literatures for this study was conducted throughout the period of the study to track new developments as well as published reports and articles.

#### **Primary Data**

The study adopted a quantitative approach mixed with qualitative, in order to effectively define the study aims and objectives. A quantitative investigation of biomedical and traditional healthcare structures and the general pharmaceutical situation of the study area were conducted using questionnaires. Medical practitioners were invited to participate and questionnaires will be administered. There were visits to ministries of health, Public and private healthcare facilities, Nigerian medical association, traditional health practitioners association and patients' interview. The questionnaires were distributed to ascertain the

country's pharmaceutical situation at the health facility level by touching on the following aspects; pharmaceutical sector, national medicines policy, regulatory system, medicines supply system, medicines financing, patients ability to access medicines at the various facilities, patients affordability and utilization.

The primary research instruments included; questionnaires, interview guides, a camera, note taker and a recording device. Initial contact with potential participants and ministries would be made to gain familiarity with them.

Selections were made for the subject pool and meetings were scheduled for information-gathering (at the qualitative level). Semi-structured interviews with an interview guide were used for the people at the policy / management level. Interviews with practitioners took place both as semi-structured interviews using an interview guide and as a focus group (those from the general hospitals, private clinics and primary health centres). The general hospitals, state ministries of health, traditional medicine practitioners and private bio medical practitioners; doctors and nurse were asked to elect representatives to participate in semi-structured interviews in various communities.

Three basic Instruments for primary data collection were used: Health Facility questionnaires—these questionnaires were administered to facility heads at public health facilities, private health facilities as well as public/ private pharmacies and medicines outlets, to obtain information on general facility characteristics, medicines availability and services provided.

Public health Staff Questionnaires—this set of questionnaire for staff of health facilities included interviews of a sample of health facility staff from all facility occupations, and was aimed at collecting information on their general characteristics, working environment, and incentives.

Household or patients Questionnaires—this survey of health facility clients (that is, households living near the care facilities) was used to collect data on their personal characteristics, facility usage, and satisfaction with services and care.

### Qualitative Observation

The researcher observed first hand, the aspect that deals with the aspects of buying and prescribing medicines; from the prescription stage to the last stage. Permission was sought from the clinic to follow a few patients to the pharmacy to observe the exchange between them and the pharmacy and how the medicines were purchased.

Field research was done with assistance from six research assistants who were selected randomly from higher institutions. Their backgrounds were in social sciences and they had the ability to understand and speak Hausa fluently. Since the study was basically aimed at establishing whether Nigerians are able to access quality essential medicines and at what cost? , the data collection was geared towards gathering data on medicines dispensing practice which necessitated constant visits and observations at public health facilities.

### Semi Structured Interviews

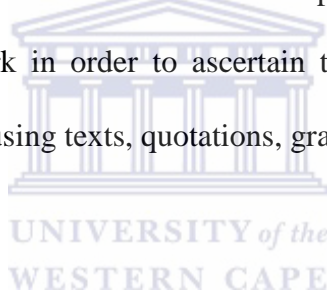
This involved the use of open ended conversational questions that guided respondents in answering the questions within the context of the study. Interviews were tape recorded, notes taken and transcribed with the permission of interviewees (policy makers / healthcare managers and practitioners). A brief interview guide was used during group discussions to make sure certain areas were covered. Interviews and focus groups were conducted in person and by appointment, in the interviewee's natural setting (office, home or wherever he/ she felt comfortable at).

### Focus Group Discussions

Focus group discussions were used to back up the semi structured interviews as a way of enhancing the accuracy and reliability of the information gathered from the interviews. Discussions were conducted to determine the perceptions of clients on drugs situation in the health facilities. The focus groups were sub-divided into those for policy makers and those for practitioners, each comprising 3 people per group per zone. People were picked based on availability at the time of the study.

### Data Analysis

Data gathered from the three states was studied for the purpose of clarification. The data was later transcribed and analysed at the point of collection to ensure the initial result is in line with the research problem. The researcher tried to link empirical findings gathered from field data to the theoretical framework in order to ascertain their relationship. Qualitative and quantitative data were presented using texts, quotations, graphs, pie charts and pictures.



### Ethics Statement

This research was conducted with the utmost attention to all pertinent ethical issues which is stated below;

This research commenced after the proposal has been duly approved by the faculty of Arts Post Graduate Board and the University of Western Cape Senate Higher Degrees and Committee. All ethical principles were observed, by ensuring that participants do not suffer physical, financial or psychological harm as a result of participating in the study. The participants were not deceived, coerced or influenced by promise of monetary rewards. I did ask for the informed voluntary consent of the participants, which was subject to withdrawal at any stage of the study. Also, the anonymity and confidentiality of the participants were of top priority. I did as for permission from the Public Healthcare Facilities, public / private

pharmacies, medicine stores and other stake holders, to ensure the study is conducted freely and appropriately. The research outcome was made available to the relevant authorities.

### Limitations of the Study

Prior to departing to conduct the research, I did envisage that geographical access due to Boko Haram Insurgency in Northern Nigeria and language might be a challenge considering the fact that most of the study areas are not predominantly English speaking. Secondly, the high cost of transportation in Nigeria was considered a challenge and it was indeed challenging. It slowed down the research process since the study was conducted during the rainy season, across three provincial states of the country.

In addition, due to the prevalence of respondents who could hardly read or write and their insecurities regarding questionnaires in Kaduna and Nassarawa, questionnaires were administered with caution in these locations (with the help of indigenes and translators), resulting in the bulk (fifty percent) of the questionnaires being administered in Abuja. More interviews and focused group discussions were conducted in Kaduna and Nassarawa states given their preference for privacy, confidentiality and safety assurance with familiar faces that they were more comfortable with. Nevertheless, the research was carried out unhindered and conducted to the best of my strength.

With the research problem duly set out against a wider international background and specific Nigerian context and aims, objectives, significance and limitations of the study clearly outlined, the structure of the thesis is outlined as follows; the chapter that follows immediately discusses the pertinent literature with the objective of locating the study.

Chapter Three: Essential Medicines in Nigeria:

This chapter provides an overview of the standard WHO list of EM, and identify all that has been classified as EM globally and in Nigeria. It will further tease out the percentage of the different kinds of EM found in Nigeria (in public and private health facilities), as well as the manufacturers of the medicines. (A Checklist consisting of minimum drugs expected in a generic primary health centre developed by the National Primary Health Care Development Agency (NPHCDA) was adopted and used to assess drugs availability in all participating healthcare facilities.)

Chapter Four: Research methodology:

This chapter presents the research design and methodology used in the study.

Chapter Five: Research Findings:

This chapter presents research findings in relations to the stated research aims and

Chapter Six: Discussion

This chapter will discuss the findings in relation to the literature

Chapter Seven: Conclusion and suggestions for further research.

## **4.2. Research Design**

This research utilized the descriptive - qualitative approach. The descriptive research approach could be qualitative or quantitative as well as employ components of both methodologies in the same study. According to Creswell<sup>608</sup>, descriptive-qualitative research gives in depth descriptions of exact situation(s) using interviews, observations and document

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<sup>608</sup> Creswell, J. W. (1998). *Qualitative Inquiry & Research Design: Choosing Among Five Traditions*. Thousand Oaks: CA. Sag Publications, Inc

review. It describes things as they are, which although it might present bulky data, ensures that no information is lost.

The descriptive- qualitative method is a fact-finding approach that encompasses adequate and accurate interpretation of findings by describing events or phenomena in its existing condition. Comparatively, the method is suitable to this study since it describes the present condition of the ATM framework within the Nigerian healthcare system. Although the study uses the descriptive qualitative method, the normative survey approach and evaluation technique of the quantitative method was used to explore opinions based on respondents that could represent an entire population. The quantitative survey is applicable in this study given the fact that it would give room for the formulation of generalizations. Specifically, two types of direct-data survey are included in this study. These are questionnaire survey and interviews. Interviews with patients, facility heads at public health facilities, private health facilities as well as public/ private pharmacies and medicines outlets were conducted to provide further insight about the results of the survey. The direct-data type of survey is a consistent source of first-hand information because the researcher directly interacts with the participants and gains reliable insight.

The purpose of using the descriptive- qualitative approach is to describe the current nature of a phenomenon, as it was during the time of the study and to discover the basis or causes of that specific condition. The researcher opted to use this kind of research considering the desire to acquire first hand data from the respondents so as to formulate rational and sound conclusions and recommendations for the study. According to Creswell<sup>609</sup>, the descriptive method of research is to gather information about the present existing condition. Since this study is focused on the existing ATM framework within the Nigerian healthcare system, the

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<sup>609</sup> Creswell, J. W. (1994). *Research Design: Qualitative and Quantitative Approaches*. Thousand Oaks, CA: Sage Publications

descriptive method is the most suitable method to use. Creswell further stated that the descriptive research method is a method used in gathering descriptive information about the present condition of a particular object or phenomena. The key focus of this approach is on recounting a situation the way it is rather than making deductions or inferences. Descriptive – qualitative approach seeks to investigate the “what’s’ and how’s” of things<sup>610</sup>. It is concerned with finding out the degree to which actions or decisions affect outcomes and how they are being influenced. Often times, when a research involves an in-depth method, this research approach helps in understanding the implications of a qualitative research, due to its flexible nature that allows for further investigation of new issues that might come up during the field study.

Due to scarcity of recently published data on the existing ATM framework in the study areas, primary data was collected through qualitative methods. However, quantitative data was collected and went a long way in giving descriptive demographic insight and also enabled the researcher quantify the study in order to achieve the stated objectives.

Since the research was conducted to establish amongst others, the level and the extent to which people are able to access quality and affordable essential medicines in Nigeria, the indicator used to evaluate Access to essential medicines here is ; ‘the percentage of the population that has access to a minimum of 20 of the most essential drugs.’ While Access is defined as having medicines constantly available and affordable at public / private health facilities or outlets that are within one hour’s walk of the population . Bearing in mind that the idea of medicines in this study embraces; active pharmaceutical ingredients, diagnostic tools, vaccines, biopharmaceuticals and other related healthcare technologies therefore, The issue to be established in the study are;

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<sup>610</sup> Borg, W. R., & Gall, M. D. (1989). Educational Research. New York: Longman. Brophy, J. (Ed.). (1991). Advances in research on teaching (Vol. 2). Greenwich,



Since Nigeria adopted the WHO Essential medicines list, how often is it updated? What essential medicines policies presently exist in Nigeria? Are people able to access prescribed medicines? Are the medicines of reliably good quality? Is the information and guidance needed to use medicine properly available? Are there financial obstacles to patients receiving medicines? How many essential medicines for adults and children are on the shelf at a given facility per time? Have there in fact been regulations regarding quality control and Counterfeits? How does the medicine supply system function? How are medicines procured and financed within the Nigerian healthcare system? What are the constraints to essential medicines access? Have there been interventions or strategies aimed at improving access to medicines? These questions necessitated the use of the descriptive- qualitative approach due to its ability to give different perspectives that led to generating appropriate data - the suggested alternative research focus.

Two types of data were collected for this study; primary and secondary data. The primary data was collected during the field work, through; In-depth interviews, discussions, questionnaires and Participant / non-participant observation. Whereas the secondary data was collected through a review and analysis of published and unpublished literature, government documents and journals that were significant to the study.

#### **4.2.1. The Qualitative Method**

According to Babbie & Mouton<sup>611</sup>, the qualitative approach involves an insider perspective on a given social phenomenon. It is often conducted in the natural setting of the respondents with emphasis on interviews, discussions, observations and the involvement of respondents who could be individuals or selected communities/focus groups<sup>612</sup>. The respondents are often given detailed description of the phenomenon under study and are expected to discuss it from

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<sup>611</sup> Babbie, E. & Mouton, J., (2001). *The practice of Social Research*. Cape Town: Oxford University Press

<sup>612</sup> Kothari, C., (2004), *Research methodology: methods and techniques*, New Age International

their own perspective, within the right context. And for this study, the procedures that were used will be discussed below in section 3.3.3.

### 3.2.2. Quantitative Method

Linked to positivism, the quantitative method involves reaching conclusions by comparing relationships and patterns, and expressing these patterns statistically<sup>613</sup>. Given the fact that there was lack of recent data on the location of all primary health facilities and medicines outlets / pharmacies in the study area, the researcher attempted a mapping and identification of clinics and also gathered information from the ministry of health, the Nigerian Medical Association and pharmaceutical association located within the area and through visits. The researcher also collected primary data through questionnaire surveys of patients and interviews. These methods of data collection are further highlighted below in section 3.3.1&2

### 4.2.3. Data Collection Procedure

This section gives a detailed explanation and information on how research data was collected. The four A's of ATM was used to examine access to 20 essential medicines in Abuja, Kaduna and Nassarawa states by households and individuals as well state and federal governments efforts at improving access to , use of and rational prescribing of quality and affordable essential medicines at the primary healthcare level.

### Pre testing

According to De vos<sup>614</sup>, it is important to pilot test newly designed questionnaires before using them for the main research / investigation. Reason being that it helps in correcting errors and avoiding irregularities and damage. Before administering the questionnaires in the

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<sup>613</sup> Rudestam, K.E & Newton, R.R., (1992). *Surviving your dissertation: a comprehensive guide to content and process*. California: Sage Publications

<sup>614</sup> De Vos, A.S. (1998). *Research at Grass Roots*. Van Schaik Publishers: Pretoria

study area, they were pilot tested to 30 respondents within the University of the Western Cape for validity and reliability. The respondents were mostly students, male and female students from Nigeria studying in Western Cape, and their response did not form part of the study, rather were used to test the questionnaires and interview guides prior to the actual study. After gathering their response, the respondents were asked for suggestions that would help to improve the validity of the questionnaires as data collection tools. The questionnaires were edited after suggestions and biased/confusing terms were simplified for easy understanding and extra care was taken to ensure that no leading/patronising questions were asked nor included in the final study.

Part of the reason for pilot testing the questionnaires at the University of the Western Cape was to avoid a contamination of the sample since the target population and respondents who were expected to participate in the study were not involved.

Secondly, in accordance with Mertens<sup>615</sup> suggestion, the selected sample at Uwc was similar to the research population who were selected based on their availability or proximity to healthcare facilities and 'utilization of healthcare facilities. The similarity between the selected students for pilot testing at Uwc and the adult patients at primary health facilities in Nigeria is that both have sought treatment at a primary health facility and had prescriptions which they had to pay for. They are able to think about the prescription pattern, medicines availability and their financial capability in terms of being able to afford prescribed medicines.

Another reason for pilot testing at the University of the Western Cape was to help the researcher understand how the process of completing a questionnaire works, and to note any "obscurities" or response options that are not involved in the questionnaire. Also, it afforded

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<sup>615</sup> Mertens, D.M (1995) *Research Methods in Education and Psychology: Integrating Diversity with Quantitative and Qualitative approaches*, London: Sage

the researcher the opportunity of checking the respondent's understanding of the meaning of the questionnaire and some of the statements, words and phrases used.

The study questionnaire was pilot tested within an academic environment due to ease of access and to gain knowledgeable criticism / reaction on the type of questions and its format, which is whether to use multiple choices or open/ closed questions etc. And to find out whether the questionnaire was rather long or excessively short, mostly easy or difficult, overly engaging, threatening, intrusive and aggressive"<sup>616</sup>. The pilot testing revealed some irregularities in the data collection instruments and eventually led to reducing the number of questions on the questionnaire. Some questions were dropped while new ideas that could potentially increase chances of getting accurate data in the real study were adopted. After the pilot testing, the data collection instruments were redesigned with a few alterations in data analytical procedures as a way of ensuring their effectiveness for the data.

Six (6) research assistants were sent to the three locations where the studies were conducted; Abuja, Nassarawa and Kaduna for a period of four months, between April and July 2014. Personal information of respondents was not collected; most of the respondents wanted their privacy respected and their information was held confidential; it was voluntary and anonymous.

The study looked at the prices people pay for medicines; the quality; safety; efficacy; prescribing pattern of dispensers; availability and accessibility of the medicines generally by applying a mixed method aimed at drawing both quantitative and qualitative dimensions with the qualitative part building on the quantitative. In chapters five and six, data analysis revealed new themes and patterns that could be said to have emerged as a result of the application of the mixed method.

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<sup>616</sup> Cohen, L., Manion. L., & Morrison, K., (2001) *Research Methods in Education*, London: Routledge. See page 260

The techniques used in this study were meant to address the research questions as well as ease data collection from majority of the sample population who were mostly resident in non-urban areas. As stated, the aim of this study is to establish amongst others, the level and the extent to which people in Abuja, Kaduna and Nassarawa states are able to access quality and affordable essential medicines. This necessitates a detailed investigation and study of local and broader context (individual, state and federal government efforts) issues that determine ATM at the primary healthcare level.

The first aspect of the data collection exercise was three pronged; i) to explore the experience and perceptions of patients who use primary healthcare facilities through exit interviews (with regards to costs of medicines, financial barriers and availability of treatment / facilities and personnel); ii) To examine the perceptions of bio medical personnel on primary healthcare coordination at the state and federal levels generally and their dispensing/ prescribing pattern; iii) to investigate at the household level, disparities in access to affordable essential medicines for rural / urban populations as well as identify those at risk for inadequate access to essential medicines

The second aspect of the data collection focused mainly on interviewing Pharmacists and employees of NAFDAC, the federal and state ministries of health on regulatory framework for pharmaceuticals in Nigeria as well as to gain insight on supply chain procedures for medicines procurement at the primary healthcare level. The focus here would be on the first aspect of data collection due to its significance to the research questions, while the second aspect would be explored in-depth in chapter six.

The rationale for the selection of study participants (individuals and households) was based on criterion sampling; where respondents were selected due to their proximity to healthcare facilities and availability at the time of the study in various study locations/ facilities.

Secondly, while most of the pharmacists, pharmaceutical company representatives, and employees of the ministry of health were selected based on access, others were selected based on the relativity of their duties/ job descriptions to the enquiry.

For most of the urban dwellers who had busy schedules and unable to grant interviews, questionnaires were emailed to them at different times based on their schedule and they were allowed two weeks to fill out and email back to the research team. Alternatively, every participant was at liberty to fill out same questionnaires online, resulting in 96% participation from the target sample. While the remaining 4% filled out the questionnaires from various locations such as Lagos, Ebonyi, Port Harcourt and Enugu. Generally, the level of response from urban areas was higher because of the introduction of the online questionnaire compared to non-urban respondents who (particularly female Muslims) felt more comfortable participating in focused group discussions and in-depth interviews.

Respondents were asked to complete the questionnaire on the spot and return it to the research assistants. And, for the virtual participants, the google application made it easy for them to complete the questionnaires on the spot without bias or altering their answers. In addition, the google app made it easy to track the location of respondents at the time the questionnaire was being completed.

The respondents scheduled for interviews and focused group discussions were contacted via email a week before and a week after to thank them for their participation and assure them of their confidentiality as well as inform them that they could withdraw their participation at any time. Most of the respondents in non-urban areas were contacted through their local community group and or village chiefs who sent someone to accompany the research team to inspect healthcare facilities and to act as interpreters.

The questionnaires were administered twice to the personal emails of the online respondents and those who signed up for a blog that was created to relate my field experience with non-respondents. The first questionnaire was administered in May, 2015 and quite lengthy and time consuming while the second was administered in August of same year and had open ended and closed ended questions but in a revised and shorter form (appendix 2) which required a shorter time to complete. The essence was to weigh the opinion of non-respondents against that of the respondents and look for similarities and variations in perceptions and experiences.

Gaining access into the state and federal ministries of health for research was quite hectic and not easy. This explains why most of the research respondents and interviewees were included based on availability. Apart from NAFDAC officials and pharmaceutical company's representatives, most of the employees of the FMOH, SMOH and CMS were either not knowledgeable about the subject matter or unwilling to talk about the budgets, regulatory activities of the ministries as well as other issues that bother on control of pharmaceuticals in the country. At the end of the day, the personnel of the ministries of health unwilling to talk about most issues or answer questions, provided government publications, technical documents and reports where they hoped the needed information could be gleaned out. Most of the documents provided by the respondents gave insight on main players, roles and decision makers in the Nigerian health system (healthcare and pharmaceutical industry).

The interviews and focused group discussions were conducted in Hausa and English and later translated into English and transcribed into a field report, then analysed in details in chapter six. During the field work, research assistants were made to take notes during interviews and group discussions while the translators were there to translate further questions into Hausa or give clarity on matters that arose during the interviews or group discussions. Most of the respondents provided subjective and biased information during interviews and group

discussions. However, this information was confirmed and authenticated by the questionnaires which served as a backup for non-urban study participants.

Information collected from respondents was analysed on the spot; crosschecked, read and re-read for inconsistencies and to gain a sound understanding of respondent's perspectives on issues raised. The process of re-reading field diaries and notes ensured that contradictions, new patterns, themes, similarities and concepts were taken note of and followed up.

The information gathered from participants was collected through tape recorders, jottings and notes taken during interviews and focused group discussions. The aim was not to get the 'right' information, rather to look out for and gain understanding of trends/ patterns that describe the experiences and perceptions of households, individuals, health services providers and other stakeholders in the Nigerian health system regarding access to essential medicines and healthcare. Consequently, during data collection, the focus was on whether people are able to get access to quality and affordable essential medicines and in the case where they are unable to get access, possible explanations for the barriers. Secondly, there was also focus on the roles of various healthcare professionals and respective government bodies in ensuring citizens are able to get timely access to quality medicines irrespective of their age, gender, socio-economic status or rural/urban differentials.

#### **4.3 Research Setting:**

The research techniques, instruments, participants and data analysis will be discussed in details below;

Based on a 2006 and 2011 cross sectional surveys that were conducted in Nigeria by the FMOH<sup>617</sup> in collaboration with HAI and WHO, it has been established that majority of the people in Nigeria cannot afford treatment for most of the predominant diseases such as

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<sup>617</sup> Federal Ministry of Health, Nigeria. Policy document



HIV/AIDS, tuberculosis and malaria<sup>618</sup>. However, there seems to be limited data on what people's experiences regarding essential medicines are as well as what other barriers exist to accessing quality and affordable essential medicines in Nigeria. This study was undertaken amongst other reasons, to answer these questions qualitatively.

Because of the aim of the study which was earlier explained, In-depth interviews with bio medical healthcare professionals / pharmacists and out patients were chosen as a tool for data collection. Although earlier mentioned, suffice to say that it allowed me to have insight into the plight of out -patients who were unable to afford or access prescribed medicines.

#### **Religious and cultural constraints:**

Northern Nigeria has the highest population of Muslims in the country and in some parts of Kaduna, Abuja and Nassarawa state which were predominantly Muslim, it was difficult to interview females individually without getting consent from their husbands or family heads. In other Christian communities where the rules regarding interactions with outsiders was lax, we had to get the consent of the chiefs before interviewing community members, In northern Nigeria where data for the study was collected, majority of the population are muslims.

#### **4.3.1. Mapping and Identification of public and private health Centres and Clinics in Abuja, Nassarawa and Kaduna states**

As a data gathering instrument, mapping served the following purposes:

- Was used to identify public and private health facilities / pharmacies, medicines outlets and their locations within the study areas given the fact that statistical data were not readily available on request.

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<sup>618</sup> Federal Ministry of Health, Abuja, (2010). National Policy on Malaria Diagnosis and Treatment

- The existence of medicine distributing chains or distributorships managed by various companies within Abuja, Nassarawa and Kaduna.
- It gave insight on people's perception of essential medicines and Access as well as what has been the prevalent 'medicines Access' trend in the observed areas.

In this study, the focus was on access to quality and affordable essential medicines in public / private facilities and medicines outlets. Thus, all public facilities within Abuja, Nassarawa and Kaduna which provide services to communities within those areas were identified. Some major private pharmacies and medicines outlet whether privately owned or publicly managed were also visited and marked. Guided by information from some local governments in Nassarawa and Kaduna states, statistical records were analysed and used for the purpose of knowing and identifying the number of healthcare facilities that are available in those areas. During mapping, we identified and visited public and private primary healthcare facilities as well as pharmacies and medicines vendors within Abuja, Nassarawa and Kaduna states.

In Abuja within the six (6) local government areas, we identified and visited one hundred and sixty seven (167) public primary health facilities and a total of four hundred and thirty private facilities (430). Thirty medicines outlets were also selected in Abuja.

In Kaduna, out of a total number of twenty two (22) local governments, we identified and visited nine hundred and ninety nine public facilities (999) and a total number of five hundred and fifty three private facilities. Respondents were interviewed in eighteen (18) medicines outlets

Nassarawa state has twelve local governments. Six hundred and twenty (620) public primary facilities were identified and visited alongside two hundred and seventy four (274) private facilities.

However, all the identified primary healthcare facilities (public / private and medicines vendors) were divided into two groups: high and low. The facilities that had high patronage were considered and labelled 'H1 for Abuja, H2 for Nassarawa and H3 for Kaduna. While the facilities with low patronage were labelled: L1 for Abuja, L2 for Nassarawa and L3 for Kaduna state. The facilities with the highest patronage and availability of patients and cooperative personnel (authorised and unauthorised) were selected for the study and this brought the number of facilities to the following:

1. Abuja: out of a total of 167 public facilities, 85 were selected for the study based on the criteria stated above. For the private facilities, 222 were selected for the study. Accordingly, 30 medicines outlets were marked and used for the study.
2. Nassarawa State: out of a total of 620 public facilities, 250 were sampled and used for the study. 150 private facilities were further selected for the study. A total number of twenty medicines outlets and vendors were also selected for the study.
3. Kaduna State: out of 999 public health facilities that were identified and visited, 400 were selected for the study based on availability of patients and personnel. It was noted that most of the public facilities rarely had qualified bio medical personnel, and as a result, people were not willing to patronize them. Out of the 553 private facilities, two hundred and seventy were marked and subsequently used for the study. Eighteen medicines outlets located mostly within Zaria, Kaduna south and Kaduna North were used for the study, bringing the total number of public facilities to 1005, privates-645, and 68 medicines outlets.

### 3.3.2. Questionnaires

For this study, questionnaires were not the main data collection instruments, rather were used side by side with structured interviews and discussions for greater insights and data

validation. There were two different questionnaires; an investigation of biomedical healthcare structures and the general pharmaceutical situation of the study areas were conducted using two sets of questionnaires. The first set of questionnaires were distributed to outpatients who used public / private clinics, medicines outlets and pharmacies while the second set was given to health facility personnel at ministries of health, Public / private healthcare facilities, Nigerian medical association and Nigerian pharmaceutical association. These questionnaires were used to ascertain the country's access to medicines situation at the health facility level by examining the following aspects; pharmaceutical sector, national medicines policy, regulatory system, medicines supply system, medicines financing, patients ability to access medicines at the various facilities, patients affordability and utilization.

Generally, for the first set of respondents, (outpatients who use public / private clinics, medicines outlets and pharmacies) the questionnaires were used to gain demographic information on the distance from their homes to the nearest public / private healthcare facility, and why they might not want to seek medical treatment from the public or private facilities if distance was not a challenge. It also gave the researcher knowledge about the relationship between the location of healthcare facilities and utilisation (which is one of the dimensions of access; physical / geographical and financial accessibility); the quality of medicines found in those facilities and people's ability to purchase them in a timely manner.

The other goals of the questionnaire were to investigate whether quality essential medicines were available and properly labelled in public and private dispensing facilities to treat common conditions at primary care level. Specifically, the study aimed to establish the Number of Prescribed medicines that were on the Essential Medicines List. The focus was on the number of medicines prescribed and the number of medicines dispensed or administered. The study aimed to ascertain whether medicines were adequately labelled, Patient knew how

to take medicines, How long it took the patient to get to the health Facility and how much patients believed in or trusted the efficacy of the medicines they were given.

The questionnaire was divided into three sections; general information, demographic profile of respondents, access and affordability data. The first section contained information on the name of the interviewer; the second was about the age, profession, residential information of respondent, while the third contained questions on essential medicines prescription, labelling, rational use, affordability, acceptability and distance from healthcare facility to respondents' homes.

Respondents were asked a number of questions concerning their interaction with pharmacists or whoever was dispensing medicines at the facility they visited, in particular, health professionals and employees in public / private medical facilities, pharmacies and medicines outlets in efforts to fulfil the needs of the patients. There were no right or wrong answers. And respondents were advised to answer each question to the best of their abilities by ticking the response that best reflected their opinion. The 10 questions were both open ended and close ended. Four, three or sometimes two choices were provided for every question or statement. The choices represented the degree of agreement each respondent had on the given question.

This information helped in drawing conclusions that led to the achievement of the objectives of the research. A total of 1000 questionnaires were distributed to adults (male and female) of all age ranges, within communities located in Abuja, Nassarawa and Kaduna states, using a criterion - based sampling method for surveys of households and individuals situated within distances from the public / private health facilities/ pharmacies and medicines outlets in the three states. The patient exit questionnaires were given to patients who used the facilities that were visited or selected for the study.

Due to the prevalence of respondents who could hardly read or write and their insecurities regarding questionnaires in Kaduna and Nassarawa, questionnaires were administered with caution in these locations. The bulk of respondents who filled out the questionnaires were mainly from Abuja. While respondents in Kaduna and Nassarawa preferred interviews and focused group discussions where they were more comfortable

The questionnaires were distributed to people living within communities in Kaduna, Keffi in Nassarawa state and Abuja metropolis as well as bio-medical healthcare practitioners, pharmacists and medicines sellers who helped in distributing the questionnaires to their clients / patients. The questionnaires spoke of practices supportive of the various dimensions of access to quality and affordable essential medicines and the respondents were given sufficient time to assess the constraints of accessing quality and affordable essential medicines. Their individual understandings and encounters with ATM in practice are crucial to ascertaining its strengths and barriers.

The second set of questionnaire which was designed for facility heads at public / private health facilities, medicine distributors/ suppliers as well as public/ private pharmacies and medicines outlets contained seven (7) sections with a total of forty eight (48) questions on; General information, Demographics, National Medicines Policy, Regulations/ Quality Control/ Counterfeits, Medicines Supply System, Medicines Financing and Rational Use. There were no right or wrong answers. Each respondent was asked to answer each question to the best of his/her ability by ticking and writing down (where necessary) the response that best reflects their opinion. The decision to use both closed ended and open ended questions was due to the fact that open-ended questions helps in the collection of in-depth data by broadening the scope of responses. It largely collects qualitative data and that can be easily computed using content analysis. The basic advantage is that it is often used for performance reviews and in the case of this study, when quantified, it would help in giving insight into the

performance of the Access to Medicines framework in Nigeria with regards to people's ability to have access to the essential medicines they need in a timely manner.

Closed-ended questions were used in the study because it is not time consuming and could be administered more easily. It has a binary advantage in the sense that the 'yes or no' response could easily be scaled down during quantification and analysis. It helps in quantitative data collection and offers strong validation of findings using other techniques. However, its inherent weakness is that it limits the scope of response during data collection by its inability to yield in-depth information.

For ease of data interpretation, all the questionnaires were scaled down to two groups; the open ended responses and closed ended responses. The open ended responses were interpreted using content analysis. While the closed ended responses will be interpreted using correlation and regression analysis in order to determine reliability. These techniques will be used to interpret collected data on the factors leading to insufficient access to quality and affordable essential medicines and strategies employed by the Nigerian government for reducing barriers to ATM where these have been identified in the study in Abuja, Kaduna and Nassarawa states.

#### **4.3.3. Semi Structured Interviews**

The in-depth interviews were conducted by trained research assistants who also served as focused group discussion moderators and observers at the selected healthcare facilities. This involved the use of open ended conversational questions that were translated into Hausa language to guide respondents in answering the questions within the context of the study. In depth interviews were meant to be conducted with thirty (30) people who include personnel and patients in each of the selected facilities. However, due to the prevailing conditions of most of the facilities mainly within Kaduna and Nassarawa, respondents had to be

interviewed based on availability. These interviews gave insight into rational use of essential medicines, prescription patterns of dispensing officers and the challenges people face in accessing quality and affordable essential medicines. It gave insight into the level of intervention by the Nigerian government agencies and helped in ascertaining if there is synergy among all stakeholders in ensuring access to medicines.

Additionally, it helped in determining the prices people paid for medicines and if there were on-going healthcare projects as part of the intervention efforts of the government and other stakeholders in the country. Apart from patients who visited the clinics/ pharmacies and medicines outlets, most healthcare personnel (doctors, nurses, midwives / pharmacists) and medicines suppliers did not wish to be interviewed alone, they preferred to be interviewed in the company of other people (their colleagues). Besides, on a few occasions where they did grant interviews, they were more concerned about anonymity, confidentiality and protection of their identities which was well guaranteed and protected. Footage and video recording of most of the interviews were collected and have been kept but cannot be used without the permission of the participants. The in-depth interviews were interpreted and analysed using content analysis procedure.

A total number of 1500 people were interviewed across all the selected facilities within Abuja, Kaduna and Nassarawa, except for some areas in Zaria, Kaduna South, Sanga local govt area and Zango Kataf where the number of people visiting the facilities refused to grant interviews.

#### **4.3.4. Focus Group Discussions**

Three different kinds of focus group discussions were used in this study to back up the semi structured interviews as a way of enhancing the accuracy, comparability and reliability of the information gathered from the interviews. The discussions were structured to draw attention



to factors affecting access to quality and affordable essential medicines at all levels and dimension; demand and supply side dimensions and as mentioned earlier on in chapter two, to find out the reason for over prescription in a previous research. The three focus groups were divided into the following clusters;

- i. those for mothers with children who were not older than 5 years (paediatrics),
- ii. Pregnant women and those who had recently given birth (reproductive health),
- iii, adult male and females. The reason for this grouping was based on the fact that previous research had indicated that essential medicines were expensive and insufficient for children, reproductive health and a number of other special diseases / conditions in other developing countries. Hence, since those findings could not be generalised nor applied to the medicines situation in Nigeria due to the complexity of the ATM framework and its variations across countries, this study took cognisance of those and accordingly, investigated the availability of paediatric medicines and those for reproductive health amongst others. Each group was made up of ten people except for those of the women that was subdivided into two different groups; group A and B. people were picked from settlements, pressure and peer groups within the various localities.

**4.3.4.1.** Focused Group Discussion with mothers who have children; 0- 5years (paediatrics)

Focused group discussions were held with mothers or care givers who had children and used the selected facilities for the health needs of those children. In Kaduna state, focused groups discussions were held in Birnin Gwari, Igabi, Chikun, Kaura, kagarko and Zango kataf LGAs. In Nassarawa state, group discussions were held in Karu, Obi, Akwangha and Nassarawa Eggon LGAs. In Abuja, focused groups discussions were held in Amac, bwari,

and Gwagwalada LGAs. The reason was because most of the mothers and caregivers refused to be interviewed alone in some locations. Separate focus groups sessions were held with mothers of children with disabilities and special needs / health conditions such as autism, polio etc. Each of the three (3) focus group sessions had ten (10) participants. Moreover, one of the recruited female research assistant moderated the dialogues during the sessions. The interview guide used for the in-depth interviews guided the discussions.

#### **4.3.4.2. Focused Group Discussion with women**

Separate focus groups sessions were held with expectant mothers and pregnant women living within selected communities. Each focus group session had ten (10) participants. Moreover, one of the recruited female research assistant moderated the dialogues during the sessions. The interview guide used for the in-depth interviews guided the discussions. The focused group with women was held in Lafia, Abaji and Zaria in selected facilities / locations. In each selected facility, the group was made up of 10 women who had given birth at some point , was expecting, trying to conceive or interested in family planning. The purpose of this session was to talk over the difficulties they encounter while trying to access medical treatment / medicines for their reproductive needs. It was also intended to discuss their opinions on what the basic needs of the communities are, regarding access to medicines as well as the areas that require urgent attention by the local governments and other stakeholders.

#### **4.3.4.3. Focused Group Discussion with Adult males / females**

The focused group discussion with adult males and females was necessary due to the fact that most of the medicines on the essential medicines list in Nigeria were mostly for adults and the newly introduced health insurance schemes covered basically working adults and not all their dependents. The discussion was divided into two sub groups given the fact that some

men dominated the discussion and never gave others the chance to speak. Secondly, some women were afraid of others whom they perceived as financially buoyant and (afford medicines irrespective of the cost). Each of the two groups had four participants. The discussions were held at facilities in use- Abuja, Keffi – Nassarawa and Gumel – kaduna. The aim was to discuss their views on the challenges they faced whilst trying to access the medicines they need either as individuals or for their families, prescriptions etc. Discussions were also held on areas that needed improvement and how the government can intervene and save lives in a timely manner.

The other discussions and interviews were meant for bio medical personnel and pharmacists, held in Abuja at the lobby of a guest house and were moderated by two (2) members of the research team; a male and a female. The aim was to know their opinions on the level of interventions by the various government agencies and why. It was also meant to ascertain medicines supply procedures and other factors that could pose a challenge to people's ability to access quality medicines when they needed it.

Generally, respondents' age ranged from twenty five (25) to sixty five (65). The mean age was thirty five (35). Participants were students, men and women, employed and unemployed , housewives, medical health personnel, community people, other people who were either working at the selected facilities or receiving treatment but could be considered stakeholders in the study.

#### **4.4 Respondents / Participants and Sampling Method**

Katzenellenbogen et al<sup>619</sup> defines a study population / participants as an evidently distinct group from which the researcher wants to gather information and make conclusions about. He opined that this group of people (it could be animate or inanimate ) should be visibly marked out with regards to the

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<sup>619</sup> Katzenellenbogen, JM, Joubert, G & Abdool Karim, SS. (1997). *Epidemiology; a manual for South Africa*. Cape Town: Oxford University Press.

place and time as well as other factors that are considered significant to the study. The target population for this study includes all patients who use public / private primary healthcare facilities and pharmacies, medicine suppliers/ distributors, policy makers as well as trained or untrained (authorised or unauthorised) bio medical personnel who dispense medicines to patients whilst working in the selected public / private primary health facilities in Abuja, Nassarawa and Kaduna states at the time of the study.

In order to determine whether essential medicines were available within public/ private facilities; correctly dispensed and labelled, whether people used medicines rationally; had access to quality and affordable Essential Medicines in the right dosage and within the appropriate time, a total of 1200 questionnaires were purposefully distributed to respondents within public/ private clinics, pharmacies and medicines outlets in Abuja, Nassarawa and Kaduna. The inclusion criteria for participants were the following; ethnic uniformity, use of healthcare facility, experience with the medicines supply or distribution agencies in the study location, inaccessibility or people resident within the communities visited, and familiarity of the research assistants with the study locations.

Given that the study was meant to investigate in depth, access to quality and affordable essential medicines by identifying all sources of variation, all participants who qualified for sample selection were both adults and children and were using or within the healthcare facilities / medicines outlets at the time of the study. The selection criteria ensured the participants understood why they were selected and also helped in achieving the aim of the study. The study was conducted during the Boko haram onslaught on Abuja and Nassarawa state and people were a bit reluctant to participate out of fear and due to the curfews in most areas. Also, for security reasons and due to the rain, transportation and financial constraints, we were unable to cover all the pharmacies and most of the primary healthcare facilities in Nassarawa / Kaduna and within the outskirts of Abuja. There were daily reports or field dairy written and kept by all research assistants, which were later compiled into one

The criterion based sampling was used in selecting research participants. Based on the criteria, all patients who used the selected healthcare facility, available during the study, and lived within the

study locations either as indigenes or workers had equal opportunity to participate in the study. Due to ethical considerations, the following procedures guided the selection of research participants; the goals and uses of each data collection tool and the general objective of the study was defined, after which the target population were defined and members listed down within the context of hospital consent ( considering the fact that most of the facilities were medical organisations, we got the doctors/ dispensing nurses or pharmacists to ask patients whether they wanted to fill out the questionnaires and to be interviewed. The numbers assigned individuals were jotted down on cut out papers and compiled in a master list, then drawn from boxes. This was done till the ideal sample was gotten.

#### **4.5. Data interpretation/analysis tools**

Research participants/ respondents were asked to complete the questionnaires. Data sets were interpreted and analysed using the most suitable techniques. Below is an outline of the various techniques that was used to interpret and analyse the various data. For the interviews, focus group discussions and closed ended responses, the most suitable form of data analysis that will enhance retention of vital information were used. That is, making sure that valid and reliable data was secured at the end of the data analysis.

##### **4.5.1. Content analysis**

Content analysis dates back to the 1950s, although time consuming, it helps in identifying the intentions, focus or communication trends of an individual, group or institutions<sup>620</sup>. According to Brubaker & Thomas<sup>621</sup> and Carley<sup>622</sup>, the aim of content analysis is to analyse communications either in text format or oral interviews form in order to answer descriptive or interpretive questions. In answering descriptive questions, content analysis focuses on the

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<sup>620</sup> Berelson, B. (1971). Content analysis in communication research. New York: Hafner Publishing Company

<sup>621</sup> Carley, K. (1990). Coding choices for textual analysis: A comparison of content analysis and map analysis. Unpublished Working Paper.

<sup>622</sup> Robert Murray Thomas, Dale L. Brubaker. (2000). Theses and Dissertation: A Guide to Planning, Research, and Writing. Greenwood publishing group

content of the communication, whereas, for the interpretive questions, it focuses on what the content of the communication implies by looking at words or phrases that occurred constantly as well as their relationship. It works by creating a list of concepts or a list of key words that occur frequently in most of the responses (in text form or oral interviews) after which Maps are created with the aid of computer and the data analysed based on the frequency of the occurrence .

In this study, content analysis was used to interpret and analyse the focused group discussions, interviews and the open ended response from the questionnaires. FGDs are used mostly because it helps participants interact in a way that produces data that is not possible from individual interviews. The aim was to examine the presence of words related to the research question and to establish the number of words used to describe ATM and to also find out whether there is a strong presence of positive or negative words used in relation to ATM in Nigeria.

During data analysis, the interaction of the respondents helped in giving more insights on some of the trends and patterns that were not visible during interviews. Some of the major themes and concepts in written responses and FGDs that were counted are; 'expensive, 'it was costly', 'far', 'I could not afford it', 'high cost', 'I do not recognise the brand', 'prescription' 'number of medicines prescribed', 'prescribed and administered', distance to facility' 'cost of transportation', 'medicines adequately labelled', 'essential medicines policy', 'medicines reliably of good quality', 'financial obstacles', 'medicines on the shelf', 'counterfeits', government intervention'. These themes and concepts were consistent with questions asked as indicated in 3.2. During the coding process, each theme / concepts was counted based on the number of times the theme / concept appeared.

The essence of using triangulation was to ensure validity and accuracy of data. Statistical data from the quantitative method (questionnaires and interviews) were similar to the patterns and trends that emerged from the qualitative method (focused group and observations). The application of both research methods produced similar results with minor variations. For instance, findings from the participant observation validated and reinforced the accuracy of participant's perspectives and perceptions of access as evident from the survey. Applying both methods gave an accurate picture of ATM issues as well as corroborating qualitative data given the paucity of data on ATM in the study areas.

Findings from rural areas in Nassarawa followed a similar pattern when compared to Kaduna and the FCT. When aggregated, findings from survey FGD, interviews and observations pointed to same conclusion. Even though applying a mixed approach necessitated repeated variations and data analysis, it increased the validity and credibility of study results as well as help in establishing recurring patterns and trends.

At the end of data collection, the complexities of access to essential medicines were brought to the fore as a result of applying a mixed approach. Although the process was quite rigorous it yielded a more accurate, detailed, and balanced picture of the ATM situation in Nigeria. The few variations and irregularities from multiple data sources helped in uncovering subtle patterns / trends. E.g. the discussions with each group gave insights into their perspectives on medicines availability, affordability and also brought out patterns that pointed to rural-urban differentials in access.

The most recurrent pattern / trend that emerged are rural-urban differential in access and this was as a result of the application of both quantitative and qualitative research methods. Observations, interviews and FGD from rural areas were compared to questionnaires from urban areas to develop insights and broader understanding of how rural and urban dwellers

view and experience access to medicines. Questionnaires and feedback from interviews and FDG were compared to determine possible areas of convergence and divergence. These corroborative findings from both methods helped in reaching conclusions and also provided a clearer context of access to medicines situation in Nigeria. Generally, the diversity a quantity of data from the mixed approach added depths to the study.

## **4.6 Ethical Considerations**

### **4.6.1 Cover Letter**

A cover letter accompanied the questionnaires and introduced the study, its purpose to participants and requested them to participate. The letter also provided guidelines on how to fill out the questionnaire. Research participants were not entreated to write their name or any other form of identity in the questionnaire in order to ensure that their identity could not be linked with their individual responses (Burns & Grove 2001:430). The cover letter requesting participation by patients, bio medical health personnel and other stakeholders in the pharmaceutical sector in the study is included as Annexure to thesis. The ethical issues that were briefly mentioned in chapter one is expanded below.

### **4.6.2. Research Ethics**

Considering that this research involved the participation of humans, particularly, people living and working within communities in Abuja, Kaduna and Nassarawa states in the volatile Northern Nigeria, there was strict adherence to social science ethical standards. While completing the questionnaires, research participants/respondents were asked to omit their names as a way of ensuring their safety and confidentiality as well as protection of their identities and privacies. Voluntary consent of all selected participants was sought and they were made to understand that they could withdraw from the research at any time. To secure



their consent, vital details of the research such as the objective and purpose was communicated to them in the language they understood. After thorough clarification, the research participants understood the significance and rationale of their participation and consented willingly. Participants of the focused group discussion were made to declare not to reveal whatever was discussed outside the discussion group for the safety of all concerned.

Final year students of sociology in Nassarawa state University keffi who understood the rudiments of social science research and spoke Hausa language were recruited as research assistants for the research. They were trained on the ethics and data collection methods of social science research as outlined in the design and methodology of the research.





## **CHAPTER FIVE: RESEARCH FINDINGS**

### **5.1. Introduction**

This research was aimed at examining access to quality and affordable essential Medicines in Nigeria. The focus was to have in-depth understanding of access to essential medicines as well as the factors that affect or influence access within the Nigerian healthcare system. The research was undertaken in Abuja, Nassarawa and Kaduna states of Nigeria; conducted during the rainy season and lasted for a period of six months –from April to September 2014.

Using available data from state ministries of health, National primary Health care Agency, study participants (field work) ; survey respondents, households, out patients, interviewees at ministries of health , pharmaceutical supply chain personnel, bio medical personnel, pharmacists, medicines vendors, and selected primary healthcare facilities, this study also analysed the percentage of people within Abuja, Nassarawa and Kaduna who are able / unable to access the essential medicines they need and when they need them. Part of the study was to gain insight and understanding of people's perception and experiences of access to essential medicines, medicines availability and how much they paid for medicines within the study areas of Abuja, Kaduna, and Nassarawa states.

The research findings presented in this chapter provides an accurate and in-depth explanation of the data from the field research. It starts with a summary of results from all stakeholders and research participants in the Abuja, Kaduna and Nassarawa states. It then looks at each organisations /participants research results in detail. The results will give an insight into how people's experiences and perceptions mediate access to medicines and how that impacts upon prescription which is a factor of access.

## **5.2. STUDY AREA –NIGERIA, KADUNA, ABUJA AND NASSARAWA STATES.**

### **5.2.1. Nigeria**

#### **5.2.1.1. Geography and Demography**

Archaeological evidence suggests that before the advent of the British colonial powers in Nigeria and the subsequent amalgamation of the area in 1914, people had been living in that

area for over 2500 years with diverse cultures and languages<sup>623</sup>. However, contemporary history suggests that the formal consolidation of British rule by Lord Lugard, aided by the spread of Islam in the 19th century in that geographical region gave birth to an entity called Nigeria (Nicolson, 1969). Located at the eastern border of West Africa with a surface area of 356,999 square miles, Nigeria lies beside the coast of the Gulf of Guinea with a population size of 170,123,740 people. Surrounded on the West by Republic of Benin, Niger & Chad on the North and Cameroun on the East, Nigeria is considered one of the biggest economies<sup>624</sup> in Africa due to its huge natural resources and population density<sup>625</sup>

With English as the official language, the country is multi ethnic, a mix that comprises nearly 250 ethnic groups with a few leading and prominent ethnic groups such as ; Hausa and Fulani who constitute 29%, Yoruba: 21%, Igbos: 18%, Ijaw: 10%, Kanuri:4%, Ibibio: 3.5%, Tiv :2.5% and other minorities. Known as a country that practices the federal system of government, Nigeria's confederation comprises a central federal government, thirty-six(36) states with governors and seven hundred and seventy-four (774) local government councils<sup>626</sup>

Just like its cultural diversity, Nigeria's ecological regions could be classified into three; the dry savannah, tropical forests, and coastal wetlands regions. This ecological diversity also influences the people's way of life and their vocations. First, the dry savannah region which is characterised by open grasslands is found within the Northern region of the country and also accounts for the interest of the people who are predominantly Hausa, Fulani and Kanuris, in cattle rearing and cultivation of cereals<sup>627</sup>. The second is the tropical forest which makes it easy for the Yorubas and Igbos to cultivate vegetables and fruits. The third is the coastal

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<sup>623</sup> Obaro I., (1977). The Fall of Nigeria: The British Conquest. The International Journal of African Historical Studies Vol. 11, No. 1 (1978), pp. 170-172

<sup>624</sup> Nigeria Data Portal [online]Economic outlook for Nigeria , 2012-2015

<sup>625</sup> Nigeria Data Portal [online] retrieved from: <http://Nigeria.opendataforafrica.org>

<sup>626</sup> National Bureau of Statistics

<sup>627</sup> Ibid.

wetlands which is good for fishing and made up of most of the Niger Delta states and ethnic groups such as the Ilajes, Ijaws, Urhobos, Kalabaris, Isokos, Ibibios, Itsekiris, Ukwanis, Ogonis etc. Beyond the environmentally determined vocation and occupation of the people, over 50% of Nigerians engage in subsistence farming and with a few engaging in mechanised farming and export production<sup>628</sup>. This perhaps, explains why the economy is currently ranked one of the biggest in Africa even though inflation rates and unemployment remain high despite growth projections and the implementation of macroeconomic development strategies.

#### **5.2.1.2. Socio Economic Characteristics**

Due to its ethnic diversity, Nigeria experienced governance challenges over the years in the form of; military takeovers/dictatorship, bribery, corruption, lack of transparency and accountability in government. However, the country finally consolidated a democratic government in the early 1990s, although without the elements of participatory decision making which has been the bane of its instability and socio- economic issues (World Bank Country Brief, 2012).

Furthermore, even with a high population density, coupled with a growth rate of 2.53% between 2011 and 2012, this 'giant of Africa' has not lived up to the expectations of the rest of Africa and other world leaders as a result of the indelible scars of socio economic instability left by frequent change of government and regimes (CIA world fact book: 2012; Federal office of statistics data: Nigeria & Japan International Cooperation Agency: Country WID profile: Nigeria)

What's more, despite huge revenue from petroleum products, the economic performance and human development indicators of Nigeria are worrying. The country is categorised as one of

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<sup>628</sup> Opcit

the 20 countries that is worst hit by poverty; Gross Domestic Product per capita is approximately US \$300 annually, literacy level (adult) is about fifty 57%, life expectancy estimated at fifty three (53) years, average annual inflation rate is twenty per cent (20%) at 11.6 between 1990- 2010. Unemployment rate as of 2011 is 23.9%, distribution of income is 4.4 while current account balance is 8.4 %( The World Bank Country Profile, 2010). Furthermore, poverty is widespread because almost 64% of Nigerians (estimated) live below the international poverty line of less than US\$1.25 per day, between 2000 -2009<sup>629</sup>.

For instance, with health expenditures of about 5.8% of GDP in 2009, the risk of major infectious diseases is still very high in the country. Yet, even with such high risks, 2008 demographic reports clearly stated that the ratio of Physicians to patients is 0.395 per physicians to 1,000 people, while at 2004, the density of hospital bed versus population was estimated at about 0.53 beds per 1,000 people<sup>630</sup>. In addition, the country has a very weak rural healthcare system with shortage of human and material resources such as trained bio medical personnel and broken-down or ill equipped infrastructures. To worsen the situation, the location of most rural communities in remote areas without good access roads increases the socio-economic challenges facing people in the country (World Bank 1995, UNDP 2006)

Before the presentation of the profile of the study area, it is essential to provide wider national profile. This section therefore begins with a profile of Nigeria bringing the country profile up to date to allow a useful socio-economic context within which to make a rich understanding of the issues examined in this study.

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<sup>629</sup> National Bureau of Statistics (2005) 'Poverty Profile for Nigeria', <http://www.nigerianstat.gov.ng/Connections/poverty/PovertyProfile2004.pdf> accessed 20th November 2007.

<sup>630</sup> CIA. (2012). World fact book.

### 5.3. Abuja

Built in the 1980s, Abuja became the capital city of Nigeria in 1991. Presently ranked as the tenth populous city, Abuja Federal Capital Territory has a population of 776,298 and four local governments: Abaji, Bwari, Gwagwalada, Kuje, and AMAC. Of the four local governments, AMAC has seven districts: Wuse District, Central District, Gwarimpa District, Garki District, Maitama District, Asokoro District, and Durumi District<sup>631</sup>.

Abuja FCT has the highest number of civil servants in the country as a result of being the capital city of Nigeria. Due to limited resources to meet the increasing population; high cost of housing and the growing demand for affordable accommodation, the FCT and neighbouring states (Nassarawa and Kaduna) have witnessed rapid urbanisation and development of new areas, leading to the emergence of satellite towns which tend to mirror the extreme paradox of poverty in plenty as aptly described by BBC news<sup>632</sup>.

Despite having a good number of public and private healthcare facilities due to its strategic location as well as being the location where a major declaration was made in 2001 for the mobilization of stakeholders and relevant sectors in ensuring 15% of public expenditure for health<sup>633</sup>, healthcare remains economically inaccessible while information about the availability and efficacy of medicines are unreachable to majority of non-civil servants, poor households and vulnerable communities.

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<sup>631</sup> Federal Ministry Of Health (2011)Federal Capital Territory (FCT) Health Facilities Listing A Directory of Health Facilities in Nigeria.

<sup>632</sup> "Life of poverty in Abuja's wealth". news.bbc.co.uk (BBC News, Tuesday, 13 February 2007)

<sup>633</sup> The African Union (2001). Abuja declaration. African Summit on HIV/AIDS, TB and other related infectious diseases. Abuja, Nigeria. 24- 27 April, 2001.

#### 5.4. Nassarawa State

Nassarawa was created out of Plateau state in 1996. With Lafia as the capital, Nassarawa state shares boundaries with Kogi and Benue States on the Southern part, Kaduna State on the Northern part, Abuja FCT on the West then Plateau and Taraba states on the East<sup>634</sup>. The geographical location of the state is within Latitude 8° N and Longitude 8° E and consists of mostly Gwandara, Tiv, Ebira, Aguta, Alago, Basa, Eggon, Kanuria, Gbagyi, and Kanuri people. Most of these people are also spread across the boundaries with other states and speak 29 languages with the dominant ones being Lijili, Gade, Eggon, Basa, Gade, Ham, Goemai, Agatu, Basa, Gbagyi, Gade, Kofyar and Gwandara. With a population estimated at 1, 869, 37<sup>635</sup>, the state has 13 local government areas: Karu, Akwanga, Awe, Keffi, Nasarawa Egon, Doma, Kokona, Wamba, Keana, Nasarawa, Lafia, Toto, and Obi<sup>636</sup>. The notable occupations of Nassarawa state people are farming and salt making.

Even though data has shown an increase in the distribution of healthcare facilities within a ten year period in the state (2000 -2009)<sup>637</sup>, Nassarawa state still grapples with meeting the healthcare demands of its increasing and mostly rural population.

#### 5.5. Kaduna State

Kaduna State is located within the North-West zone of Nigeria. With an estimated population of approximately 7, 930,856 people<sup>638</sup>, Kaduna have been classified as the third largest state

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<sup>634</sup> Nassarawa State Government Official website (online) retrieved from <http://www.nasarawastate.com.ng/data.htm>

<sup>635</sup> National Bureau of Statistics 2006 census figures

<sup>636</sup> USAID, ACTIONAID & Catholic Relief Services [online] Nassarawa State. Retrieved from: [http://smileprojectnigeria.crs.org/?page\\_id=98](http://smileprojectnigeria.crs.org/?page_id=98)

<sup>637</sup> Nengak D.M., & Osagbemi M.,(2011). The Spatial Pattern of Health Facilities in Nasarawa State, North Central Nigeria. [Online]. Journal of Sustainable Development in Africa, Vol13, No.6, 2011). Retrieved from: [http://www.jsdafrica.com/Jsda/Vol13No6\\_Fall2011\\_B/PDF/The%20Spatial%20Pattern%20of%20Health%20Facilities](http://www.jsdafrica.com/Jsda/Vol13No6_Fall2011_B/PDF/The%20Spatial%20Pattern%20of%20Health%20Facilities)

<sup>638</sup> Nigerian Censor Board (2006) Census



in the country in terms of landmass and population capacity<sup>639</sup>. Even though the exact number of its ethnic composition remains unknown, it is estimated that there are between fifty nine to sixty ethnic groups in Kaduna, spread across its twenty three local government areas<sup>640</sup>. The state has Hausa, Gwari and Gbagyi ethnic extractions as the dominant ethnic groups, with a good number of Igbos and Yorubas who have a history of long term sojourn. Of this ethnic mix, Hausa Moslems are predominant in the Northern part of the state while Southern Kaduna has a predominant Christian population.

This state whose economic main stay is agriculture (with majority of the people living in non-urban areas and engaging in farming) is also rich in steel, textiles, aluminium and machinery has been described as “the industrial centre of Northern Nigeria” due to the high level of economic activities which precedes that of other Northern states and huge deposits of natural resources such as gold, siltimanite graphite, serpentine, kyannite, clay, asbestos and amethyst graphite<sup>641</sup>.

With 23 local government areas, 1,011 Primary Health Care Centres, malaria elimination initiative and implementation of a policy that ensures free treatment for pregnant women and Under 5 Children, Kaduna state ranks high in terms of defining and putting its healthcare principles in context, vis a vis; Access (geographical and financial) to care; Equity in provision; Partnership for health development and Community Participation at every stage<sup>642</sup>.

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<sup>639</sup> Kaduna State Official Website. Retrieved from:<http://www.kadunastate.gov.ng/index.html>

<sup>640</sup> Encyclopaedia Britannica. Kaduna state, Nigeria. Online. Retrieved from:

<http://www.britannica.com/EBchecked/topic/309498/Kaduna>

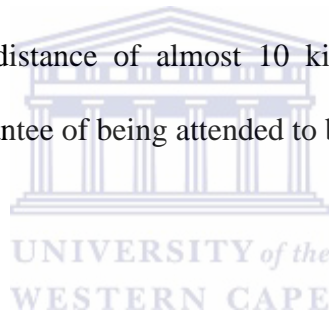
<sup>641</sup> Opcit.

<sup>642</sup> Kaduna State Ministry of Health and Human Services. (Online). Retrieved from:

<http://moh.kd.gov.ng/periodic-reports/>

However, despite these well-conceived healthcare policies and evidence of client satisfaction in most urban areas<sup>643</sup>, poverty levels, though lesser than the zonal geo-political average, remains very high<sup>644</sup>. In addition, access to medicines appears challenging due partly to the shortage of resources and qualified personnel in most parts of the state, and non-compliance with healthcare policies in other parts<sup>645</sup>.

Available data from the state ministry of health suggest that fewer than 20% of pregnant women give birth in a healthcare facility and out of those only a fifth have their deliveries supervised by a trained health professional, while the number of vaccinated children stands at 22%. These poor health statistics and outcomes could be attributed to uneven distribution of level A and B facilities where clinics are not proportional to the population distribution, hence, people have to walk a distance of almost 10 kilometres to the nearest clinic or pharmacy where there is no guarantee of being attended to by a qualified personnel.



## **5.6. Summary of findings**

The issues surrounding the concept of access to quality, efficacious and affordable essential medicines are complex and could be confusing especially when it comes to defining the challenges. Its multifaceted nature was manifested in the views of healthcare professionals, pharmaceutical supply chain personnel (medicines distributors) and out patients resident in Abuja, Nassarawa and Kaduna states. Each of the sample population had its own opinion

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<sup>643</sup> Sufiyan M.B., Umar A.A., Shugaba A., (2013) Client Satisfaction with Antenatal Care Services in Primary Health Care Centres in SabonGari Local Government Area, Kaduna State Nigeria. *Journal Of Community Medicine And Primary Health Care* Vol. 25, No 1, March 2013.

<sup>644</sup> Kaduna State Government (2010). Strategic health Development Plan ( 2010-2015). Kaduna State Ministry of Health policy paper, March 2010

<sup>645</sup> News Agency of Nigeria, 2015, January 28. "Kaduna State Government to address shortage of health professionals", Hussaina Yakubu. [online] Retrieved from: <http://www.nannewsnigeria.com/kaduna-state-govt-address-shortage-health-professionals>

regarding factors that hinder access to medicines and how these issues could be addressed in their particular contexts. In this study, access to medicines was evaluated based on the WHO Alma ata declaration of 1978 and the 2008 African Commission Resolution on Access to health and Needed medicines in Africa which emphasised that “the right to health is not limited to a right to health care but included all underlying aspects of health”; And, as such, urged countries to guarantee the full scope of access to needed medicines which included the 4As of ATM as outlined in this study<sup>646</sup>.

Using these resolutions and affirmations of the 44<sup>th</sup> session on Access to health and medicines in Africa as a basis, respondents’ perceptions of ATM were evaluated accordingly. Beyond their perceptions of the factors that hinders access to medicines, facility heads and other bio medical personnel at public / private health facilities as well as public/ private pharmacies and medicines outlets were able to express their views on general facility characteristics, medicines availability, adherence to standard treatment guidelines; rational prescribing and health services provided in the three states.

For ease of data collection, the perceptions and issues surrounding access to medicines in Nigeria was encapsulated into several factors / themes such as National Medicines Policy; Regulations: quality control and counterfeits; Medicines supply system; Medicines financing; Rational use of medicines. These factors were considered during the process of data collection and also used to expand the process for the purpose of collecting information as background to the research.

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<sup>646</sup> The African Commission on Human and peoples’ rights (2008) 141: Resolution on Access to health and Needed Medicines in Africa. Meeting at its 44<sup>th</sup> Ordinary Session in Abuja, the Commission recognized that access to quality and affordable essential medicines is a fundamental component of the right to health and countries signatory to the African Charter had an obligation to provide medicines where appropriate or facilitate access to essential medicines.

### **5.6.1. Data collection**

For ease of data collection and to ensure relevant data was gathered, the mixed research approach of qualitative and quantitative methods was used. Qualitative method was more convenient due to the quest to have an in-depth understanding of ATM generally and factors that affect or influence it within the Nigerian healthcare system. However, quantitative method was introduced and utilised to guarantee the validity, authenticity and reliability of data collected as well to have first-hand knowledge of the percentage of people within the study area who are able / unable to access the essential medicines they need. Part of the study was to gain insight and understanding of people's perception and experiences of access to essential medicines, medicines availability and how much they pay for medicines within Abuja, Kaduna, and Nassarawa states. Furthermore, how peoples experiences and perceptions mediate access to medicines and how that impacts upon prescription which is a factor of access. In-depth interviews with health professionals and out patients helped in understanding the barriers to access within the various facilities visited during the study.

In order to 'witness' the experience of out -patients who were able/ unable to afford or access prescribed medicines, data was collected through in- depth interviews and questionnaires; these methods gave insight and understanding of access to quality essential medicines by people who live within a walking distance of specific health facilities. The focused group discussions and in depth interviews were based on consultations with a group of people who are knowledgeable in the issues and concept of ATM. These people represent the supply and demand dimensions of ATM as well as various perceptions which helped in understanding whether quality medicines are available and affordable in public and private dispensing facilities to treat common conditions at primary level. The consultations and questionnaires drew attention to patients' interaction with prescribing and dispensing officials, pharmacists

and other health professionals / technicians in public / private health facilities involved in efforts to deliver health services to people.

Generally, respondents were selected from communities and homes within walking distance of facilities that were selected for the study; this includes those that were also within proximity of public/ private pharmacies, clinics and pharmaceutical distributors in Abuja, Kaduna and Nassarawa states. Facility heads at public / private health facilities, pharmacies and medicines outlets were selected based on availability, participated in in-depth interviews and filed questionnaires for the following purposes; to obtain information on general facility characteristics, services provided, medicines availability and policy related issues. A total of 1000 questionnaires were administered while 1500 respondents were interviewed across the three locations.

## **5.7. Research Findings**



The Alma Ata declaration of 1978 stated the need for countries to pay full attention to primary healthcare by channelling the world's resources into healthcare rather than spending them on armaments and military conflicts. In line with this 'health for all by the year 2000' declaration, the Nigerian government changed its policy and focused more on organizational reforms in the administration of healthcare within the three tiers of government- federal, state and local government. Pursuant to that course, Nigeria adopted and published its first essential medicines list in 1989 with the objective of ensuring unhindered access to and availability of quality, affordable and efficacious medicines in primary healthcare facilities in the appropriate doses at all times.

Several years later, there is scarcity of scholarly data on the examination of the ATM structure in Nigeria as a component of the Nigerian healthcare system. Previous studies on

healthcare in Nigeria tend to focus more on healthcare financing, human resources, service delivery, infrastructures and impact assessment of healthcare intervention strategies and programs. Yet, whether the adoption of the national medicines policy; essential medicines list has increased access to medicines; and inclusion of the standard treatment guidelines has led to or contributes to better health outcomes and improved access to health care in Nigeria is still questionable. Thus, the objective of the study was to examine the existing access to quality and affordable essential medicines framework in Nigeria, its determining factors (demand and supply side dimensions) and how these intersect with the performance of other essential components of the Nigerian health system.

The factors that hinder access to medicines are universal but not uniform. In the same way, the access to medicines situation in one state or country might be similar but not necessarily represent or reflect the medicines situation in another country-the contexts often differ. Access to essential medicines has no 'one size fits all' approach due to its complex nature. Therefore, in order to properly address the research objectives an extensive and rigorous field work was carried out based on questionnaires and in-depth interviews at two key levels; the **policy** and **operational** level.

The sample population for the **policy level** was employees of the MOH, healthcare facilities and other pharmaceutical supply chain stakeholders. Two basic primary data collection instruments were used – the first was in-depth interviews while the second was questionnaires which were administered to officials of the MOH at the federal and state levels, representatives of pharmaceutical companies, public and private pharmacies to collect information on the following:

- i. National medicines policy**
- ii. Regulations: quality control and counterfeits**

**iii. Medicines supply system (supply / procurement and distribution through CMS and privates**

**iv. Medicines financing (budget and finance division of the MOH**

The questionnaires were used as a guide for in depth interviews which served as the main data collection tool.

At the **operational level**, the sample population were bio medical personnel, medicines vendors, pharmacies and patients / consumers. Questionnaires were administered to health facility managers and individual employees of pharmacies and health facilities for general facility characteristics, services provided; incentives, working condition, implementation of STG and adherence to rational prescribing. Additional data was also collected from healthcare facility records. A separate questionnaire was administered to out-patients to gather information on essential medicines availability, accessibility, pricing, dispensing / prescribing pattern, labelling and adherence to dosage instructions. Generally, the focus was on their interaction with dispensers / prescribers and how prescribing / dispensing pattern and use mirrored on access to essential medicines in the study areas. Data was collected in

The field work was undertaken in Abuja, Kaduna and Nassarawa –between these states, data was collected in 40 local government areas, from 68 public/ private pharmacies / medicines outlets, 1377 public and private primary healthcare facilities, 1100 bio medical personnel, pharmacists / medicines vendors and over 1500 out patients. Data collection was slow due to increasing hostilities between the Nigerian Army and Boko Haram insurgents as well as clashes between farmers and Fulani herdsmen making it difficult for me to personally collect data in some locations. Hence, I had to rely on some local translators and newly recruited health workers (in Some parts of the FCT ; Gwagwalada and Suleja; Kaduna, and Nassarawa States as well as proxy research assistants from Nassarawa state university and Kaduna

polytechnic who helped in interviewing some of the respondents as well as administering the questionnaires unsupervised.

### **5.7.1. Research results: Policy Level – MOH employees, facility managers at public health / private healthcare facilities, public/ private pharmacies and medicines outlets.**

The research findings are based on interviews, focus group discussions and questionnaires which were distributed (based on a criterion sampling) to selected respondents working in federal and state ministries of health and public/ private healthcare facilities / medicines outlets in Abuja, Nassarawa and Kaduna states. Respondents were randomly picked based on availability from each department at the MOH (state and federal) and from various health facilities in Abuja, Nassarawa and Kaduna states.

Respondents were selected in each of the departments based on availability. The goal was to draw information on the structural organisation of MOH, pharmaceutical supply chain stakeholders; their medicines policy objectives, decision-making process, financing in relation to medicines/ medical supplies, pharmaceutical supply chain dynamics and general coordination of healthcare services delivery at the primary care level.

The in-depth interviews and focus group discussions were meant to generate quality, accurate and verifiable information that can clarify the essential medicines agenda in Nigeria – explain the issues and characterize the positions of the Nigerian government, the pharmaceutical companies as well as other stakeholders and broaden the level of public discourse on ATM. The questionnaire was designed in an open-ended and closed ended format and contained 48 questions which were filled out by the respondents without assistance, since they all had some form of formal education. The objective of the study was undoubtedly specified to the



respondents prior to seeking their voluntary consent. A copy of the questionnaire and interview guide is attached in the annexe section.

## 5.7.2. Study Results

### 5.7.2.1. DEMOGRAPHIC DATA

#### Question 1. What is your age?

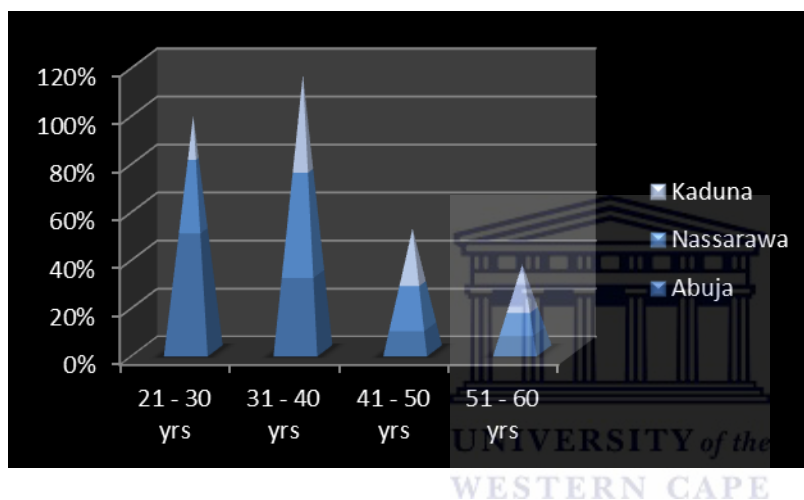


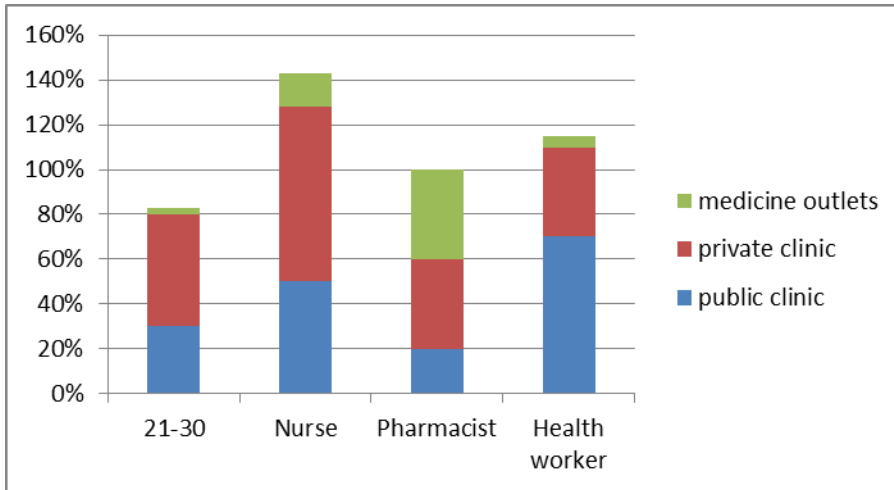
Figure 2: Average age of respondents in Abuja, Nassarawa and Kaduna states

As part of demographic data, ‘age’ was used to make sure that data was representative of all populations given the fact that ATM affects all and no group or community is supposed to be denied access. Specifically, it was meant to provide insight on the dominance of a particular age range in each category of health profession across different types (public, private, etc) of facilities in Abuja, Kaduna and Nassarawa. In Abuja, out of the total sum of all respondents, there was a higher number (50%) of bio medical healthcare professionals within the range of 21 to 30 years. Those of same age range were slightly lower in Kaduna at 18% than Nassarawa which stood at 30%. Respondents between the age ranges 31 - 40 years were more in Nassarawa at 43% than Kaduna- 40% and Abuja- 30%. Similarly, those between the age

ranges of 41 to 50 years were higher in Kaduna at 23% than Nassarawa – 18% and Abuja 12%. Those between the age ranges 51 - 60 years of age were more in Nassarawa at 19% than Kaduna and Abuja respectively. The prevalent trend was that an overwhelming number of the respondents who worked in public facilities in Nassarawa and Kaduna resided in Abuja and travelled on weekends.

This is an unanticipated finding due to the fact that most of the respondents within the age bracket of 21 - 30 years found in Abuja were mostly employed in the private sector or by pharmaceutical companies. While those between the ages of 31 and 40 found mostly in Nassarawa and satellite towns within Abuja were employed in the public sector. Most of the older respondents and healthcare professionals were mostly found in public facilities in urban towns within Abuja, Nassarawa and Kaduna while a few of the young respondents found in remote areas were volunteers or employed in the private sector. Generally, the private sector was more open to employing fresh graduates, interns and technicians than the public sector which explains the pre dominance of those between 21 - 30 years of age in the private sector. There seems to be a preponderance of fresh graduates, young interns, technicians and healthcare workers from colleges of health in public facilities located in rural areas than in urban areas.

## **Question 2. What is your employment status?**



*Figure 3: employment status of respondents*

This question was asked in order to know the availability and number of qualified and authorised personnel in primary health care facilities and medicines outlets. It was also meant to show the type of facility that had the highest number of qualified and appropriate personnel for the level of care/ services offered to the public. The chart above indicates that the number of doctors in private clinics were higher than those in public clinics and medicines outlets. While the number of qualified nurses in public facilities was higher than the number of nurses in private clinics, health workers were predominantly higher in public facilities than private and medicines outlets. There were more pharmacists in private medicines outlets than in public and private healthcare facilities.

**Question3. What is your Employment Organization and level of education?**

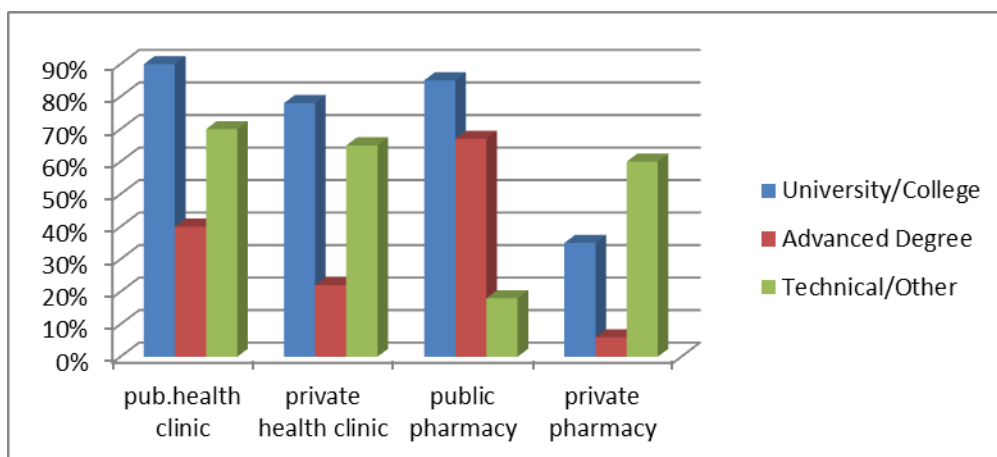


Figure 4. Employment organisation and level of education

Data on employment organization and the level of respondent's education was meant to find out the commonest level of education across all facility types and the highest level of education as well, without much emphasis on location of respondents.

#### 5.7.2.2. NATIONAL MEDICINES POLICY

##### i. Is there a National Medicines Policy (NMP) document?

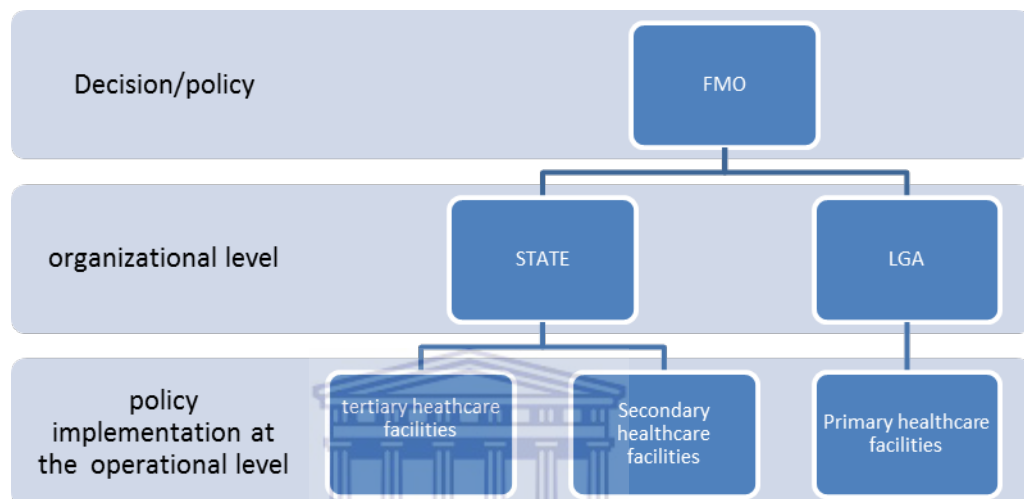
When asked, whether there was a National Medicines Policy (NMP) document, sixty percent of respondents in Abuja answered 'Yes', 30% said 'IDK' while 10% replied 'No'. In Nassarawa state, a vast number of the respondents indicated they did not know. In Kaduna state, 40% replied 'Yes' while the remaining said they did not know. Generally, most of the respondents agreed that there was a national medicines policy document as indicated in the review of literature (see chapter two and three).

##### ii. Is the National medicines policy document a draft or official document?

When asked if the National medicines policy document was a draft or official document, more than half of the respondents from Abuja, Kaduna and Nassarawa replied that they were not sure. Twenty percent said it was an official document. Similarly, a great number of the

respondents in the three states could hardly tell the year the document was last updated. Twenty percent responded that it was last updated in 2008 while twenty five percent replied that it was last updated in 2011.

**iii. Is there a national medicines policy implementation plan that sets activities, responsibilities, budget and timeline?**



*Figure 5: National medicines policy implementation plan*

When asked if there was a National Medicines Policy implementation plan that sets activities, responsibilities, budget and timeline, 30% of respondents in Abuja answered ‘Yes’ the remaining 70% said they did not know. While 88% of respondents in Nassarawa and Kaduna said they did not know. Figure 5 above gives a clear representation of organizational and operational hierarchies in the healthcare sector and how healthcare decisions and those regarding essential medicines are made and implemented. Evidence from research data suggests that in the case where policies are well formulated at the organizational level with the requisite budget allocation, the operational level seems to present constraining factors that are often considered a clog in the wheels of policy implementation/project execution.

While decision making and formulation of strategic plans start at the federal level, execution, policy implementation that ensures equity of access in healthcare services delivery

‘theoretically’ starts from the local governments through Primary Health Centres -PHC. However, findings suggest that there is widespread indifference and dereliction of duties at the local government level, and as a result, the bulk of healthcare services responsibilities have now moved to the other tiers of government. Data suggests that most people at the state level knew little about essential medicines policy document while those at the local government level knew next to nothing about most healthcare policies.

**iv. Are there legal provisions establishing the powers and responsibilities of the medicines regulatory authority?**

When respondents were asked whether there are legal provisions establishing the powers and responsibilities of the medicines regulatory authority, 90% of all respondents in Abuja, Kaduna and Nassarawa responded ‘Yes’. The remaining 10% said they did not know.

**1. Regulations : Quality Control / Counterfeits**

**v. Are the following types of facilities regularly inspected to check compliance with applicable requirements and are there written national guidelines/checklists for the inspection:**

**Manufacturers: Yes..... / No.....**

**Importers and exporters: Yes..... / No.....**

**Wholesalers/ distributors: yes ..... / No.....**

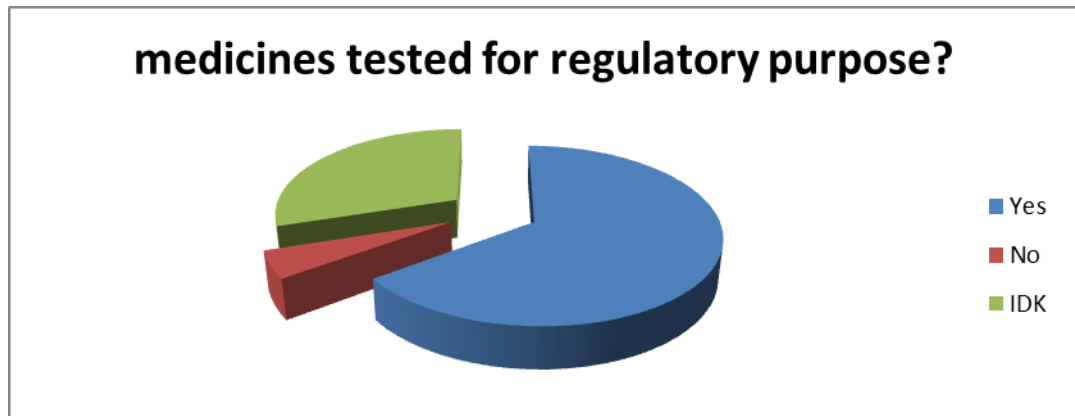
**Retail distributors/ pharmacies: Yes ..... / No..... ?**

Respondents were asked whether facilities belonging to medicines manufacturers, importers, exporters, wholesalers, distributors and retail shops / medicines outlets were regularly inspected to check compliance with applicable requirements and whether there are written national guidelines/checklists for the inspections. All respondents ticked ‘Yes’ to all options presented in the questionnaire regarding the question.

**vi. Is there a quality management system in place?**

All the respondents answered 'Yes'

**vii. Are medicines samples tested for regulatory purpose?**



*Figure 5: medicines testing for regulation*

Most of the respondents ( 60%) answered 'Yes' but a significant number (30%) did not know whether the samples were tested in a government quality control laboratory, private laboratory or that of a local academic institution. This question was asked out of curiosity for further observation and to find out whether bio medical healthcare personnel were knowledgeable about standard regulatory practices within the health sector. In addition, it was meant to give insight into the links (if any) between poor regulatory practices and shortage of medicines given the fact that shortage of essential medicines and the proliferation of counterfeits/fakes are constraining factors in access to essential medicines. This might provide evidence that regulatory practices could play a role in medicines shortage and influx of fakes.

**viii. What was the total number of samples tested in 2013 that failed to meet quality standards?**

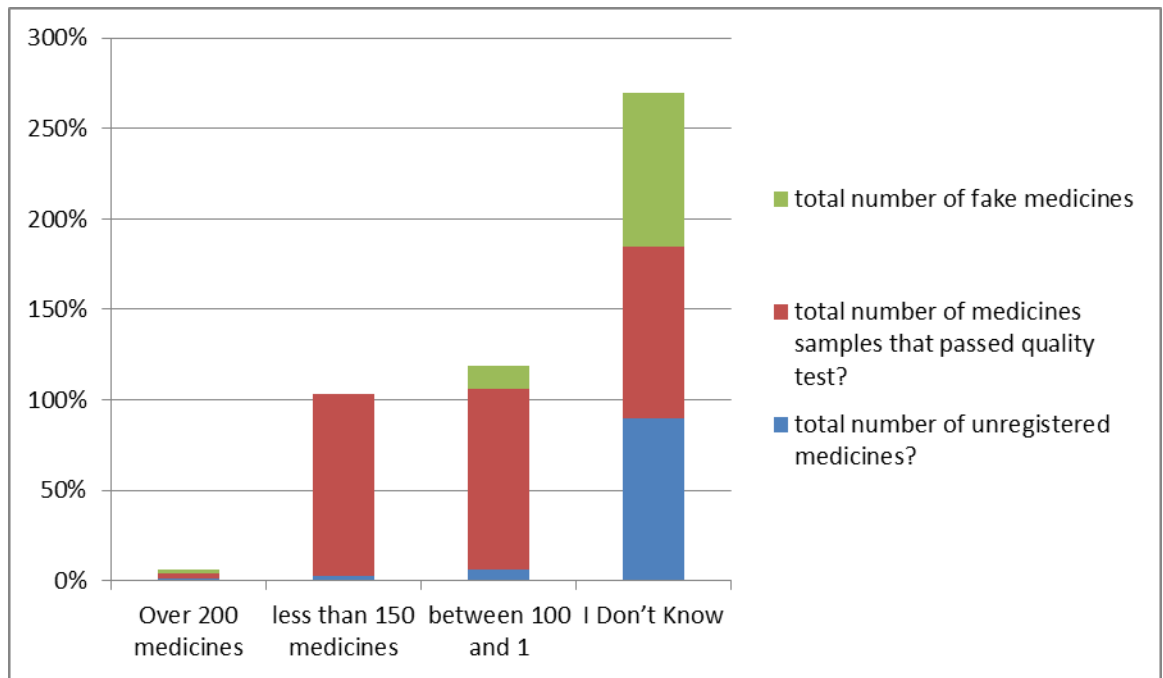


Figure 6: total number of medicines samples that failed quality test in 2013.

An overwhelming number (95%) of respondents answered 'I do not know'. When asked what the total numbers of fake medicines in circulation were, majority responded 'I do not know'. When asked what the total number of unregistered medicines was, again, majority of respondents said they did not know.

This data suggests that while Nafdac is doing a great job in curbing the proliferation of counterfeits in Nigeria, research findings suggest that many people especially within the health sector are unaware of the major milestones and grounds covered by Nafdac. And, this is as a result of not being kept abreast on information regarding Nafdac's activities. Not informing citizens about the kind of counterfeit medicines to look out for suggests the possibility of information gap, disconnect and lack of synergy between most stakeholders in the health and pharmaceutical sector.

**ix. Are there laws, regulations, programmes or procedures for detecting and combating counterfeit medicines in Nigeria?**



When asked this question, 98% of the respondents answered 'Yes' while the remaining two percent said 'No'.

- x. **Describe the sources of information used in detecting and deterring counterfeit, fake and substandard medicines.**

In a closed –ended format where options were given, respondents were asked to describe the sources of information that are used to detect and deter counterfeit medicines, 85% stated that it was reports from national authorities and the pharmaceutical sector, 5% said it was reports from civil societies/NGOs while 10% said it was through reports gathered from the pharmaceutical sector.

- xi. **Are there legal provisions for a. licensing and practice of prescribers b. licensing and practise of pharmacies/medicines outlets?**

All the respondents answered 'Yes' to questions 'a' and b'.

- xii. **Who is responsible for regulating promotion and advertisement of medicines?**

Respondents were given options and asked to state 'who' was responsible for regulating promotion and/or advertisement of medicines. Thirty percent of respondents claimed it was PCN- pharmaceutical council of Nigeria, while seventy percent said it was NAFDAC.

### **5.7.2.3. MEDICINES SUPPLY SYSTEM**

- i. **Is public sector procurement pooled at the national level (i.e., is there centralized procurement for the states / local governments)?**

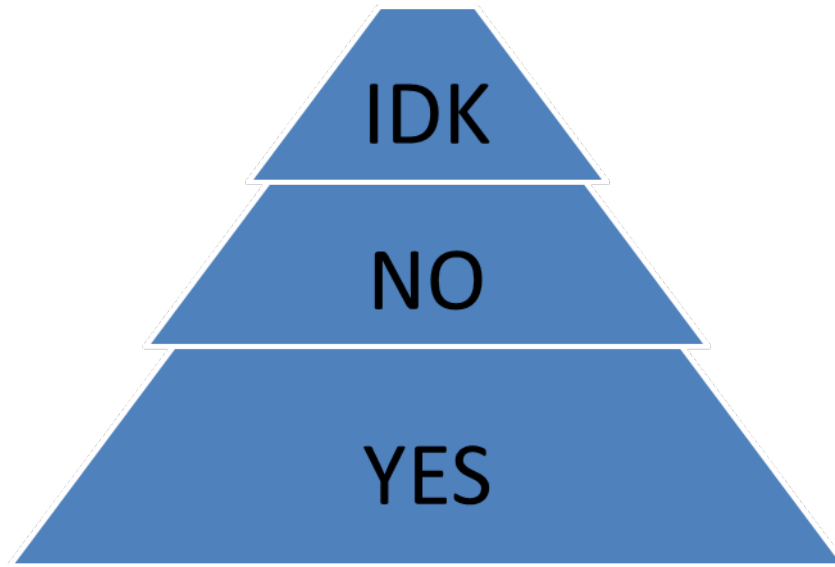


Figure 7: centralised medicines procurement for states / LGAs

60% of the respondents answered ‘Yes’ , 35% claimed it was not- ‘No’ while 5% said ‘ I don’t know’.

**ii. Who is responsible for public sector medicines procurement and distribution of medicines in Nigeria?**

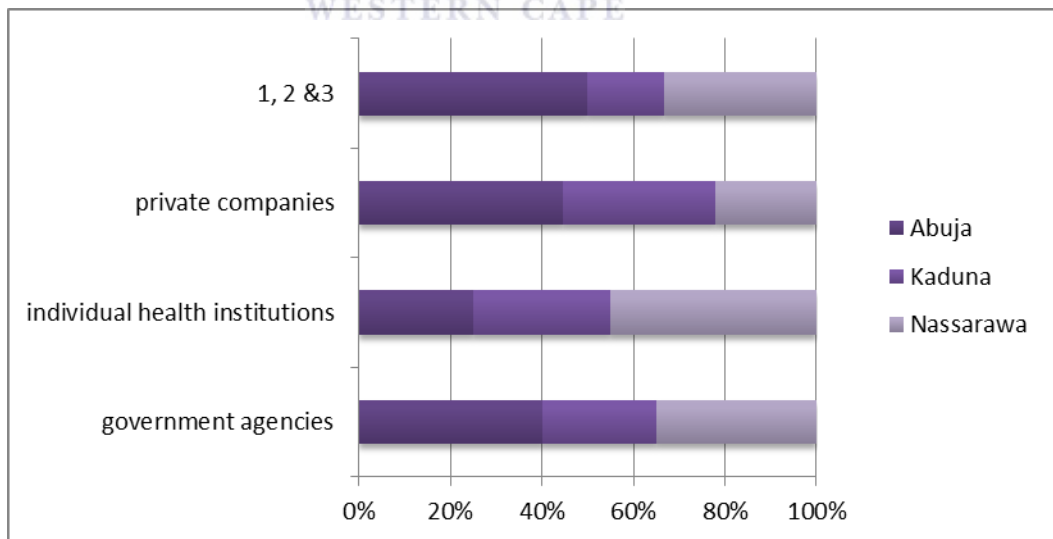
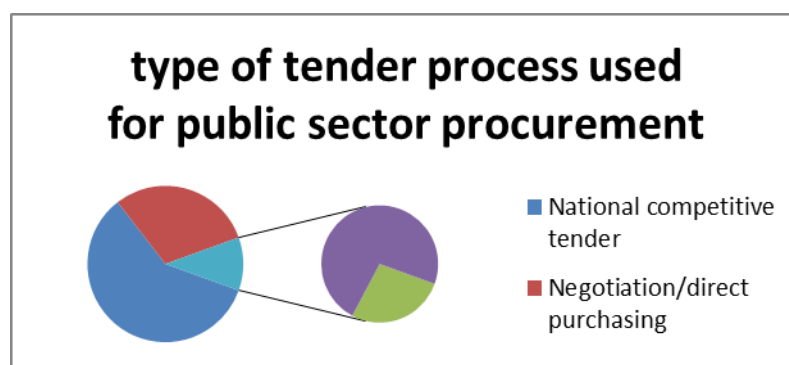


Figure 8: percentage of respondents answers to who is responsible for medicines procurement and distribution

40% said government agencies were responsible for procurement, 20% answered ‘individual health institutions, 18% replied it was private companies while 12% said it was a combination of government agencies, individual health institutions and private companies. The responses gotten from respondents across the three states were summed up to produce an overall percentage of the responses. Also, the responses reflected the perception of respondents regarding medicines procurement and distribution in the various states. There were four options to choose from thus; 1. Government agencies: respondents in Abuja -16%, Kaduna-10%, Nassarawa -14%. 2. Individual health institutions: respondents Abuja -5%, Kaduna -6%, Nassarawa -9%. 3. Respondents who clicked option ‘Private companies’: Abuja -8%, Kaduna - 6%, Nassarawa - 4%. 4. Respondents who ticked options ‘1, 2 &3’: Abuja-6%, Kaduna -2%, Nassarawa - 4%.

In-depth interviews with key officials in the pharmaceutical sector revealed that medicines procurement and storage are often handled by individual healthcare organizations within the two sectors -public and private of the healthcare industry.

**iii. What type of tender process is used for public sector procurement and what is the percentage of the total cost for each?**

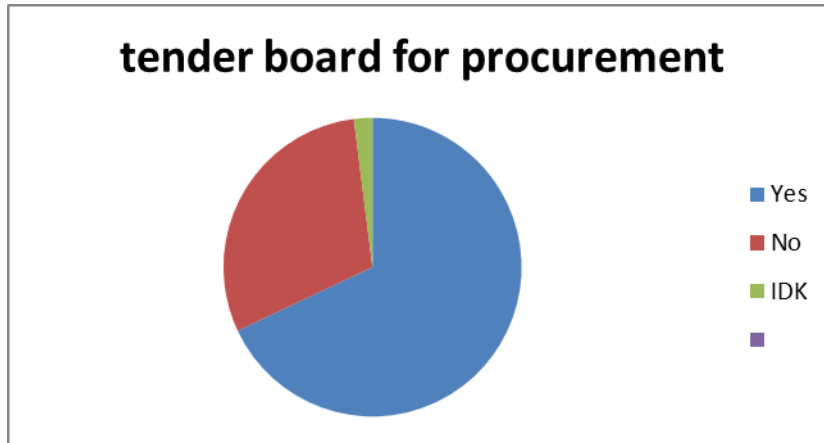


*Figure 9: tender process used for public sector procurement*

59% of respondents answered that it was ‘national competitive tender, 30% replied that it is through ‘negotiation/direct purchasing, 3% replied that it was through international

competitive tender, while 6% said it was a combination of national competitive tender and negotiation/direct purchasing.

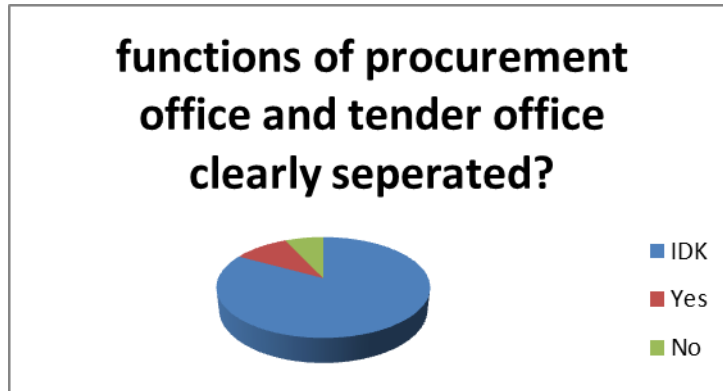
**iv. Is there tender board/committee overseeing public sector procurement?**



*Figure 10: percentage of respondents who knew about the existence of a tender board/committee overseeing public sector medicines procurement.*

As can be seen from figure 10, 68% of respondents acknowledged the existence of a tender board; 30% said there was no board while 2% said they did not know about the existence of a tender board/ committee.

**v. Are key functions of the procurement office and those of the tender board/committee clearly separated?**



*Figure 11: percentage of respondents who were knowledgeable about the separation of procurement office and tender committee functions.*

In figure 11, only 10% knew that the functions of the procurement office and tender board/committee were clearly separated. 83% did not know, while the remaining 7% said their functions were not clearly separated.

**vi. Are members of the tender board staff/officials of the government procurement agency?**

60% said yes, 35% said 'No' while 5% said they were not sure.

**vii. Does public sector medicines procurement use the WHO Prequalification system?**

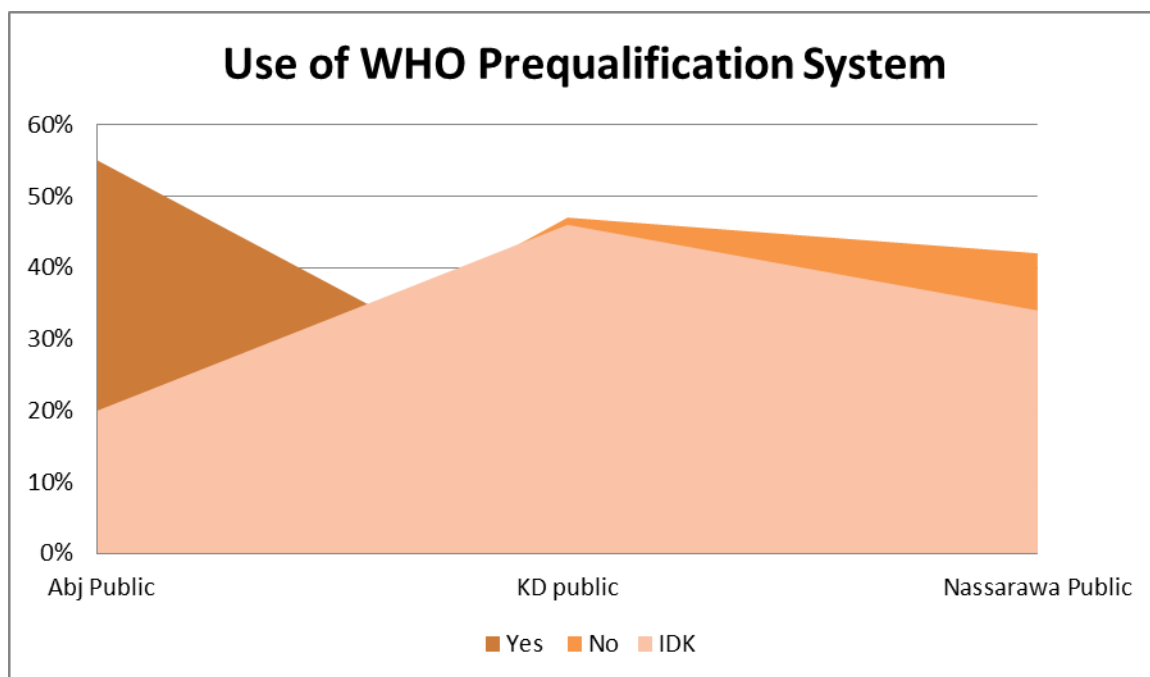


Figure 12: percentage of respondents who stated that public sector procurement used WHO prequalification system

The number of respondents who stated that medicines procurement in the public sector used WHO prequalification system were more in Abuja (65%) and Nassarawa (25%) compared to Kaduna (20%). The number of those who said WHO prequalification were not used were predominant in Kaduna (47%) and Nassarawa (42%) than in Abuja (11%). The number of respondents who said 'I don't know were slightly higher in Kaduna (46%) than Nassarawa (34%) and Abuja (20%). Overall, the number of respondents who did not know much about medicines procurement system in the public sector was greater, particularly, in Kaduna and Nassarawa states than those who knew.

**viii. Is public sector procurement limited to medicines on the Essential Medicines List (EML)?**

For this question, respondents were given closed-ended options (Yes; No & IDK) and majority (68%) stated that public sector medicines procurement was not limited to medicines on the national EM list. While 30% said they did not know. Most of the respondents

neglected the given options and used descriptive phrases such as ‘Private sector purchases of medicines are not limited to those on the EM list’. During focused group discussions, most of the respondents veered off point by complaining about the focus on public facilities and neglect of the private sector where practitioners are most likely inclined to violate rules due to lax nature of government regulators and inspectors. They raised valid points that prompted the introduction of topics that were not originally part of the study. This was done in order to test the validity of their claims. (Those topics would be discussed in details in the later part of this chapter).

**ix. If yes, are there provisions for purchasing medicines not on the Essential Medicines List?**

Respondents had earlier stated that most public sector procurement was not limited to the national essential medicines list, therefore, this follow up question was meant to find out whether it was illegal or it was somewhat expected and accommodated by the authorities, albeit, informally. 50% said ‘Yes’, while the other half said they did not know.

**x. Did Nigeria participate in a pooled procurement scheme with at least one other country for at least one of the last two procurement cycles?**

A vast number of respondents chose not to answer this particular question while 40% ticked ‘IDK’.

#### **5.7.2.4. MEDICINES FINANCING**

**xi. What is the total public or government expenditure for medicines in US\$ for the most recent year for which data are available?**

This section covers the total amount the government has spent on medicines, including government allotment, health ministry expenditure and donor contributions channelled through the government (FMOH, etc)

The question was meant for budget/ finance division of the federal and state health ministries and/or the pharmaceutical supply group but they declined speaking and rather made reference to the annual budgetary allocation from the federal government.

The national primary healthcare coordinating office in area eleven, Abuja was also consulted but declined speaking on matters that border on finances and government spending on pharmaceuticals. The total scale of Nigeria's spending on pharmaceuticals remains unknown and caution must be applied in citing available data on pharmaceutical spending per capita given the fact they might be mere forecasts / projections whose source/accuracy might be questionable.

According to the IMS institute for healthcare informatics<sup>647</sup> Nigeria is one of the 21 pharmerging countries that make up twenty five per cent of global spending on medicines and it is estimated that pharmaceutical spending in Africa is expected to rise by fifty percent within the next five years. Of the projected increase in pharmaceutical spending, eighty percent would be on non-branded medicines especially with the expiration of patents globally.

This projected growth in pharmaceutical spending would also be heralded by the growth and expansion of health and pharmaceutical industries in Africa. This implies that within the projected time frame, the prices people pay for medicines in Nigeria would increase but with that increase comes an opportunity to expand the industry and build the capacity of local

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<sup>647</sup> See; IMS, 2014. Global Outlook for Medicines through 2018, November 2014. [online] available at <http://www.imshealth.com/portal/site/imshealth/menuitem.c76283e8bf81e98f53c753c71ad8c22a/?vgnextoid=8269f454d4ac9410VgnVCM10000076192ca2RCRD&vgnnextchannel=5ec1e590cb4dc310VgnVCM100000a48d2ca2RCRD> accessed 4<sup>th</sup> April, 2015.



companies for the production of cheaper generics which would eventually help in reducing medicines prices at the long run.

Rather than spend money on the importation of non-branded medicines, Nigeria can take advantage of the expected expiration of medicines patents by 2018 and strengthen the capacity of its indigenous pharmaceutical companies for local production which would eventually result in people paying lower prices for life saving medicines. However, if there is no transparency with regards to how funds allotted for pharmaceuticals are handled or managed, stakeholders and think tanks might not have the requisite data to enable them projections or take decisions that could be used for strategic planning.

The essence of having accurate data cannot really be over emphasised. Statistical and non-statistical data enables researchers and policy makers to take strategic and most suitable decisions at every given time. The intention of this section as outlined in chapter three was to get key employees of the federal ministry of health from the budget office to fill out this part of the questionnaire as well as interview them. However, when the target population were not available, and based on the frequent occurrence of phrases and words such as:

“They hardly tell us how much is spent on the purchase of consumables”...

“What has the budget got to do with health outcomes” ...

“Even when the budget is high it does not necessarily mean better health services delivery for people”...

“Even when innovative medicines are brought, most of the bosses channel them to their private clinics”...

” I really don’t think the problem of access to medicines in this country is connected to the budgetary allocation for pharmaceuticals”....

” If you look at the budget, it does not necessarily specify what portion of the budget goes to pharmaceutical expenditure”...

” If I tell you what I know about pharmaceutical spending, you will publish it and they will know the information came from this office”...

“The problem is not really from us at the federal level... I think it is the state level and the people at the CMS that are causing the problems”.

“Most of the state and local government allocations are usually handed to them and what they do is entirely up to them, but the federal level is to blame because, sometimes they lack the capacity to supervise and regulate them”.

“If you do not hold someone by any standard, how will they be accountable and what would they be accountable for?”

“Sometimes we go hard on private practitioners but when it comes to public services delivery, the standards drop and their performance is not evaluated”

With words and phrases that seemed to appear frequently and consistently during interviews with key players / stakeholders in the pharmaceutical and health sector, a pattern was created which necessitated hypothesis testing in order to validate those claims as well as find out whether that information were reliable. There was also a need to learn more about budgeting/financial characteristics and other minor ‘supply side’ factors that impact upon access to medicines in Nigeria other than medicines availability, affordability, accessibility, acceptability, quality, etc.

Over sixty five respondents from the healthcare and pharmaceutical industry claimed that the budgetary allocation and pharmaceutical spending by the government had little impact on shortage of medicines in the country. This was based on the fact that although there was no

recent data on per capita pharmaceutical spending in Nigeria, ninety five per cent of Nigerians paid out of pocket for life saving medicines which had no direct impact on the healthcare budget.

But then on a closer analysis, one could propose that since the government was responsible for the provision of healthcare services which also includes the purchase of essential medicines, allotting a meagre amount for pharmaceuticals could inhibit “pooled purchase (since the available funds are limited and might not pay for the needed supplies at once) resulting in poor availability/accessibility, and when demand is higher than supply, the medicines become expensive thereby constraining even those paying out of pocket

Principally, the essence of finding out the exact amount assigned for the purchase of pharmaceutical supplies and medicines was to find out whether the budgeted amount was enough to cater for the pharmaceutical supplies of a given number of citizens and whether it was commensurate with disease burden/prevalence in the country. Therefore, since data findings suggested that majority of the respondents claimed that budgetary allocation for purchase of medicines and pharmaceuticals had no direct impact on medicines shortage in the country; the hypothesis tested was to ascertain the validity, reliability and accuracy of those claims.

Since there was no recent data on the exact amount allotted for the purchase of pharmaceutical supplies, *public health expenditure as percentage of the total budget which is a sum of public and private health spending* from 2000 to 2012 was used as representative of pharmaceutical allocation. The budgets were analysed to see whether an increase in budgetary allocation/ expenditure for a specific year between years 2000 to 2012 resulted in improved access to healthcare services and better health outcomes such as reduced infant/ maternal mortalities and global ranking. For every year, starting from 2000 to 2012, the

percentage of budgetary allocation for health was recorded and measured against two variables: data on infant and maternal mortality to see whether increased or reduced budgets impacted directly on the selected variables.

By way of background information and rationale for the selection of maternal and child mortalities as measurable variables<sup>648</sup> and indicators of Nigeria’s health system performance, Onoka et al proposed that the level of a society’s development and that of its healthcare system is measured by the general state of child and maternal health<sup>649</sup>.

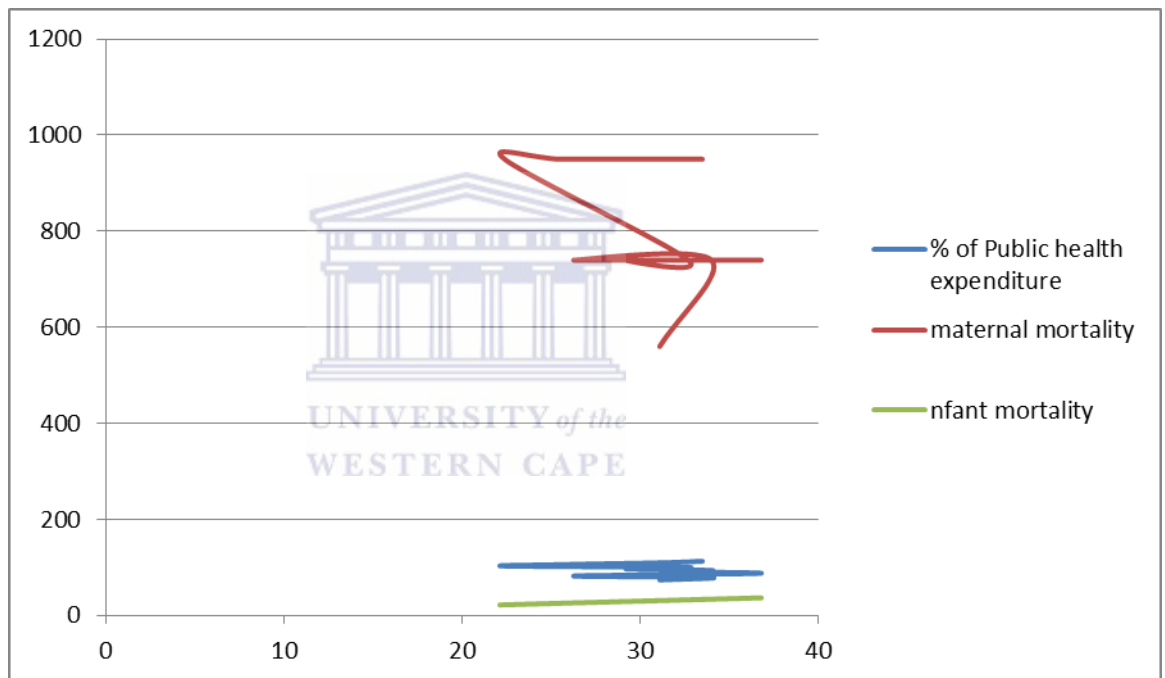


Figure 13: impact of health spending on infant mortality rate from 2000 to 2013.

The plot above was meant to find out whether there was a correlation between budgetary allocation and infant mortality rate, but it shows there is none. There is no obvious relationship and the variables are not correlated given that data points are not visible. Perhaps, to assume that budget allocation could be an indicator when in the whole thesis I

<sup>648</sup> Olusegun, L. et al .2012. “Curbing Maternal and Child Mortality: The Nigerian Experience” International Journal of Nursing and Midwifery Vol 4(3), pp. 33-39. ISSN 2141-2499

<sup>649</sup> Onoka, C et al. (2010) “Measuring Catastrophic Health Care Expenditures in Nigeria” Implications for Financial Risk Protection

have argued on the many shortcomings in the system looks like am arguing against myself. However, budgetary allocation falls under ‘healthcare financing’ which is one of the building blocks of a functional health system recognised by the WHO, as well as a measurable indicator of ‘healthcare efficiency’, and one of the factors that influence the performance of a health system in this study. The variable was assessed and addressed in the study, see chapter three). The variables (maternal and infant mortalities) were paired differently with public health expenditure per time and not at the same time as represented by the present plot.

The year public health expenditure was highest at 36.9% in 2009 infant mortality rate was 85%. The changes; reduction or increase in health budget expenses did not seem to have any direct impact on infant mortality rates given the fact that infant mortality seemed to be on the decline due to an unknown variable since 2000. Moreover, between 2000 and 2013, it fell from 113 per live birth to 74.09. This finding seems to confirm studies conducted by Baba & Omotara on Nigeria’s health and its failure to lead to a more efficient health system even as the budget increases over the years<sup>650</sup>.

At P value < 0.10, the hypothesis test indicated there was suggestive evidence that public health expenditure as percentage of the total budget (sum of private and public spending) from years 2000 to 2013 did not impact directly on healthcare outcomes. Thus, we retain the null hypothesis.

Data used for the analysis is outlined below in table. (\*\*general government expenditure on health as percentage of total government expenditure was added for further comparative analysis). Final research findings and data analysis results will be discussed in details in chapter six.

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<sup>650</sup> Baba M, Omotara B: Nigeria’s Public Health: Gains And Challenges. 2012. [Online]Available at: <http://www.equilibri.net/nuovo/articolo/nigerias-public-health-gains-and-challenges-0> . Accessed 7th April , 2014

Table 4

Year	Public health expenditure as percentage (%) of the total budget( sum of public + private health spending from 2000 to 2012	General government expenditure on health as percentage of total government expenditure.	Maternal Mortality Ratio - <i>Maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births.</i>	Infant-Mortality <i>Infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year.</i>
2000	33.5	-	950 (22.8%)	113
2001	31.4	-	-	110
2002	25.6	3.3	-	106
2003	22.4	4.8	-	103
2004	32.7	8.4	-	100
2005	29.2	8.3	740 (18.1%)	97
2006	34.0	8.3	-	94
2007	32.9	9.4	-	91
2008	36.8	9.2	-	88
2009	31.3	7.9	-	85
2010	26.3	5.5	-	82
2011	34.0	6.7	-	79
2012	31.1	6.7	-	77

2013	-	-	560	(15%)	74
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Table4: Source: World development indicator 2014<sup>651</sup>.

**xii. Is there a national policy to provide at least some medicines free of charge (i.e. patients do not pay out-of-pocket for medicines) at public primary care facilities?**

More than 65% of respondents said there was a national policy to provide some medicines free of charge but even at that patients still get to pay out of pocket for medicines, contraceptives and other medical consumables such as gloves, surgical blades, cotton wools, antiseptics, bandages, etc. Health care facilities and professionals have an obligation to provide consumables as authorised by the law to be used for diagnostics and primary care. Making consumers and patients pay for what the government / law has made provisions for hinders most poor people from accessing lifesaving treatments and medicines. Not only does it hinder patients, it leads to increased maternal mortality since it discourages pregnant women from attending ante natal care resulting in most of them choosing to give birth at home. Also, it appears to be responsible for most women not being willing to access reproductive care especially in remote areas where earnings are limited and they are being made to purchase( from private pharmacies/vendors) 500ml of ‘savlon or purif’ antiseptics, surgical blade, syringes, bandages, e.t.c for family planning procedures such as the insertion of ‘implanon’. Medicines and diagnostic services are supposed to be free for a certain class of people (HIV and TB patients, Children under age five, the elderly and pregnant women) in public healthcare facilities however; no explanation was given for denying them these rights.

<sup>651</sup> World Development Indicator. 2014. World Bank Group. Available at : <http://data.worldbank.org/indicator/SP.DYN.IMRT.IN/countries?display=default> accessed 5<sup>th</sup> April, 2015

Respondents gave insights into most common practices in healthcare facilities that hinder access to medicines. Their responses also suggested that there was a huge disconnect between what the law/policy says and practice. That is, what the healthcare administrators and practitioners do is different from what the policy documents say and what is being advertised on media, which shows poor regulations, absence of performance benchmark and lack of synergy.

**xiii. If yes, which of the following are free at public primary care?**

**All medicines; Malaria medicines; Tuberculosis, vaccines; Sexually transmitted disease medicines; HIV/ AIDs –related medicines**

50% of the respondents said vaccines, tuberculosis and HIV/AIDs related medicines are more than thrice more likely to be free at public healthcare facilities than malaria and sexually transmitted disease medicines. Even though there is a policy in place that states the kind of medicines that should be made free to the public, respondents claimed most of those medicines were often channelled to private clinics by practitioners or often scarce and not always available for those who need them. And, when the free medicines are not available in public facilities, bio medical personnel refer patients to private facilities owned by them or their friends, where these medicines are sold at exorbitant rates. 5% of the respondents said all medicines are free while 15% said malaria medicines are free. Over 25% of the respondents said once in a while, one finds out that some medicines sold in private facilities are same ones that were supposed to be given freely at the public facilities.

This insight drives home the need for the healthcare sector leadership to reconsider their regulation and monitoring strategies. The statistics of respondents who claimed medicines are often siphoned to private clinics is not necessarily representative of the general practice across Nigeria and does not suggest that every public facility in Abuja, Nassarawa and



Kaduna states indulge in such practices, rather it implies the need for the government to have a strong monitoring and regulatory presence across all facilities in order to curb some of the illegal practices that are constraining access to essential medicines in certain locations. During focus group discussions and interviews, it was gathered that diagnostic and pharmaceutical services have been privatised in some public hospitals across the three states. This privatisation has been responsible for patients who are not supposed to pay for medicines such as the elderly, pregnant women and children, being made to pay for medicines in public facilities. In addition, most public pharmacies are underfunded and hardly have stocks that are meant to be free to the public.

- xiv. Which of the following types of patients receive medicines for free: a,**  
**Patients who cannot afford them.....Older children...**  
**Children under 5 years of age....Pregnant women..... Elderly people**

Over 78% of respondents stated that pregnant women and children under age five receive medicines for free. 10% said elderly, children under age five and pregnant women. 15% left the question unanswered which was an indication that they did not know whether medicines were free for any group of people in Nigeria. (The respondents who left this question blank were asked and they claimed not being sure medicines were free for anyone given that although the government had said healthcare should be free for the elderly and children but certain rackets within public healthcare facilities charge for medicines and consultation).

Interviews with most out patients available at health care facilities during the time of the study also validated this claim. Surprisingly, the responses of the patients matched responses received from questionnaires filled out by most healthcare workers and pharmaceutical representatives who had insider knowledge of most practices in the health and pharmaceutical industry.

If a great number of citizens, consumers and users of a certain level of services/care provided by public facilities are not aware of the existence of those packages from the government, it shows the need for better and targeted communication. The government has to find out who uses these services most, how and where, then come up with sensitization materials on how these people can access these services and also lodge complaints if any. On the other hand, if what the ministry of health announces on radio is not in tandem with what healthcare practitioners are doing, it gives one cause for concern and calls for serious attention.

Over 85% of respondents agreed that they patronized pharmacies and medicines vendors more often than they did clinics (this will be discussed in details in the next section). This statistics matters because it is a pointer to the fact that most patients do not know what services are free and what is not free, as such, they visit inappropriate or illegal sources for their healthcare needs out of fear of the cost of medical treatment and medicines. The government has to integrate pharmacies and medicines stores into the scheme of things particularly, using them as health information dissemination outlets. Due to the role they play as the first point of contact for those seeking medical care, they have the potential to counsel and direct consumers focus to a more appropriate channel if in sync with government agencies (by being trained, carried along and made to understand the importance of their roles).

If the quality of services and information received from pharmacies and medicines stores are made highly quality by improving the standards and holding them by it (mostly, in remote locations where patronage is high) then consumers and patients would be able to rely on them and use them in a manner that is not harmful to their health -exchange of health information and for their health needs.

**xv. Which fees are commonly charged in public primary care facilities:**

- a. **Registration/consultation fees... c. Dispensing fees**
- b. **Flat fees for medicines... d. Flat rate co-payments for medicines**
- e. **Percentage co-payments for medicines...**

The fees commonly charged in public primary healthcare facilities are: 75%- registration/consultation fees, 15%- dispensing fees, 10%- flat rate co-payments for medicines, flat fees for medicines, and percentage co-payments for medicines. Understanding the kind of fees that are commonly charged in public primary healthcare facilities is a significant means of gaining insight and understanding part of the issues that constrain access to medicines and healthcare as well as how these issues could be categorised and differentiated from other factors that contribute to shortage of medicines.

During interviews, it was discovered that government policies clearly states that registration/consultation be free for children under age 12 years and adults who are 60 years and above, however, healthcare workers still charge these fees for reasons that could not be ascertained at the time of this study.

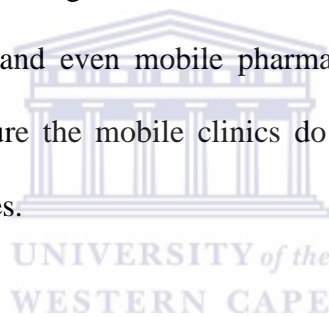
**xvi. Is revenue from fees or the sale of medicines used to pay the salaries or supplement the income of public health personnel in the same facility?**

Two-third of respondents did not know whether revenues from fees or sale of medicines were used to pay salaries or supplement the income of public health personnel in the same facility. The remaining one-third either said yes or no. this statistics is quite unsettling considering the fact that majority of the respondents who answered this question were either working in the healthcare or pharmaceutical sector.

This question showed the number of people within the healthcare industry who do not know how and where their salaries are sourced from. The only exceptions to this statistics are those

personnel working in public healthcare facilities in rural areas within Nassarawa and Kaduna states whose salaries are often paid or supplemented from consulting fees/medicines sales.

A good number of remote communities in Kaduna and Nassarawa states lack primary healthcare posts/dispensaries and tend to build self-help clinics that are funded through consulting fees/medicines sales. As these self-help clinics are managed by volunteer personnel who are members of the communities, their stipends are sourced from consulting fees and medicines often sold by them to patients. This anomaly in the Nigerian health system which dates back to colonial times (please refer to chapter four) could be corrected by revisiting the essence of having primary healthcare facilities, rethinking the present system of administration and perhaps introducing mobile clinics such as clinics on boats for those in riverine areas, clinics on buses and even mobile pharmacies. Also setting guidelines and ensuring compliance would ensure the mobile clinics do not fall into the same rot as the public primary healthcare facilities.



Picture 1: Community health post



*Picture 1: a community self-help health post in pesseli, Karu LGA in Nassarawa state*

*Source: study resources from field work*

Picture 2: Inside ward of a community health post



Picture 2: ward and injection/room of a community health post in Nassarawa

Source: study resources from field work



**xvii. Who dispenses medicines?**

Table 3:

Perception of who dispenses medicines	Number of respondent	Percentage of sample population
Pharmacist	1000	50%
Doctor	600	6%
Nurses	800	65%
Auxiliary personnel/Technician/other	1000	75%

Table 3: respondent's perception of who dispenses medicines

The responses to this question varied by location. Majority of the respondents who stated that medicines were dispensed by pharmacists were from Abuja, Lafia and semi urban areas in

Kaduna. While those who claimed medicines were dispensed by Auxiliary personnel and nurses were mostly located in rural areas of Kaduna and Nassarawa and part of public health facilities in satellite towns around Abuja and Nassarawa state. Some respondents left this question blank.

**xviii. Do prescribers (pharmacists) dispense medicines in public or private facilities?**

Table 4: Frequency of pharmacists dispense of medicines

Frequency of pharmacists dispense of medicines	Percentage
Always	50%
Frequently	4%
Occasionally	40%
Never	6%

*Table 4: respondent's perception of the frequency of pharmacists medicines dispensing in healthcare facilities*

Of all the respondents (50% of one thousand respondents) who said pharmacists dispense medicines always (of whom majority were located in Abuja and satellite towns within Nassarawa and a few areas in Kaduna), 60% (55% of five hundred) said pharmacists frequently prescribed and dispensed medicines in private pharmacies and secondary public healthcare facilities. While the remaining 45% said doctors or nurses prescribed and nurses or other healthcare personnel dispensed medicines in both public and private primary healthcare facilities

**xix. What proportion of the population has health insurance?**

Table 5: health insurance coverage

Respondents response	Percentage of sample population
Some	50%
None	25%
I don't Know	25%

Table 5: proportion of population that has health insurance

During focus group discussions and interviews, respondents were asked to elaborate on the use of the word 'some' and they stated that the significance/ definition of 'some' as a proportion of the population that had health insurance meant four things: 1. it includes government employees 2. Structured private sector employees 3. Individual/families who can afford to pay a bulk sum of ten thousand naira per person for an average number of six persons for health coverage for a year (this package costs fifty eight thousand naira on average -58,000 naira) 4. Community people who are willing to form or join corporative societies in order to access health insurance coverage through such platform since most HMO-health management organisations are more interested in bulk yearly payments/subscriptions and unwillingly to accept individual monthly payments which could be five hundred naira per person. Apart from HMOs, telecom providers also serve as platforms for health insurance coverage subscriptions as illustrated in chapter four.

There was also an unsettling discovery about payment concerns with HMOs which has been the reason why most community people are encouraged to form groups where health insurance coverage can only be accessed through monthly payments that are collected as bulk contributions at the end of the month. Individual payments are not accepted except on the platforms of a community group. There is need to address this trend among HMOs in Nigeria in order to guarantee that no one is denied access to health insurance as a result of their social class or earnings.

This question gave further insight into the operations of the HMOs in Nigeria and how their modes of operations are hindering people from utilizing their services when the expectations had been such that people would literally overwhelm them with subscriptions. Although a lot of Nigerians are signing up for health coverage since the health bill was passed in 2014, a visit to some HMOs suggested that the response rate is slow compared to expectations of a high demand for health insurance coverage. Nevertheless, it is expected that the number of Nigerians with health insurance coverage would gradually pick up as HMOs advertise and offer better packages such as family friendly, pro-poor and location targeted services specifically for people in remote areas.

**xx. Are medicines covered by health insurance? All.....None.....Some.....IDK...**

60% of those who answered this question said only a few medicines were covered by health insurance. 20% said medicines were not covered while 30% said they did not know. During the focused group sessions and interviews, majority of the respondents who had health insurance coverage said they did not know the contents of their health insurance package as such, could not tell what benefits to expect. Two third of them said they were content with co-payments for medicines and surgical procedures.

An analysis of a basic health insurance benefit packaged showed that outpatient/specialist consultation, physiotherapy services limited to five thousand naira, diagnostics services, accidents, emergency and minor surgeries/procedures formed part of the basic coverage. Advanced diagnostics such as CT and MR scans, ante natal care/ childbirth, major surgeries, annual medical check-up, hospital admission/accommodation and a couple of other services were not covered by the basic/general package which costs on average, nine to ten thousand naira.



**xxi. Is there a policy covering medicine prices that applies to the public sector, the private sector, or non-governmental organizations? (Please indicate the sector)**

Some of the respondents (65%) said they did not know whether there was a policy covering medicines prices that applies to the public, private or non-governmental organizations. 28% said there is a policy that covers medicines prices which applies only to the public sector while the private sector operates a free market where medicines prices are not fixed rather retailers and wholesalers are at liberty to dictate and determine medicines prices per time. 12% said they did not know.

During a market survey, it was discovered that medicines prices varied even within the same state. For instance, one upscale pharmacy store in zone three in the fct sold Piccan, a teething remedy for ₦2200 naira while another pharmacy in Apo sold same product for 1800 naira. In chapter four, the cause of these price disparities were not established but this question has shed more light on the probable cause of the price variations across different sectors / facilities

**xxii. If yes, which of the following policies covering medicine prices apply?**

- a. Maximum wholesale mark-up**
- b. Maximum retail mark-up**
- c. Duty on imported raw pharmaceutical materials**
- d. Duty on imported finished pharmaceutical goods.**

Table 6: policies that influence medicines pricing

Policy covering medicines prices	Percentage of respondents
a. Maximum wholesale mark-up	30%
b. Maximum retail mark-up	30%

c. Duty on imported raw pharmaceutical materials	2%
d. Duty on imported finished pharmaceutical goods	8%
e. a and b	23%
f. b, c and d	7%

*Table 6: respondent's perception of policies that influence medicines pricing*

The table above is a representation of the order in which respondents answered this question.

**xxiii. Is a national medicine prices monitoring system for retail/patient prices in place?**

Table 7: National medicines prices monitoring system

Respondent's answer	Percentage
Yes	18%
No	32%
IDK	50%

*Table 7: respondent's perception about the existence of a national medicines prices monitoring system*

Only 18% of the respondents said 'Yes' 32% said 'No' while the remaining 50% said they did not know. In question xxi, when asked whether there was a policy covering medicines prices that applies to public/private sector and NGOs, only 28% of the respondents who answered that question said yes and ticked 'public' sector.

The responses in question xxi are linked to this question in the sense that one could suggest that the absence of a general medicines pricing policy covering all sectors in the healthcare/pharmaceutical industry might be the reason for lack of price uniformity resulting in medicine being more expensive across different facilities within same location or

geographical settings. Evidence of such disparities could be seen in question xxi. (Please refer to question xxi in previous page). Moreover, it is possible that in the case where a medicine price monitoring system does exist, such system might probably be dysfunctional given the 'free' nature of the Nigerian medicines market.

**xxiv. Are there regulations mandating retail/patient medicine price information to be made publicly accessible?**

Two third of respondents either said No or IDK-I don't Know. While the remaining one third said 'Yes' that there are regulations mandating price information on medicines to be made publicly available.

**xxv. Are there official written guidelines on medicine donations that provide rules and regulations for donors and provide guidance to the public, private and/or NGO sectors on accepting and handling donated medicines? Yes .No.....IDK**

All the respondents answered 'Yes' to this question. On further enquiry at the office of the primary healthcare board, we were told that part of the procedure includes writing a letter of intent/introduction to the acting director of primary healthcare and copying the receiving unit. Due to bureaucratic bottlenecks, most medicines donation approval usually takes time to get through. Moreover, donations have been politicised to the extent that when a letter of intent for donation arrives, it is often viewed with suspicion until proven otherwise.

**5.7.2.5. RATIONAL USE: PRESCRIBING / DISPENSING PATTERN- ADHERENCE TO STANDARD TREATMENT GUIDELINES**

**xxvi. Is there a national Essential Medicines List (EML)?**

97% admitted that there is a national essential medicines list. While 3% said they did not know. The fact that a great number of respondents acknowledged the existence of a national

essential medicines list is worth mentioning because the presence of a national essential medicines list in any health system is an indication that there is a standard medicines and treatments guideline. In countries where the medicines board operates differently from the United states FDA where one can search for active ingredients in every medicines available on their database, the EM list could serve as a guide since it states active ingredients, combination therapies and standard guidelines for use of any medicines for all age.

**xxvii. If yes, how many unique medicine formulations does the national EML contain? Number**

Respondents were unable to tell the number of unique medicines formulations in the national essential medicines list (fifth edition). However, an analysis of a copy of the EM list showed it had a total number of three hundred and eighty six formulations.

**xxviii. How many paediatric formulations are included in the: National EML .....  
Separate Paediatric EML (please indicate)...**

75% of the Respondents were unable to tell how many paediatric formulations that is included in the national essential medicines list. While 25% said there was a separate paediatric essential medicines list but could not tell the number of medicines it contained.

**xxix. When was the national essential medicines list last updated? Year .....**

98% did not know when the national essential medicines list was last updated. Whereas, 2% said it was last updated in 2010.

**xxx. Is the national Essential Medicines List being used in the following:**

**Public sector... b. Public insurance reimbursement...**

**Private insurance reimbursement...**

Of more than five hundred healthcare workers and pharmaceutical companies' representatives who answered this question, only 30% said the national essential medicines list was being used in the public sector and for public/private insurance reimbursements. 50% said it was only used in the public sector, 10% said it was used for public insurance reimbursement, while 5% said it was used for private insurance reimbursement.

**xxxi. Is there a committee responsible for the selection of products on the national EML?**

All respondents stated that there is a committee responsible for the selection of products on the national essential medicines list.

**xxxii. Is there a public or independently funded, nationally accessible (e.g. by phone) medicines information centre or service that provides information on demand to:**

- a. Dispensers.....b. pharmacists..... C. consumers.....**

86% said there is a public information centre operated by NAFDAC that provides information through their website and on enquiry to dispensers, pharmacists and consumers.

**xxxiii. Are there a national programme and/or multidisciplinary body, involving government, civil society and professional bodies, which monitor and promote the rational use of medicine?**

35% said the Nigerian medical association and pharmaceutical council were responsible for monitoring and promoting rational use of medicines. While 65% said there was none.

**5.7.3. Research results: operational level- bio medical personnel, medicines vendors, pharmacies and patients / consumers**

At the operational level, questionnaires were distributed to patients while an interview guide was used for in-depth interviews and focus group discussions with bio medical personnel, pharmacists, medicines vendors, households, patients and consumers within the communities. In order to have first-hand observation of the ATM aspect that deals with medicines purchase, rational use and prescribing pattern from the prescription stage to the last stage, I sought permission from the clinics to follow a few patients to the pharmacy to observe the exchange between them and the pharmacy and how the medicines are purchased. Questionnaires ‘focus group discussions’ and interview guides were designed to suit the research objectives/needs as well as components of access to essential medicines as stated in chapter one and three. Generally, the data collection instruments at this level were designed to collect primary data along the following lines:

- a. Availability of standard infrastructures and essential diagnostic equipment for the provision of primary level care/ services
- b. Availability of personnel, accessibility, quality and cost of essential medicines and medical supplies
- c. Medicines financing—who finances medicines and medical supplies / facilities; who pays for the purchase of basic diagnostic equipment; how much is paid for essential medicines and treatments per person / household on average ; who pays for the purchase of essential medicines at all facilities e.g. Reproductive health care facilities.
- d. Clinic utilization and access to bio medical personnel/health workers
- e. The distance from the patients homes to the nearest primary healthcare facility
- f. Rational use of medicines- where medicines are often purchased how it is stored during and after treatment and adherence to dosage instructions.
- g. Prescribing pattern-polypharmacy

## 1. Demographic data

Demographics	FCT-Abuja	Nassarawa	Kaduna
Area (km)	7,315	27,117	46,053
Population -1991 census	371,674	1,207,377	3,935,618
Population -2006 census	1,406,239	1,869,377	6,113,503
Projected Population -2011	2,238,800	2,171,900	7,102,900
LGAs	6	13	23
Morbidity ratio	-	-	-
Literacy rate	-	-	-
Disease prevalence	-	-	-
Use of contraceptives	25%	18%	20%
Occupation	-	Agriculture	-
Vaccination coverage	61%	20%	35%
Infant mortality	66	66	89

*Table 8: sources; National bureau of statistics; National population commission; Nigeria Demographic and health survey, 2013*

## 2. General features of public facilities in Abuja, Nassarawa and Kaduna states

Primary health care facilities in Abuja, Kaduna and Nassarawa states differ in function; that is, the roles they play and levels of care and milieus. Even though Abuja seems to have the lowest population, primary healthcare facilities have better infrastructures and are located mostly within purely urban and suburban settings. In addition, the numbers of private facilities in Abuja far exceed the number of those in Kaduna and Nassarawa states and have access to clean water, electricity and storage facilities.

In Nassarawa and Kaduna states only about five percent of primary healthcare facilities are located within urban settings with standard infrastructures. A great percentage of primary healthcare facilities located in remotes areas are without standard infrastructures, exist as health posts and have limited level of care. Apart from those comprehensive primary healthcare facilities located in suburban settings like Gidan Mangoro (world bank assisted) Jikwoyi , Nyanya , Lafia and Kaduna the other primary healthcare facilities appear to be lacking clean water, storage facilities, standard diagnostic equipment and generally in poor conditions. Some local governments had at least one standard primary healthcare centre that served the population. However, most of the facilities seemed to be far and out of reach to a good number of the population due to distance, difficulty of the terrain and roads leading to the clinics. Generally, except for a few private facilities, all the public primary healthcare facilities were in short supply of personnel, medicines, medical supplies-consumables, electricity, standard infrastructures and water.

### **3. Availability and Selection of Bio Medical Personnel and Patients:**

In chapter three, it was stated that at least 30 respondents would be interviewed in all selected facilities which includes bio medical personnel and patients. However, during data collection, it was discovered that most facilities did not have up to the desired number of respondents on a daily basis and health workers were hardly available except on certain days of the week. For this reason and due to low patronage of most health facilities in certain remote and hostile locations, respondents were interviewed based on availability at the clinic on special days and individuals/households were interviewed in their local communities at their convenience. Most of the health posts in Kaduna and Nassarawa were managed by volunteer personnel who substituted their work with farming or trading and sometimes due to low patronage at the health posts, choose to see patients at their convenience and in any location of their choice. Most of these personnel were interviewed in their homes, business locations or



farmlands. There issue of unequal distribution of healthcare facilities was also prevalent in certain areas in Nassarawa, Kaduna and satellite towns around the FCT, where many people used a few understaffed public facilities due to its strategic location.

#### **4. Essential Medicines Availability, Accessibility, Affordability and Acceptability**

Under medicines availability, health workers, medicines vendors, households and individual out patients made up the respondents. The following questions gave insights into the medicines situations in communities located within Abuja, Nassarawa and Kaduna states:

##### **a. Where do you receive treatments when you fall ill?**

Two third of the respondents said they take herbal mixtures whenever they fall ill and if the illness persists and does not subside after a few days, they visit the local chemist/patent store for treatment. One third of the respondents said they only visit the health post if their children fell sick and if they had health conditions that could not be handled by the medicines seller. This response was uniform among respondents living in suburban and remote areas. Whereas, those living in urban areas said they often go to a pharmacy at first on experiencing any strange symptoms and if it persists, they visit a private clinic. The only exceptions were if they needed to vaccinate their children, in those instances, they would rather go to public health facilities where the waiting hours might be long, but they don't get to pay any fees for treatments and are guaranteed of receiving treatments.

When asked why they patronised private clinics occasionally even though they had opined that it was expensive, most of the respondents said a number of factors were responsible: long waiting hours at public health facilities, absence of health workers, shortage of medicines and the fact that they often get referred to private pharmacies to purchase medicines or private clinics for more treatment where treatment costs are higher.

**b. Are medicines available and affordable in public and private dispensing facilities to treat common conditions at primary care level?**

Respondent's opinion about medicines availability and affordability

Do you think that,	Yes , Sometimes	No, -
1. Medicines are usually available at the health centre / dispensary?	2%	98%
2. Medicines are usually available in chemists/pharmacy?	80%	12%
3. Medicines are usually available in private clinics?	8%	
4. You or your family members are always able to pay for medicines from the private chemist?	75%	25%
5. Do you use the health centre whenever you or any member of your household is sick?	5%	95%
6. The services at the dispensary /health centre are good?	40%	50%
7. Apart from the health post in your community, the nearest clinic is far?	10%	
8. The nearest chemist/patient shop is far?	13%	82%

Table 9: Respondent's opinion about medicines availability, affordability and distance

Patients leaving the health posts and medicines outlets after receiving treatments were interviewed to gain understanding of how much they paid for medicines and whether all prescribed medicines were available at the facility at that time. Patients were also asked whether payments were out of pocket for medicines or other services such as consultation or diagnostics.

Majority of the respondents (40% -some of whom were mostly parents and had children) said they often visit public facilities for vaccinations and ante natal since these are free. However, there is usually shortage of medicines in public facilities and often times; the health workers would give them a date on when certain treatments, vaccinations or medication would be available. Medicines availability in public facilities within the FCT and satellite towns was significantly higher compared to availability in similar facilities within Kaduna and Nassarawa states. For instance, when asked about the kind and number of medicines available within their facilities, it was discovered that most of the public facilities had a limited number of essential medicines- over 70% had stocks that were limited to paracetamol, folic acid and vitamin C without any syrups, antibiotics or injections while 20% had up to five different kinds of medicines. The remaining 5% had between eight to twelve different kinds of essential medicines which excluded vaccines and paediatric medicines.

Table 10: Availability of EM/consumables in public facilities in Abuja, Kaduna and Nassarawa

Number of essential medicines available in facility	Abuja – availability ratio in %	Nassarawa	Kaduna
1-3:	8%	70%	79%
5-9	23%	12%	11%
10-20 medicines	67%	2%	3%
Gloves, gauze, surgical blades, cotton wool, antiseptics/disinfectants, first aid plaster, syringes, gloves, methylated spirits, needles.	35%	16%	7%

Table 10: Health workers reports/observation of medicines availability in public facilities

50% of the respondents which includes individuals and households said the public health facilities are constantly having stock outs (for those that are being supplied by the government) while some of the respondents said they often purchase their medicines from private medicines sellers due to the fact that the facilities in their local communities where they obtain treatments do not sell medicines and in the case where they did sell,(for the facilities where the personnel sold medicines), it was usually slightly expensive than those sold at patent stores.

For those who used private clinics, they claimed that after consulting the doctor, they hardly take their prescriptions to the pharmacy in-house, because medicines are usually more expensive in private clinics than in private pharmacies. Therefore, they take their prescriptions to a public pharmacy or medicines outlet where the price is usually slightly lower than in the private healthcare facilities.

On average, medicines were comparatively cheaper in public than private healthcare facilities. While on the other hand, medicines were more expensive in private than in private pharmacies and medicines outlets.

Documented statements such as the ones below sum up medicines availability, affordability and distance to nearest clinic/pharmacy in

**Availability:** *“government does not supply us medicines so when patients come, we send them to go and buy at Tarka lafia”* – Habakuk, a volunteer at one of the self-help community health posts in Nassarawa state.

*“The only medicines we have in the clinic are paracetamol and folic acid, no syrups and no medicines for children”* - a health worker in one of the facilities confirmed lack of medicines.

**Medicines Affordability / cost of treatment**—*“the nurse at the clinic only gave me paracetamol and said I should go to Sanga and buy the remaining medicines which are expensive from a chemist, but I don’t have money, so I have to go and cut firewood to sell before I can raise enough money to buy the medicines”*- a patient at one of the clinics in Kaduna state.

*“The medicines they sell at private are always expensive but they always have what we need”*.

*“Sometimes they come to us and when we tell them how much we will charge for the treatment, they go back home or go to herbalists”*-health worker at one of the public healthcare facilities

*“They don’t like buying their prescriptions from us- they prefer to buy from outside”*- a nurse at one of the private clinics in Abuja.

*“They bring all these family planning kits here without providing consumables-(rhetorically) how do we use them? We have to tell patients to buy surgical blades, syringe, antiseptics and surgical gloves so we don’t infect them or infect ourselves”*- a nurse at a reproductive health facility in area 2, Abuja.

**Distance** – *“normally, if we fall sick, we go to the clinic even though we know that they don’t always have medicines... at least, it is better than paying extra money to take okada to Lafia”*

Documented evidence suggests that the main constraint to access to treatments and essential medicines seems to be affordability. The difficulty encountered by patients in paying for medicines even though the government has said that treatments (malaria treatment in Nassarawa) and medicines are free for some certain class of people (- HIV/AIDS patients, TB patients, hepatitis C patients, pregnant women, children and the elderly) is very palpable.

Most of the respondents felt that they could afford the prices they pay for the treatment of malaria. During data collection, we witnessed and observed an exchange between patients and health worker from the consulting stage to the dispensing stage and here is what a typical scenario looks like:

To obtain a hospital card in a public facility per person costs two hundred naira while the family card costs five hundred naira. After paying money to obtain a card, the patient waits for a while and after a few minutes, based on how busy the health workers are and the number of patients available, the patient gets to see the nurse and after due consultation, the prescription is written out and the total cost of medicines and treatment discussed between both parties. Considering that most of the public healthcare facilities hardly stock medicines except for those involved in government sponsored healthcare intervention programs such as 'roll back malaria', the nurses will either direct the patient to a private chemist where medicines could be purchased or volunteer to go there based on the condition of the patient. On average, malaria treatments (medicines and sometimes including treatment) cost between; 1500 - 2500 naira per person. A combination of medicines for malaria and typhoid costs between 4000 - 5000 naira in remote areas (this includes satellite towns around the f.c.t) within Abuja, Nassarawa and Kaduna.

Findings suggest that treatment for various ailments could be higher, depending on the location. For instance, there are times malaria medicines cost up to five thousand naira in most private pharmacies and medicines outlets.

**c. Do patients have satisfactory geographical access to public and private dispensing facilities?**

On further enquiry it was discovered that the distance from the community to the nearest pharmacy was usually forty five minutes to one hour by motorcycle. Apart from individuals,

households and patients, most health workers confirmed that even the comprehensive health care centres that were supported by the government always recorded huge stock outs which explains patient's preference for chemists where most medicines for their health needs were always available even though the cost are usually higher compared to the public facilities.

Table 11: Respondents' opinion of distance to nearest health facility/ medicines vendor

Type of facility	Distance by minutes	% of respondents opinion
Referral centre	180 minutes(3hrs)	70%
Standard primary pub./private health centre	120 minutes(2hrs)	86%
Medicines outlet/pharmacy	60minutes (1hr)	90%
Chemist	30minutes	95%

*Table 11: Respondents' opinion of distance to nearest facility*

The question about where respondents purchase their medicines from indicated a direct relationship between affordability (user/consulting fees) and self-medication. The issue was not so much about distance to facilities as purchasing power and respondent's ability to pay for medicines at any facility if distance was not an issue.

Follow-up questions on why respondents choose certain facilities over others suggests that most of the respondents would rather self-medicate based on previous treatment experience/ knowledge than pay consulting fee at a healthcare facility for same or similar illness. Data indicates that majority of the respondents self-medicate and tend to rely more on medical advice from medicines vendors and social media broadcasts from friends or family. Interviews and focus group discussions revealed that most respondents in the suburban and rural areas tend to patronise places and facilities where they will not have to pay use/consulting fees except under critical and often times life threatening circumstances.

Generally, data indicates that factors such as: proximity or closeness to medicines outlets, cost of medicines, absence of consulting/user fees, less waiting time, and guaranteed availability of medicines form part of the factors that determine respondents' choice of where to seek treatment or purchase medicines per time.

**d. What kind of sickness usually takes you or your family to the health centre?**

Table 12: Disease prevalence by season

Season	Abuja	Nassarawa	Kaduna
Dry season	Cough, sinusitis, skin rashes, malaria, typhoid,	Snake/scorpion bites, dysentery, malaria, typhoid,	Snake/scorpion bites, diarrhoea, typhoid, malaria
Rainy season	Common cold and malaria, typhoid	Common cold, pneumonia, typhoid, athletes foot	Pneumonia, common cold, malaria, typhoid

*Table 12: respondent's opinion about disease prevalence by season in Abuja, Nassarawa and Kaduna.*

In 70% of disease prevalence, malaria and typhoid were constant through dry and rainy seasons. Common cold and pneumonia prevailed during rainy season while snake bites and diarrhoea were common during dry seasons, particularly in satellite towns around the FCT such as Kuje and bware as well as Kaduna and Nassarawa.

As the disease prevalence is seasonal, so is the purchasing power of most of the respondents. However, Abuja respondents were more likely to have money throughout all seasons than those in Nassarawa and Kaduna. Each of the respondents was asked to state the average amount they earn per month and 70% of the respondents in Kaduna and Nassarawa stated



that their income was seasonal. 60% of them are farmers and hardly earn incomes from their crops during planting seasons except during harvest periods which are usually around December. While 10% who were traders and sold mostly firewood also stated that their incomes was seasonal. They cut down trees during dry season and sometimes during rainy season and allow it to dry before they can sell it. Overall, an average household in suburban and rural areas earned on average, 100,000 naira per year. 20% of the respondents were either civil servants or worked in the private sector and earned monthly salaries that ranged between 60,000 – 70,000 naira.

Interviewed respondents were asked to state which sickness incurred the highest treatment cost per season, and 90% of them said it was malaria and typhoid. While 10% said it was common cold and pneumonia mainly in children. Disease prevalence by season across the three states could be seen in table 11. It is quite interesting to note that there are people whose incomes are seasonal which might also be an explanation for their inability to pay for life saving medicines. These data proves that low earnings could be a barrier to accessing essential medicines in rural areas. Therefore, based on seasonal disease prevalence in these areas, the government and NGOs can initiate intervention programs that would ensure people have access to lifesaving medicines during their 'low income' seasons. There are quite a few reasons for this suggestion. Most significant is that during planting seasons which is usually the rainy season, their savings/incomes drop and most of the rural dwellers are exposed to harsh weather conditions while ploughing their fields. Farmers tend to fall sick more often during the planting season than the harvest season. Therefore, introducing intervention initiatives that are targeted at their most vulnerable seasons would help in building their capacities for better livelihoods/ greater crop yield.

Figure 14: disease prevalence

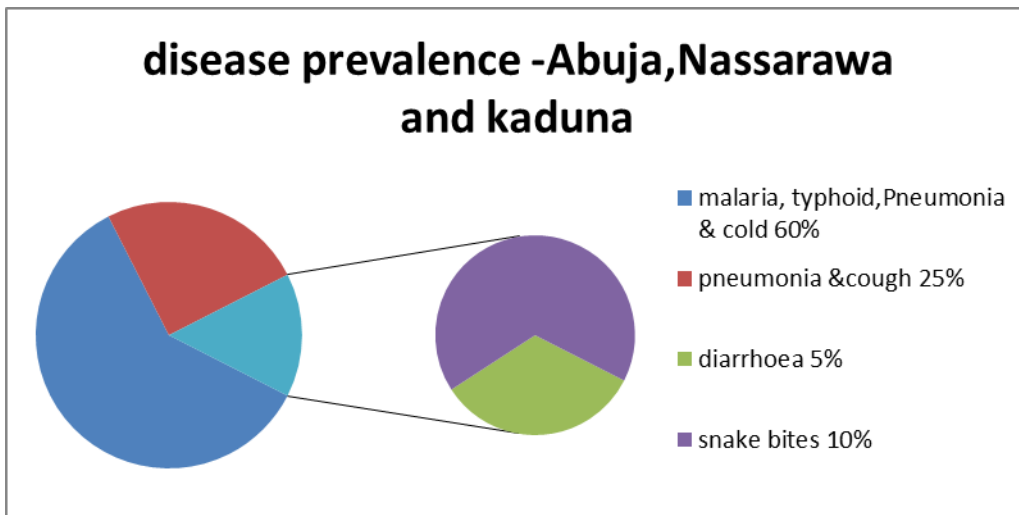


Figure 14: Respondent's opinion of commonest health concerns in Abj, KD and Nas

Figure 15: Disease prevalence by season

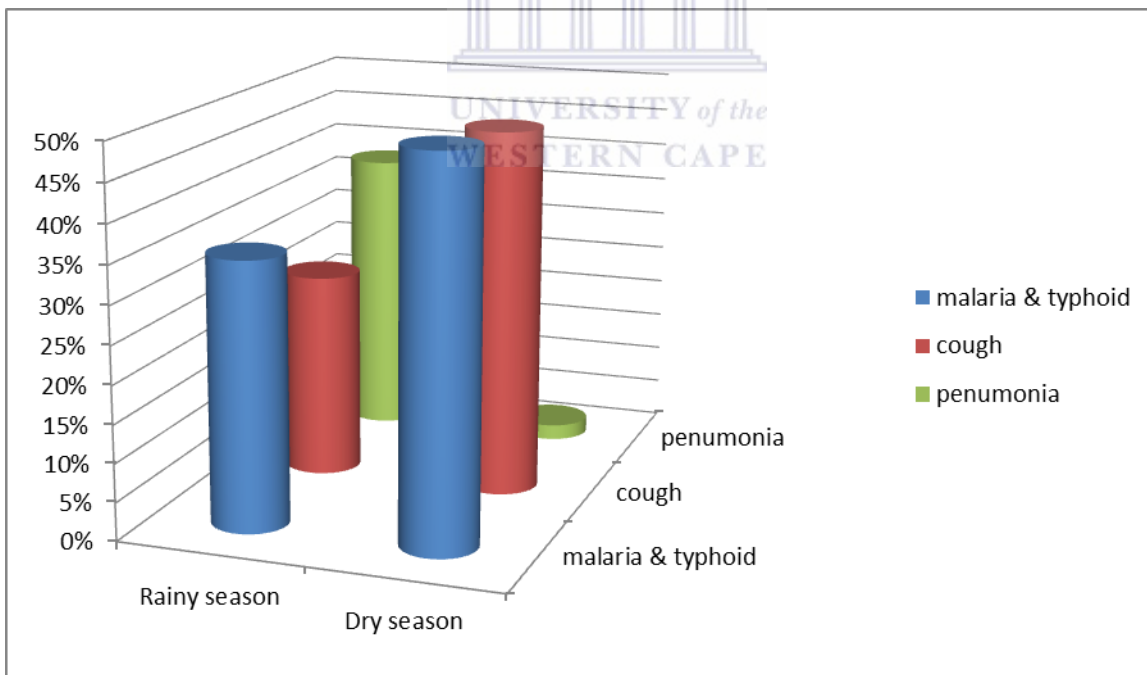


Figure 15: Respondents opinion of disease prevalence and commonest ailments by season

Data on the commonest ailments and disease symptoms in communities across the three states suggests that the prevalence of typhoid is an indication of not having access to clean

water. Although findings differed between urban and rural areas, however, they seemed to have almost similar ailments except that there were more cases of heart conditions in urban areas than epilepsy, arthritis, convulsion and asthma which were more rampant in rural areas.

Most reported cases of cough and stomach ache were either related to malaria or typhoid. Moreover, a high proportion of ailments were in children and teenagers between the ages of 1 to 15 years, while arthritis and heart condition was commonest among the elderly.

**e. Are there expired medicines in public and private dispensing facilities?**

Under this section, respondents were asked whether they had been sold expired medicines and whether their health condition improved after taking prescribed /dispensed medicines. A little over 40% of those interviewed stated that they had to repeat treatments for malaria and cough before getting well. Out of the 50%, 20% said they were more likely to abandon their medication during the second treatment than the first. Only 45% said they followed through with their treatment and got well after taking the prescribed medicines.

**f. Do prescribers comply with good prescribing practices?**

Based on the response to the first question, a follow up question was asked on good prescribing practices. Of more than one thousand interviewees in Abuja, Nassarawa and Kaduna only about three hundred, (a little below one-third) claimed they were satisfied with the prescribing patterns of officers. The fact that two third of the sampled population were dissatisfied with the polypharmacy practices is significant due to the fact that there have been assumptions that most patients do not really understand or were not quite knowledgeable about what a good/standard prescribing practice ought to be.

Apart from standard private pharmacies, other medicines sellers/vendors (chemists) sold medicines they were not authorised to sell such as Chloroquin and chloramphenicol but did

not understand the dosage regimen for most of the medicines they sold. An observation of dispensing practices at several (60% of those selected as study population) patent medicines sellers revealed that medicines were dispensed based on the purchasing power of the consumer. A typical example is that of a patent medicine seller in Kuje whom a patient approached for treatment for a boil. Rather than prescribe and dispense the appropriate dose of the antibiotic, he told the patient each capsule cost ten naira (10) and then went ahead to ask the patient “how many should I give you?”. A similar incident happened with another patient but this time, it was multi vitamins.

Prominent among the responses to this question was the issue of wrong/inappropriate prescription. At least 50% of those interviewed reported cases of being prescribed medicines that was either not suitable for their age, weight or health condition. A mother of a six month old baby in Gwagwalada said a doctor in a public facility had prescribed cough and malaria syrup for her infant but due to stock outs at that facility she had to purchase the medicines from a pharmacy. The pharmacist told her the medicines were not suitable for the weight and age of the infant and dispensed what she felt was the right medicine. Another respondent narrated her experience also where she was prescribed injections (at a secondary public facility) for her one year old son who had suffered diarrhoea on getting to a pharmacy in Gwarimpa; she was told the strength of the medicine was too high and not suitable for the boy.

It was rather surprising to know that people seemed quite conscious of expired medicines irrespective of their locational settings. Interviewed respondents (medicines sellers) reported buying expired medicines from the local market at mararaba (8%). While 60% of interviewed households and patients said private facilities were more likely to stock expired medicines than public since most public facilities were experiencing acute stock outs and shortage of medicines.

The issues surrounding access to essential medicines are very complex and as evident from respondent's opinion, beyond availability and cost concerns in public and private facilities, the threat of expired medicines is nothing to be compared to those of resistant medicines/treatment and wrong prescriptions from prescribing officers which seem to impact negatively on the health and finances of individuals/households.

Data suggests that drug resistance appears to be the main cause of increased health/pharmaceutical spending in Abuja, Nassarawa and Kaduna as evident in over 50% of the study population claiming they had treated malaria and cough over two to three times before getting well. While inappropriate prescribing practices could be responsible for a number of unknown deaths. These factors call for further research to establish the accuracy and validity of this claim perhaps in a different sample population.

**g. Are medicines adequately stored and handled in public health facility dispensaries and warehouses supplying the public sector?**

For every questions answered by respondents and those interviewed, further reasons were given to buttress their points. When asked whether they thought medicines were properly handled and stored in public health facilities, dispensaries and warehouse supplying private sector, most of the respondents who were either pharmaceutical companies sales representatives, retail/wholesale distributors or retail vendors said medicines were usually sold in the markets. Often times, the distributors/suppliers store them in warehouses and seeing them as mere commodities, hardly pay attention to storage and handling instructions. Most interviewees cited instances where they went to a warehouse or store to procure medicines and on getting there, discovered that most of the medicines were being repackaged due to damaged packs. Some of the new packs had no labels on them and it was difficult to tell them apart without having to open the boxes.

A particularly effective approach patients and retailers have deployed is checking the NAFDAC registration number and expiry dates on the medicines package to ensure they are not expired which could also be another reason for most medicines packages and labels being replaced.

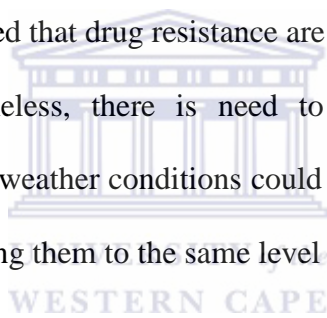
Picture 4: Medicines storage and handling in a chemist



*Picture 4: interview with a medicines seller regarding how medicines are stored and handled: permission was sought from this participant before publishing his photos.*

Most medicines found in the possession of patients were not in their original packages and were not properly labelled. While fifty percent of most pharmacies in urban areas appeared to handle medicines properly, the other half, mostly in suburban and remote areas - patent shops, markets and a number of pharmacies (public & private) either exposed medicines to air, direct sunlight or stored them higher/below the required room temperature.

A common observation was that most people (includes supply chain wholesale/ retail distributors, retailers, health workers and patients) did not store medicines properly at the time of the study. The WHO essential medicines list contains symbols that represent the form, temperature and weather conditions under which medicines are expected to be stored under. However, those symbols were missing from the national list of essential medicines in Nigeria. Moreover, the NEML contains no writing or warning that is indicative of the kind of temperature medicines are to be stored in. As a result, medicines are handled inappropriately, leading to loss of potency, reactions, damage, expiration and loss of all or active ingredients. There is a high probability that the way medicines are handled from the procurement stage to dispensing and use by the patient might be a contributing factor to the high incidence of drug resistance. Studies have established that drug resistance are often caused by frequent intake of substandard medicines. Nevertheless, there is need to establish whether mishandling-exposure to harsh and unsuitable weather conditions could weaken the potency of medicines, increase their toxicity thus reducing them to the same level as substandard medicines.



**h. Which professionals are prescribing and dispensing? Are pharmacists present?**

**Are medicines adequately prescribed, labelled and dispensed?**

According to the law, pharmacists have to be present to dispense medicines at all times. However, 42% of those interviewed at pharmacies/medicines outlets and or leaving primary healthcare facilities after receiving treatment stated that medicines were prescribed by doctors and dispensed by nurses in both public and private facilities( mostly in urban/ suburban areas). 42% said medicines were prescribed by nurses and dispensed by nurses (in suburban and rural areas). 10% said medicines were prescribed by doctors and dispensed by pharmacists (mainly in urban areas). While the remaining 6% said medicines were prescribed by pharmacists and dispensed by pharmacists (urban areas)

Figure 16: an illustration and representation of ratio of professional who prescribe and dispense medicines in Abuja, Kaduna and Nassarawa

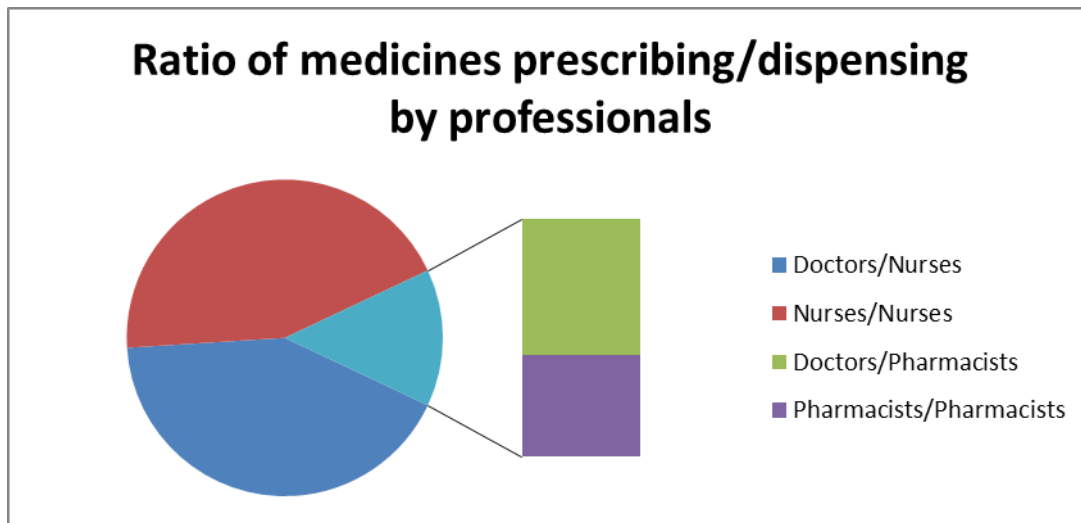


Figure 16: Respondent's perception of professionals who prescribe/dispense medicines.

Generally, two prescribing and dispensing patterns emerged and featured prominently during the interviews- doctors/nurses which seemed quite popular in urban areas and nurses /nurses which were more common in suburban and rural areas. For those who said medicines were prescribed by pharmacists and dispensed by same, a follow up question revealed that they were the ones who would seek treatments in a pharmacy or chemist rather than visit a clinic. The ratio of medicines prescribed by doctors and dispensed by pharmacists was quite low compared to the other variables. This indicates that good prescribing and dispensing practices are gradually declining and needs urgent attention. It also shows that bio medical professionals are not adhering to professional guidelines and ethics. It suggests a complete neglect of professional standards as stipulated by the law.

Findings suggest that pharmacists are not always available to dispense medicines in most primary healthcare facilities and this factor has led to increase in the number of incidences where medicines were wrongly prescribed and dispensed in public and sometimes private



facilities, regardless of the setting (urban, suburban or rural settings). The absence of pharmacists in most healthcare facilities in rural areas has further contributed to the misuse, underuse and overuse of medicines which could be classified as a waste of scarce resources.

Out of one thousand five hundred respondents that were interviewed in the three locations, more than half of them stated that most of the prescribed medicines were seldom dispensed due to shortage and stock outs which occurred frequently. 44% of that population claimed that medicines labels did not contain the name of the medicines but did include dosage instructions on how it should be used and they knew how to use it but could hardly tell the name of the medicine. 30% said they did not know or understand the dosage instructions of their prescribed/dispensed medicines. 26% stated they knew the dosage and duration of dispensed medicines.

*When asked if they adhered to the dosage regimen,* adults and teenage patients who had suffered malaria, typhoid, cough and other general health conditions were sampled with the exception of pregnant/breastfeeding women and children. And, this amounted to more than six hundred patients being interviewed at clinics and pharmacies. Out of the sampled population, more than forty people across the three settings (urban, rural and suburban) had positive experiences with regards to being informed on the right way to use their prescriptions.

Majority of the interviewees said they often discontinued after feeling better and kept the remaining doses for future use. Findings from the interview and group discussions revealed that rural dwellers with little education were more likely to adhere to dosage instructions if well explained by informing them of likely dangers of not completing the dosage than educated and literate urban dwellers.

From the discussions and interviews, it was evident that most prescribing and dispensing officers failed to educate consumers and patients about the dangers of not completing their dosage and the duration of the treatment/ dispensed dosage. Healthcare workers are respected professionals and their counsel/opinions are highly valued when shared with patients on any platform. This is the more reason why prescribing and dispensing officers should endeavour to educate patients at all times about the dangers of misusing, underusing and overusing dispensed medications.

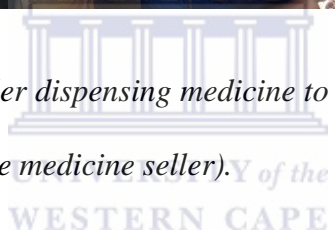
*When asked how many medicines were prescribed or dispensed per general ailment/hospital visit, more than half of the respondents stated that the minimum was three while maximum was four to five medicines. Forty percent of interviewed households, individuals and healthcare workers claimed that when dispensed medicines are more than two, patients find it difficult adhering to the instructions. On further inquiry, some mothers said children were prone to reject a third prescription/dispensed medication for ailments if given at the same time. This finding backs and highlights findings from previous studies that; prescribing and dispensing more medicines are more likely to make patients forget dosage instructions or fail to adhere to instructions.*

The way and manner in which medicines are prescribed and dispensed have the potential to influence access to essential medicines to the extent that failure to dispense fewer medicines per visit as well as patiently educating patients about dosage regimen and side effects of medicines has resulted in irrational use of medicines and resistance to a number of drugs. As literacy rates increase across the country, so has life expectancy at birth. This might not be unconnected with the fact that patients are continually adhering to instructions from their physicians and accepting rational use of medicines as their ticket to greater health. It is now left for the government and other regulating authorities to ensure a good practice of poly pharmacy across the country.

Picture 5: Observation of polypharmacy- prescribing, dispensing & labelling in a patent shop



Picture 5: A patent medicines seller dispensing medicine to the researcher in a local chemist; (I sought permission to publish the medicine seller).



**i. Essential Medicines availability by location**

Table 13: Essential medicines availability by location

S.No	Type of Medicine	Abuja	Nassarawa State	Kaduna State
1	Lonart /other kind of anti-malaria	Available		
2	Lumartem (paediatric)			
3	Ascorbic acid -Vit C ( adults/paediatrics)			
4	Chloramphenicol			
5	Amoxicillin(oral/injection)			

6	ORS			
7	Oral contraceptives/Condoms			
8	Multivitamin (adult)			
9	Multivitamin (paediatric)			
10	Folic acid			
11	Iron supplements			
12	Painkillers			
13	Ethambutol (anti TB)			
14	Teething remedy(paediatric)			
15	Cough syrup (adults)			
16	Cough syrup (paediatrics)			
17	Calamine lotion(paediatric)			
18	Gentamicin ointment			
19	Diazepam(injection)			
20	Gentamicin injection			
<b>Availability of</b>	<b>Essential diagnostic equipment,</b>		<b>Consumables</b>	<b>And Supplies</b>
1	Methylated spirit			
2	Disinfectants			
3	Syringes			
4	First Aid plaster			
5	Surgical blades			
6	Guaze			
7	Clinical thermometer			

8	Autoclave drums			
9	B/p apparatus(Accuson)			
10	Stethoscope			
11	Plaster			
12	Cotton wool/crepe bandage			
13	Adult weighing scales			
14	Couch			
15	Surgical gloves			
16	Iodine			
17	Hydrogen peroxide			
18	Vaccines			

Table 13: N/A = Not available, A= available: list of available essential medicines in level A and B facilities across Abuja, Nassarawa and Kaduna

The fifth edition of the national essential medicines list recommended a total number of 21 medicines and essential health equipment for level B primary healthcare facilities (dispensaries and health workers) however, ninety three percent did not have absorbent gauze, plastic aprons, clinical thermometer, and surgical blades at the time of this study.

For level A (health centres) primary facilities, eighty eight percent of them also lacked adult weighing scales, microscopes, surgical gloves B/P apparatus, and surgical blades. Most of the village dispensaries did not have anti malaria medicines while the health centres lacked urine test strips and malaria smear test strip. While ninety five percent of the village dispensaries did not have condoms, sixty percent of the health centres did not have contraceptives and were more likely to experience high incidents of stock outs.

The commonest medicines in village dispensaries were paracetamol, folic acid and ascorbic acid (vitamin C).over eight five percent of the village dispensaries lacked anti malaria medicines, ferrous salts, crepe bandages, methylated spirit and calamine lotion. Part of the explanations tendered for the reported/observed shortage of medicines and supplies was due to the fact that most of the village dispensaries have been abandoned by the state and local governments and allowed to function on their own without any form of support. This explains the prevalence of self-help health posts and volunteer health workers managing fifty eight percent of village dispensaries in remote parts of Kuje, Bwari, kwali and primarily in Kaduna and Nassarawa with the exceptions of Keffi, Lafia, Zaria, Sabon Gari and Sanga.

Majority of the village dispensaries in Nassarawa state lacked electricity and clean water, while those in Kaduna were more likely to have electricity and occasionally generator sets. It was assumed that due to their proximity to the FCT, most village dispensaries under Karu LGA in Nassarawa would have electricity and access to clean water. Surprisingly, it was not so-Those in Kaduna had better chances of being stocked with basic infrastructures and supplies than those in Nassarawa and satellite towns around Abuja.

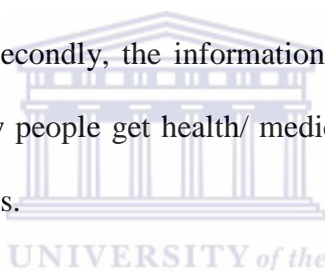
Although most level-A health centres within AMAC in Abuja had fifty percent of the recommended essential medicines and vaccines, they recorded high stock outs and shortage of medical consumables, particularly in reproductive health centres. The only explanation given for this was the fact that most of these facilities received their supplies from the government and any recorded shortage could be due to supply side constraints. In Kaduna state and parts of Naassarawa, most of the dispensaries hardly got supplies from the government, hence the health workers procure medicines from the general market and sell to patients. This practice to a minimal extent ensured that forty eight percent of rural healthcare facilities did not experience high incidents of medicines shortage or stock outs, even though they appeared to be lacking over sixty percent of the recommended essential medicines. In

addition, medicines sold by health workers even though they are sold in public facilities, seem to be sold at the same prices obtainable from the private sector.

## **5.8. Education, Health Education and access to essential medicines.**

### **How education affects access to and rational use of medicines –findings**

Data gathered from the field work was analysed at the end of each field trip and after analysing findings that were in line with the research questions and objective of the study, new factors emerged and one of the emerging factors although remotely, was education. Findings suggest that the level of a person's education could be an enabling or constraining factor in access to medicines. Secondly, the informational milieu of people forms part of access to medicines. That is, how people get health/ medical information also emerged as a direct factor in access to medicines.



By way of background, (please refer to chapter four) the core foundations of access to essential medicines include access to information. Access to information could be two ways: it could be access to information on the part of the government about health system performance/ demographics for resource allocation. While on the part of the consumers, it is access to accurate and reliable information on health issues, health educational information about disease outbreaks, safety measures, suitability of pharmaceuticals and new services provided by the government. This sector and the hypothesis tested chose to focus on access to information by consumers.

If access to health information such as: trends on appropriateness of pharmaceuticals counts towards access to healthcare for consumers, then, one could consider it a factor of access to medicines. For instance, as recently as 1800, doctors had no idea what was killing their

patients after surgery due to the information gap that existed then, however, with the advancement in technology, they were able to have access to trends and needs in healthcare and were able to find answers and solutions.

Furthermore, as far back as the 1500s, there was prevalence of superstition in medical practice in the developed world. However, as time went on, that information gap was closed through alliances and bilateral exchange of information on diseases, emerging trends and patterns in medical practice leading up to the formation of the World Health organization. Therefore, there is always an information gap between current standard medical knowledge and the challenges which requires that information be made available at all times for both practitioners and consumers.

A typical example is that of Ebola: even though Ebola has ravaged parts of east and central Africa in the 70s, when it hit Nigeria, people were easily deceived by false information on social media to the effect that there were information such as “if you bathe with salt, you will not get Ebola”... Eminent and respectable people including Supreme Court justices and highly educated people resident in both urban and rural areas fell for it. If educated people could believe false information spread on social media platforms then it suggests that how people get information should be considered a direct factor in access to essential medicines. In as much as the level of a person’s education plays a role in their ability to access health information, which is to say that illiteracy could be considered a constraining factor in access to medicines. However, the emphasis should rather be on the content of the information, how people access this information and how to get the information across to the right people at all times.

To take this observation a step further, a hypothesis test was carried out to find out the extent to which access to health information influenced access to medicines. This was done based



on the frequency of the occurrence of phrases such as “I saw it on the internet”... “I got a broadcast”... “I signed up for health tips” ... “I read on twitter or Facebook that this herbal mixture could cure me” “an online doctor said I could take the medicine four times a day”...

The data presented in this section shows the relationship between people’s ability to access health information and access to medicines. Given the fact that the core foundations of access to medicines include information access, this data shows how access to medicines is strongly affected by the level of people’s health education and access to health information.

Figure: illustration of how health information affects access to and rational use of medicines

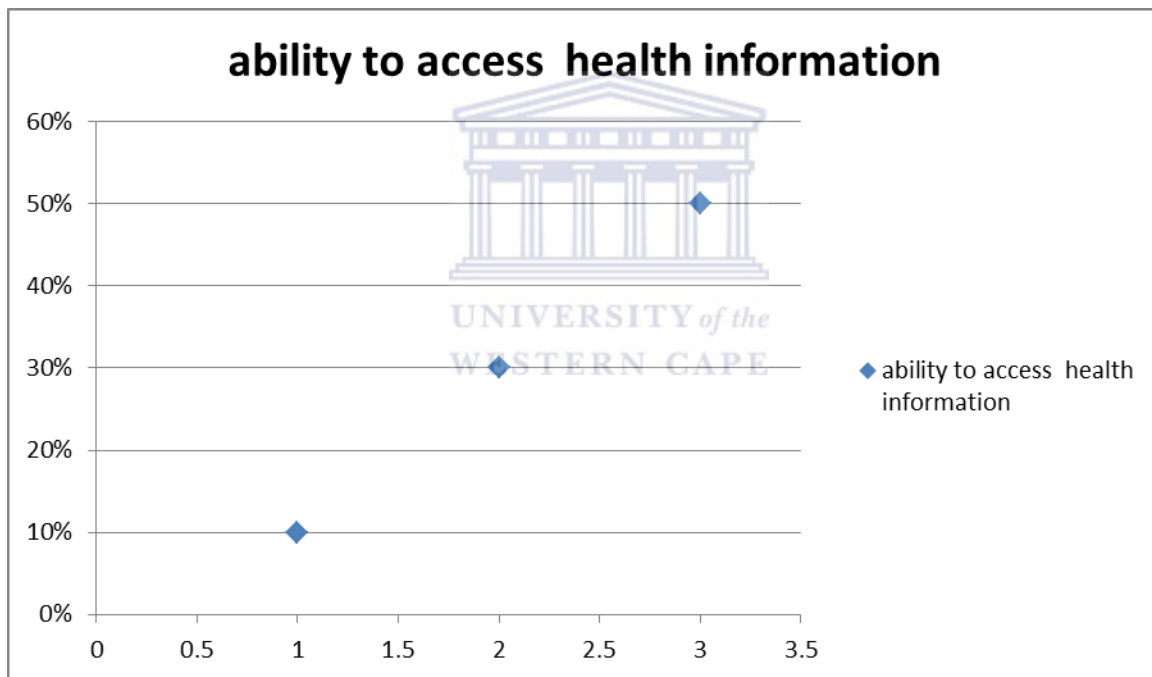


Figure: correlation between health information and access to medicines

The illustration on the scatter plot shows that the higher the level of education, the easier it is to have access to health educational information that could influence health seeking behaviour such as decisions regarding where to seek health care services, enquiry about health conditions, how and where to purchase medicines, adherence to rational use of medicines and appropriateness of pharmaceuticals. As the value of the level of education

increased, the data on ability to access health education also increased. The more people are exposed to health information, whether accurate or inaccurate, the greater their chances of spreading such information via social media for health education/decisions and the more they are willing to comply with information, medications or treatments that can improve their health. The scatter plot indicates that the two variables are positively correlated.

## **5.9. Qualitative Analysis of Research Findings**

### **5.9.1. Content Analysis:**

Research findings on; the investigation of the Nigerian healthcare system with special focus on access to essential medicines in Kaduna, Abuja and Nassarawa has shown that the issues and challenges that characterise access to essential medicines in these areas are multi-dimensional;

**On the supply chain side**, constraints such as poor coordination of medicines procurement and supply to public facilities leading to stock outs and shortage of medicines; a poorly regulated and laissez-affair market where wholesalers and distributors add high mark ups without due consideration or regard for the purchasing power of poor consumers who pay mostly out of pocket- results in high cost of medicines in the private sector; poor medicines financing by the government-effects are visible in delayed treatments /poor access to most innovative and lifesaving medication in public facilities; low performance benchmark for professionals as a result of the weak monitoring system-evident in absence of qualified personnel in both public and private facilities; neglect of village dispensaries by local and state governments, lack of synergy and information gap between the three tiers of government and other stakeholders- undermining the role and importance of medicines vendors in access to essential medicines, information gaps between supply and demand side;

and poor poly-pharmacy practice( prescribing and dispensing practices). There are other remote issues, but those issues are summed up in the highlighted ones.

**On the demand side:** low education, low purchasing power, irrational use of medicines (which appears to be a direct factor of poor prescribing and dispensing practice ). Even though there are policies and standard practice guidelines in place within the Nigerian health system, but the challenge appears to be that of implementation, regulation, monitoring, synergy among stakeholders and sustainability of initiatives/projects.

In addition, it was discovered that although majority of health care workers knew about the existence of an essential medicines list, they were not knowledgeable about its contents. Moreover, over eighty percent of sampled primary healthcare facilities did not have copies of the national essential medicines list at the time of the study. An analysis of the national essential medicines list indicated that Paediatric formulations and storage instructions for medicines were not properly highlighted in the fifth revision. In order to analyse data findings and replicate, validate and support the findings that were earlier analysed quantitatively, focused group discussions was analysed using content analysis.

#### **Content Analysis Coding Process:**

Data was collected using tape and video recorder, then transcribed into text in the form of field diaries and notes. Transcribed text were analysed and developed into codes and later converted into themes and sub themes. Thereafter, converted themes were organized by categories in order to detect and classify similar patterns, expressions, commonalities, discrepancies, relationships, and interrelations. Identified expressions and patterns were further re-examined resulting in retention of meaningful patterns and processes. Finally, all identified patterns and phrases were analysed for comparisons and to enable me make generalizations as well as create connections and linkages with systems theory, previous

studies and points of references such as the 4As as outlined in chapter three: The categories and themes that emerged from the qualitative content analysis are presented below:

- i. Affordability
- ii. Accessibility
- iii. Acceptability
- iv. Availability

The major themes and patterns in written responses that were counted are; 'expensive, 'it was costly', 'fair', 'I could not afford it', 'high cost', 'I do not recognise the brand', 'prescription' 'number of medicines prescribed', dispensed' prescribed and administered', distance to facility' 'cost of transportation', 'medicines adequately labelled', 'essential medicines policy', 'medicines reliably of good quality', 'financial obstacles', ' medicines on the shelf', 'counterfeits', government intervention'. These themes and concepts were consistent with research questions as specified in chapter 3.2. During the coding process, each theme/pattern was counted based on the number of times it appeared.

The analysis of identified patterns was found to be consistent with previous studies in developing countries regarding availability and affordability being the main constraining factors of access to essential medicines. Secondly, it indicated that the national essential medicines list was lastly updated in 2010 after seven years with the addition of standard treatment guidelines and dosage instructions for each medicines formulation.

The patterns also showed that although the essential medicines policy document was official with policy implementation plans that set activities, responsibilities, budgets and timelines, it was mostly functional within the public sector, excluded the private sector and seemed to lack proper coordination. This lack of coordination appeared to be responsible for an obvious

information gap resulting in a good proportion of health workers not being knowledgeable about issues surrounding essential medicines.

Prominent among key patterns was the occurrence of themes/expressions similar to people not being able to access medicines due to the following: not being able to afford or pay for prescribed medicines, medicines shortage/stock outs at closest facility, distance to nearest healthcare facility/chemist, not being familiar with prescribed medicine, not being educated on how to use dispensed medicines, uncertainty about the efficacy of prescribed/dispensed medicines due to past treatment failure and unwillingness to pay for expensive medicines and consulting fees at certain facilities.

Data also suggested that there was disconnect and huge communication gap between the organizational and operational levels of the Nigerian health system. Such lack of synergy and cooperation are evident in how health centres (state) and village dispensaries (local government) are being managed differently with varying standards. That is, there were noticeable gaps between what the government and policies promise and what the healthcare practitioners are doing at the operational level, particularly at the local government level. To the extent that even when the government had declared free health care for certain class of citizens, most of the public facilities ignored that, went ahead and kept charging user fees. In the case where certain treatments and medicines are said to be free, patients are being made to pay for medical supplies or purchase them from private facilities where they are more expensive.

Level B (village dispensaries) healthcare facilities are evidently existing as something a little lower than health posts, notwithstanding the fact that it services a vulnerable population - forty nine percent of one hundred million Nigerians are women, majority of whom are poor , illiterate and live in rural areas. Reoccurring phrases and expressions from the interviewed

respondents indicate that having been neglected, and starved of funding and pharmaceutical supplies by the government, village dispensaries are barely surviving through community efforts. And, if not revived, has the potential to increase maternal and under-12 mortality ratios as well as make the already poor villagers poorer. The underlying reason for alluding to under-12 mortality is the fact that a review of hospital records indicated that the most frequent users of rural dispensaries in suburban and rural areas are children from fifteen years downwards.

Of all the 4As, affordability featured at every stage of the data collection exercise. Most interviewed individuals and households cited financial obstacles as the key factor responsible for a great number of patients not receiving treatments in Abuja, Kaduna and Nassarawa. For instance, when distance (accessibility) was not considered a factor, phrases like “I could not afford the medicine/treatment” kept coming up.

Content analysis also revealed disparities in medicines availability and pricing among different sectors within the same state. For instance in Abuja, most frequently used and highly demanded medicines indicated higher mark ups particularly in the private sector than others. While in Kaduna, same medicines were relatively cheap in a local chemist shop than in a private pharmacy. These variations reflect an unregulated or poorly regulated pharmaceutical sector where the medicines regulatory body has failed to build its capacity to effectively manage and control pricing dynamics for the greater good of all.

Generally, the essential medicines market might be competitive but to a minimal level given the fact that apart from the NHIS medicines price list, the government has not set a benchmark on markups therefore, consumers are made to pay out of pocket for medicines based on their purchasing power. These observations also raised the issue of quality control and counterfeits. Despite the poor regulations regarding medicines pricing, there was

surprisingly, very few reported cases of counterfeit medicines in the market. Reports of reoccurring health conditions where respondents treated a particular ailment more than once before getting well are mostly indications of drug resistance which might not be unconnected with prolonged (previous) exposure to substandard medicines or as a result of not completing dosage regimen/medications during previous illness.

The absence of paediatric essential medicines in most of the facilities at the time of this study was quite symbolic of the fact that children (infants) were three times more likely to experience shortage of essential medicines than adults. This is made worse by inappropriate prescribing/dispensing patterns where children are put at risk of overdose being exposed to medicines that are not suitable for their age and body weight. These factors are also connected to the absence of pharmacists in most facilities at the time of dispensing medicines as indicated in figure...

Based on data collected through questionnaires, interviews and observations in selected facilities that are representative of Abuja, Kaduna and Nassarawa this research concludes that the government has to get more involved if the medicines supply system has to function effectively by introducing price control policies and other strategies aimed at improving access to medicines and MDGs eight.

## CHAPTER SIX: DISCUSSIONS

### 6.1. Terms of Reference

The previous chapter presented the research findings. The data was generated through quantitative and qualitative methods. The findings gave insight into issues of access to essential medicines in the three states of Abuja, Kaduna and Nassarawa. It also provided a picture of how access to medicines interconnects with those of other major components of the Nigerian healthcare system.

In general, what would seem evident from the result is the extent to which access to essential medicines in the three states mirrors what could be similarly observed in the country as a whole and indeed other developing countries. It helped in answering the research questions stated in 3.2 by revealing correlations, relationships, disparities and patterns that helped in making generalizations that could be said to be representative of i, the general condition of primary healthcare facilities in the health system; And, ii. Essential medicines availability, affordability, acceptability and accessibility.

This chapter discusses the research findings as a reminder. The data collected were interpreted and analysed using content analysis and STATA- Pearson's test. They were presented in the form of tables, charts, themes and pictures (the pictures were published with permission from the participants). In discussing the research results, access to medicines in relation to other components of a functional health system (that were highlighted in chapter one, and four) and general systems theory that have been highlighted previously in chapter two (literature review and theoretical framework) will serve as the analytical basis and point of reference for the assessment of the Nigerian healthcare system in Abuja, Kaduna and Nassarawa states.



In addition, this chapter examines the status quo regarding access to medicines in Nigeria based on the research findings and explores suggestions for further research on access to essential efficacious and affordable medicines. Likely explanations to be proposed would be: new forms of pooled pharmaceutical procurement, pharmaceutical budget, price and data transparency, cost-therapeutic benefit assessment of medical products and greater generic competition.

Data was collected on the various stages of medicines procurement, supply and distribution in order to identify whether these processes contributed in one way or the other to lack of access to essential medicines in the study states; the nature of the systemic challenges to be handled; identifying systemic structures and key dynamics and locating policy options and practical means of addressing the issues for sustainable change. Interviews were conducted with a range of stakeholders, including representatives from the federal, state and local government, NGOs, Pharmaceutical companies and the state Central Medical Store-CMS officers.

## **6.2. The Nigerian Health System and the Application of the General Systems Theory**

At this point, there is need to ask what descriptive data and study findings suggest about the state of the health system and that of access to essential medicines. Over the years (from 1970 to 2014) the Nigerian healthcare budget has increased to over ninety eight million naira (USD 451,694.7), yet without measurable impacts. Even though available data suggests that infant and maternal mortalities have reduced from year 2000 till 2013, it does not seem to be connected to increase in health funding. Perhaps, one could say it is as a result of changes in the quality of leadership and introduction of initiatives that improved access to essential medical products such as the roll back malaria campaign and the introduction of the drug revolving fund projects in most states. Possible reasons for suggesting ‘change in quality of

leadership' and 'essential medicines programs' is because the other possible components or in this case variables such as health financing, human resources for health, health information systems and service delivery have not given much to be desired. Neither have there been noticeable changes except in private sector service delivery which appears to have improved with increased private out of pocket healthcare spending.

The major concerns of access to healthcare and essential medicines in Kaduna, Abuja and Nassarawa are not limited to but could be narrowed down to the following factors/variables:

**Availability** – shortage of physical and soft infrastructures such as electricity, dilapidated buildings, lack of electricity and storage facilities for medicines, stock out/shortage of essential medicines and basic diagnostic equipment/consumables. There is also the issue of shortage or absence of qualified personnel such as doctors for consulting/prescribing and pharmacists for dispensing of medicines. Interviews, questionnaires and group discussions indicated that the most common practice with regards to poly pharmacy in Abuja, Kaduna and Nassarawa was that of nurses prescribing and dispensing medicines which could be said to be responsible for the high rate of inappropriate prescription/dispensing patterns noticed in the study areas.

**Affordability** – due to poor funding from the government and low regulation which results in uncoordinated supply chain/ medicines market out of pocket spending for medicines increase daily and become expensive. The standard ratio of doctor to patient is expected to be 1:600 but in Nigeria the ratio is one doctor per six thousand patients. This fact is worsened by the lack of incentives and poor remuneration in the public sector leading to the bulk of health workers migrating to private sector/practice where healthcare costs are more expensive but with better returns for practitioners. Interviews revealed that expensive household spending

on healthcare per illness and user/consulting fees has been responsible for self-medication and the reason why most patients patronize traditional herbalists and quacks.

Beyond economic affordability of needed medicines and healthcare services, findings also suggest that there is the issue of information gap- information accessibility about the availability and efficacy of medicines/level of care and services seemed to be out of reach. To those interviewed, there was no platform readily available with information regarding available medicines in the country and their efficacy. NAFDAC has tried in this regard, but there is always room for improvement and much left to be done, such as creating a platform where citizens can easily get information on all medicines sold in the country and their active ingredients. Training healthcare professionals by sector would also help in keeping them upto date about new trends/needs not just in Nigeria but in the global healthcare/pharmaceutical industry.

**Accessibility:** Findings from this study have shown that the accessibility of needed medicines, infrastructures and personnel to everyone without discrimination, including i. Physical accessibility of needed medicines to all has been a constraining factor particularly in remote areas. People living in remote areas are unable to access quality healthcare facilities, qualified personnel and efficacious/appropriate essential medicines due to their locations. Urban/rural disparities in distribution of healthcare services which started from the colonial era is still in existence and evident in the neglect of village dispensaries and low funding of health centres. Interviews revealed that most of the pharmacies in public healthcare facilities have been privatised, which is symbolic of discrimination against low income earners who cannot afford co-payments for medicines and consulting fees.

Rural –urban differentials are key determinants of access to medicines in Kaduna, Nassarawa and Abuja FCT. Moreover, these variations are major variables and key indicators of health inequalities in Nigeria since it affects health outcomes in great measures.

The four As of access to essential medicines was used to assess sample population’s access to 20 essential medicines as well as state and federal governments efforts at improving access and use of essential medicines at the primary care level. The study looked at the prices people pay for medicines and the quality, safety, efficacy, acceptability, availability and accessibility of the medicines generally. After data analysis, several patterns emerged due to the overwhelming prevalence of urban-rural differentials.

Findings indicated that the poor coordination of health care at the primary level contributed to and aggravated shortage of medicines in non-urban areas. For instance, it is the responsibility of states to ensure that all medicines sold at primary healthcare facilities had met appropriate standards for quality and efficacy and are available at all times. Yet, in all three states, there was evidence of poor regulatory practices and third party interference with access to healthcare and medicines in level B facilities. While some level A facilities in Kaduna and Nassarawa were better off in terms of prevention of unreasonably ‘high pricing’ (the prices were not equitable but fair in comparison) for medicines in the public facilities, Abuja FCT( all AMAC districts) failed in implementing equal pricing which impacts greatly on the poor particularly in Bwari and Karu LGA in Nassarawa. This unequal pricing compels the poor to pay a disproportionate portion of their (sometimes irregular and seasonal wages for farmers) earnings for access to medicines.

Affordability of medicine/ healthcare: Costs of healthcare and financial barriers in urban as well as rural dwellers.

From all indication, years after colonialism, its legacy remains in the form of prioritizing urban population and healthcare needs over that of non-urban dwellers. Reasons are that while affordability was generally problematic in all study areas, data confirmed that rural dwellers pay higher for medicines than urban dwellers in due to the disproportionate pricing and uneven distribution of resources/ infrastructures. Moreover, rural dwellers and women were more likely to be impoverished by the price they pay for medicines than urban dwellers and men. For pediatric formulations, when compared to adult medicines, accessibility and availability was problematic in non urban areas. Whereas in urban areas, the major challenge was quality and inappropriate prescription given the fact that pediatric medicines were generally scarce due to a general perception that pediatric generics are of low quality coupled with lack of prescription and dosage instructions.

Availability and physical accessibility was relative; it varied in time and space. In Abuja FCT generally it was not problematic rather, the key concern was over quality and prescribing pattern due to the over saturation of chemists and patient medicine stores without constant regulation (monitoring by government agencies. However, in Kaduna and other areas of Nassarawa (excluding Lafia & Keffi) where availability was not problematic, proximity or distance of facilities where the medicines would be accessed was a hurdle. Followed by the costs of transportation and the cost of the medicine itself

Generally, information accessibility about the availability and efficacy of medicines as well as inappropriate prescription and shortage of pediatric was evident in all three states. Rural-urban differentials had little or no impact on inappropriate dispensing / prescribing pattern. Even though health workers in non urban areas were more likely to prescribe and dispense medicines inappropriately than their colleagues in the urban areas.

Due to the composition of the urban healthcare services users, prescribers and bio medical professionals were more careful and paid attention to patients' safety than those in the non-urban areas. Most of the study participants in urban areas complained about poor prescribing and dispensing patterns and expressed dissatisfaction over the way government agencies were lax over monitoring medicine prices and liberation of fakes and unavailable pediatrics medicines for special condition. Surprisingly, those in non-urban areas felt that the price of medicines was a challenge coupled with the non-availability on health centers and personnel. Yet again, urban dwellers did not pay particular attention to the quality of medicine or the prescribing/ dispensing pattern rather but focused more on the physical availability, affordability and accessibility of medicines.

During the rainy season, rural dwellers were more likely to fall sick (imalaria, diarrhea) than urban dwellers. However, during this period most of them are unable to pay for the medicines or cost of treatment given the fact that their income is seasonal and usually spent on seedlings/ planting during the rainy season when most of them are more likely to suffer bouts of malaria.

In rural Suleja, Sabon Gari and Pesseli, access to medicines was generally poor. During the rainy, planting seasons ; medicines availability become poor because some of the health facilities and patent stores are run by volunteer health workers who engage in farming during the planting season. Hence, some of the health posts remain closed during the day and in the case of any emergencies, medicines are either expensive, physically unavailable, expired or there are no personnel to prescribe and dispense in emergency situations

#### Abuja

In Abuja, medicines were generally expensive, physically available and accessible in AMAC and some parts of Gwagwalada but places like Bwari experienced acute shortage. However,

in places like Kwali and Abaji medicines were relatively more expensive compared to other areas. In Apo and Kubwa (under AMAC districts) and some parts of Garki, the risks of poor prescribing pattern and counterfeits were higher than in other areas.

While sixty percent of the residents in Abuja were willing to pay any amount for quality medicines, those in satellite towns, poor people, women, pregnant women, uneducated people were unwilling to pay for medicines and did complain about the prices of medicines. The latter were more concerned about the cost of pricing these medicines in private facilities and its shortage in public facilities. The major difference among social groups/ populations was that while there seemed to be consensus on the high price of medicines in Abuja, generally aim in Abuja is gender, age and class sensitive. That is, medicines affordability in Abuja generally was relative and varies by gender, class, age and rural-urban differentials. For instance, even among private health care where medicines are generally **priority** medicine prices varied and was determined by the location of the facility and quality of patrons.

While poor committees in Abuja; FCT and Satellite towns had access to medicines and healthcare at low levels of healthcare (level B&A facilities) generally poor respondents in Kaduna and Nassarawa experienced low access to all levels of the healthcare and in cases where there was access to lower healthcare facilities, paid much more for such care.

#### Kaduna

In Kaduna, high costs and scarcity of most medicines were quite high. While medicines were generally accessible in places like Sanga, Zango Kataf and urban areas there was higher scarcity and risks associated with quality in most nonurban locations.

#### Nassarawa

In Nassarawa State, price did not really have a significant effect on peoples demand for healthcare. Rather, the key issue was mainly the availability and accessibility of facilities, qualified personnel and quality medicines. Proximity to Nyanya and Maraba increased the risk of buying substandard medicines for most respondents. These two locations have open markets where patent medicines sellers procure cheap medicines for retail purposes and other individuals are allowed to purchase at wholesale prices without prescriptions.

Even though Nassarawa has a good number of primary healthcare facilities, level B health posts were not available in most rural communities. Access to medicines was higher in level A health centre compared to level B health posts. The introduction of user fees at most health facilities influenced the health seeking behavior of thirty percent of the respondents and females. In nonurban areas 75% of the respondents households said they would only use the health centre or pay for medicines if their reasons for seeking care was for their children. 35% of the respondents who were female and pregnant or breast feeding and living in non-urban areas agreed to using herbs and giving at home due to inability and in most cases unwillingness to pay for medicines or user fees

**Acceptability** – acceptability is one of the issues that characterise access to medicines as proposed by penchansky et al<sup>652</sup>, however, surprisingly, according to study findings, it is one of the factors that pose little or no challenge to access to medicines. Given the success rate of polio eradication campaigns and willingness of households to accept medicine supplies in remote and hostile areas, it was revealed during group discussions with women- mothers and households with children under -five years that health workers have become quite respectful of religious practices and cultural norms, hence their willingness to accept medical supplies and accord the much needed respect to medical ethics.

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### **6.3. Access to medicines, the Health System and Systems Theory**

Systems theory brings on an understanding that systems comprise of a set of nested and overlapping interaction networks that link all units of social analysis and structures, this definition presupposes that a ‘system’ comprises the whole interactions where the whole is greater than individual parts (Chase-Dun & Hall, 1993). Therefore, for the Nigerian health system, it is the whole nested network (components) with which it is interconnected that constitutes its “healthcare system”. Therefore, paying attention to one aspect and neglecting the others will ultimately affect health outcomes and impact negatively on the other components. For instance in Pesseli community and other parts of rural Karu LGA of Nassarawa state 98% of level B facility (sometimes the only healthcare facility) had no personnel, diagnostics and medicines. The consequence is that most of the women from these communities would rather have home birth than risk being attended to by volunteer community health workers. And, in the process of giving birth at home some get infected, lose their lives or the babies, adding to the increasing number of morbidity caused by shortage of resources in the healthcare system.

Furthermore, according to Chase-Dunn and Grims (1995), the systemic interaction forms a routine to the extent that the connected parts (actors) begin to depend, and to form expectations, based on the connections. What does this mean for essential medicines and other components of the healthcare system, it means that as a result of the reutilized systemic interactions, essential medicines and diagnostic, human resources for health, leadership etc come to depend, and to form expectations based on the connections. Therefore, any obstruction in one actor disrupts the functionality and effectiveness of the entire bio medical healthcare system. The neglect of human resources, healthcare financing or medicines which are core components of a well-functioning health system contributes to poor health outcomes. There is a feedback loop between all components of the Nigerian health system and each

component reinforces the others. Where a qualified bio medical personnel or doctor attends to a patient and prescribes the right medication, a pharmacist would dispense and ensure that the patient gets the prescribed medicines as well as dosage instructions. However, if a qualified doctor prescribes and due to physical or economic inaccessibility patients are unable to get the prescribed medicines, the system receives a negative feedback in form of inappropriately prescribed , expired or sub standard medicines purchased from an open market which ultimately affects health outcomes.

In his works “The Social System” and Towards a General Theory of Action, Talcot Parsons presented a general theory of society where he proposed that a social system is one where the interactions are based on “need-disposition and facilitated through the basic concepts of cognitive, cathartic and evaluative orientation”. In another work co authored with Neil Smelser, parsons presented the rudimentary model of the systems analysis using a hierarchical approach and the organizing principle (Economy& book society). This model is about hierarchies in all systems and the feedback circle. The same applies to a health system. Providing quality healthcare services effectively within the health system behave that access to essential medicines be increased and this involves a systems approach. Although they function differently, every part of a health system is interlinked and connected to the other. All the components are players who function together for the good/output of the general system. No component can be substituted for the other, rather, from leadership and governance to health financing, human resources, health information systems to essential medical products, and to service delivery every aspect of a health system is needed for optimal performance.

The choice of focusing on access to essential medicines in this study was primarily to stir up debate around essential medicines in order to demonstrate its significance as an indispensable and integral component of the health system that has been overlooked but invariably reducing

health outcomes and frustrating attempts at healthcare reforms. This study was meant to redirect focus on access to essential medicines given the role medicines play in a health system and its ability to not just save lives, but prevent diseases.

For optimal performance of the health system at large, there is need to ensure all components are functioning at every level of care. And, it can only be achieved by ensuring there quality leadership/ healthcare governance at all levels for the formulation of and implementation of good policies. Secondly, there is need to increase health financing and budgetary allocation for the management and maintenance of human resources, sponsoring of research and procurement of pharmaceutical supplies. Level B primary healthcare facilities appear to be left out in mainstream healthcare planning and communities located in remote areas are more prone to disease outbreaks due to poor sanitation and lack of access to clean drinking water. Consequently, an analysis of disease prevalence and healthcare spending in the study areas suggested that children under 15 years are more likely to fall sick in rural areas than in urban and semi urban settlement. Comparatively, households living in remote areas are more likely to be impoverished by out of pocket health spending than those living in semi urban and urban locations.

Furthermore, the use of health information systems would go a long way in data storage, analysis and management for proper decision making and resource allocation at all levels of care. It would also help in easing medicines procurement and supply logistics management through the introduction of innovative medicine information system. In addition, introducing new policies, programs and intervention/ health information platforms would help in improving access to medicines.

From the foregoing, it is evident that more than a decade later, after the Abuja declaration, just like in most Low and middle income countries access to healthcare and essential

medicines in Nigeria remains problematic and requires sustainable solutions. From poor health financing to shortage of personnel, poor stewardship/ leadership, poor health information management systems and inadequate access to pharmaceuticals, diagnostics and medicines, the Nigerian bio medical healthcare system is in quest of improving effectiveness and efficiency of the health system.

Given that the issues in the Nigerian health system and ATM are diverse; differ and range from personnel to financing, etc. affecting every element as well as having negative effects on health outcomes, in the same way, strategies for improving the efficiency of the health system also requires a complex and multi faceted approach. For instance, bio medical personnel, physical infrastructures, medicines quality and price regulatory bodies, pharmacists, medicines and diagnostic equipments perform different functions which are related to preventive and curative care. Each of these actors are structured to ensure the wellbeing of patients in curative and preventive ways; ensuring good health outcomes and wellness of all populations while making sure that individuals' physical wellbeing does not come at the expense of economic disability or poverty. In systems theory, each variable, element or component of a system is linked to the other and cannot function in isolation. Similarly, what this study has done is to show that the issues and challenges of ATM in Kaduna, Abuja and Nassarawa states are complex and in finding a solution, one has to understand the peculiarities and complexities in order to be able to proffer a sustainable solution.

For instance, even though medicines prices differed across all the surveyed states, there was evidence that the disproportionate pricing of medicines was affecting all social groups. Hence, one could classify affordability as a “systems archetype”, given the fact that this pattern was generic across the three locations, therefore could be applied to a wider context. Economic inaccessibility of medicines remains one of the greatest challenges of ATM in

Nigeria and has left many rural households and vulnerable communities impoverished. Out of pocket payments for medicines are strongly correlated with poor health outcomes and influences health seeking behaviour.

Furthermore, in systems theory, every element of a system are interconnected and this interaction influences the output of the system either in a positive or a negative manner. Similarly, a health system can only as good if all facilities are provided human and material resources without which the entire system cannot function optimally.

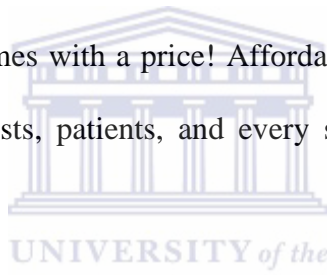
#### **6.4. Leadership and Governance**

The quality of leadership in a healthcare system to a large extent defines the quality of services delivered by that health system. The frequency of occurrence of monitoring /regulations related issues within the Nigerian health system as evident from data collected through analysis of policy documents, interviews, observations and questionnaires gives cause for concern.

From an uncoordinated medicines supply chain to lack of price regulation, inequities in distribution of healthcare facilities, personnel and medicines, lack of synergy between the three tiers of government and between the public and private sector, to adherence to standard treatment guidelines and rational prescribing and use of medicines. These issues are all indicative of poor governance and weak coordination between health system leadership and operations. A worrisome observation is the fact that despite periodic changes in health sector leadership, the issues plaguing the health system remains constant. This trend has continued over the years with little variations in terms of policy directions. And, no explanation could be tendered at this time for this pattern.

It is expected that the institution of the National Health Bill with the resultant introduction of new levels of healthcare regulation and standards such as redefining the roles of each category of bio medical personnel and providing legal frameworks for prosecution in the event of malpractice, would strengthen the health system. But to what extent and for how long? Perhaps, only time will tell.

On the 8th of May, 2015, the World health Organization published a new list of essential medicines which comprised new formulations for health conditions such as hepatitis C, 16 new medicines for all kinds of cancer (particularly, breast cancer and leukaemia), multi-drug resistant tuberculosis-TB etc. The introduction of new treatments and medicines for cancers and rare diseases is meant to increase access to innovative medicines and improve public health generally. However, it comes with a price! Affordability remains an issue and a core concern to policy makers, activists, patients, and every stakeholder in access to essential medicines.



According to the WHO, hepatitis C medicine is expected to cost between one thousand to one thousand five hundred US dollars per treatment. Although there have been efforts at reducing the price of these medicines in developing/underdeveloped countries, there is still no consensus on global pricing which raises the issues of global health inequities and perhaps, brings to the fore other socio economic factors that influence access to essential medicines in developing countries.

When compared to a middle income country like South Africa, income inequality in Nigeria appears slightly lower. However, an analysis of purchasing power parity (PPP evaluations here was calculated based on ability to purchase medical goods and services in public health facilities) indicates that on average, a low income household in rural South Africa is more likely to have access to hepatitis C and multi drug resistant TB medicines than those in rural

Nigeria. While 95% of Nigerians pay out of pocket for medicines, most health related expenses in South Africa are covered by insurance and state-run free health scheme for a number of disease conditions. In addition, healthcare in South Africa is equally subsidised by the government and well regulated. Consequently, South Africans get to enjoy access to quality and efficient medicines /health services in general.

On the other hand, the high cost of medicines in Nigeria which is a direct result of governance deficit/poor regulation currently hinders access to life saving medicines and this in turn has a ripple effect- leading to irrational use of medicines which further leads to overdose or ingestion of cheap and substandard medicines that could ultimately lead to preventable deaths. How does one explain health inequalities among two developing countries? Beyond race, gender, class, and other social structures/factors that hinder access to health services, what is that unknown factor that distinguishes a functional health system from an inefficient one? The answer is 'efficient health system governance which is evident in practical regulations' which is one thing the Nigerian health system presently needs.

Data have shown that a bottleneck in medicines distribution reduces access to quality and affordable medicines to patients and can lead to preventable deaths. Furthermore, the absence of an effective medicine supply/delivery monitoring unit to supervise supply and deliveries to primary facilities worsens the matter. Above and beyond, where medicines are available (typically in private medicine stores), most women, unemployed people, the aged and socio-economically disadvantaged population, particularly, those in non-urban areas are unable to pay for these medicines and this ultimately translates to inability to access medical care even when the medicines/diagnostics are physically accessible.

In order to improve access to medicines by eliminating all forms of geographical availability and affordability challenge, the Nigerian government in collaboration with NAFDAC and the

pharmaceutical industry has to build local capacities for medicine production; reduce the recently introduced 20% tax on pharmaceutical raw materials; impose a uniform price for all brands of commonly used medicines such as antibiotics, anti malarialas, multi vitamins and paediatrics and strengthen NAFDACs capacity for timely regulation of medicine by increasing its physical and human resources.

There is need for the Nigerian healthcare leadership to get more involved in the pharmaceutical sector in order to control and reduce the high prices of medicines. In Philippines for example, the government passed the “RA 9502 ACT” otherwise known as the “2008 Cheaper Medicines ACT”. This act empowered the Philippine President upon endorsement of the Health Secretary, to enforce a maximum retail price –MRP over some or all medicines listed in the country’s National Essential medicines List. Likewise, the Nigerian government can adopt this method to ensure that in the absence of social security and medical cover, Nigerians do not pay high prices for medicines. Secondly, greedy importers, wholesalers and retailers do not maximise high profits at the expense of the poor. When compared to other countries, medicines prices in Nigeria remain the highest in developing countries.

With forty four per cent of the entire global pharmaceutical market shares, the United States of America is currently dominating the medicines market, followed by Japan and other European countries. When it comes to medicines importation into Nigeria, China, India and the European countries dominate. In terms of returns, the collective values of the top twenty pharmaceutical companies total US\$ 378 billion, which represents over sixty per cent of the whole international pharmaceutical market and no Nigerian company is listed alongside the top pharmacy companies. With a growing population which is currently estimated at 160 million, Nigeria has no market share in terms of diagnostics or cosmetics, and only generates an insignificant percentage of revenues from the international pharmaceutical market.



In order to control market forces and monopoly (which are the greatest determinants of commodity prices including pharmaceuticals) the Nigerian government needs to provide incentives for the production of generic alternatives of innovator brands, as well as adopt the same model used by the Philippines government to control market prices and compel every company to sell essential medicines at the same price irrespective of the brand.

## **6.5. Health Financing**

The challenge of low health financing is evident in shortage of medicines and personnel at all levels of care in the study areas. But, a critical analysis of healthcare budgets in chapter four did not indicate any direct correlation between increased healthcare budgets and higher health systems performance as measured by maternal and infant mortality ratios. Perhaps the unknown variable that could explain and account for the lack of correlation between health spending and health system performance could be, 'knowing exactly what percentage of the health budget that goes to the purchase of pharmaceuticals and those allotted for infrastructures'. At the time of this study, a review of the health budget only highlighted the proportion of health budget allocated to overheads and personnel. There was no outline of pharmaceutical budget allocation which calls for more accountability and transparency in the way public funds are being managed.

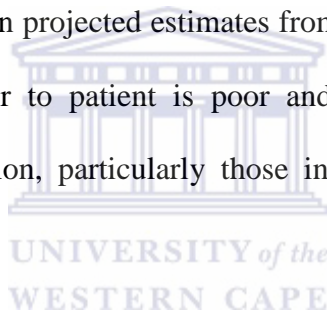
With regards to improving health financing for the management of primary healthcare concerns, the New Health Bill created Basic Health Provisions Funds with an allocation of one percent of government's joined revenue fund. Part of these funds (fifteen percent) is expected to be channelled towards purchase of healthcare equipment, transportation and providing and maintaining healthcare facilities as well. In addition, twenty percent of the

funds will be set aside for provision of primary healthcare facilities and provision of essential vaccines countrywide.

There have been speculations that the policies introduced by the new health bill would die prematurely as did others due to lack of will for implementation and where it is implemented poor enforcement/performance monitoring. However, it is held that with quality leadership and strategic planning, those speculations and past antecedents would be debunked.

### **6.6. Human Resources for Health**

Research findings indicate that presently, shortage of human resources for health impact poorly on access to healthcare in Kaduna, Abuja and Nassarawa. For a combined population of almost fifteen million (based on projected estimates from 2011 by the National Population Commission) the ratio of doctor to patient is poor and lacks the capacity to meet the healthcare needs of the population, particularly those in disadvantaged locations/difficult terrains.



A review of hospital records during data collection indicates that on average, attendance at public healthcare facilities was high particularly at certain times and seasons of the year. In Nassarawa and Kaduna states, patients used the facilities more often during planting/ rainy seasons while in urban areas like AMAC in Abuja and other suburban areas, hospital attendance was usually at its peak due to malaria, typhoid prevalence of cough from June to December. Therefore, there is need to employ more hands and provide incentives that would attract and help in retaining more qualified personnel at all levels of care.

### **6.7. Health Information Systems**

Without a health information system, health care data would be lost and policy makers would have to rely on projections which often lead to waste of resources, inequities and misallocation of scarce resources. Study findings indicate that ninety eight percent of primary healthcare facilities did not have computers neither did they have any form of data storage or management system that would not be lost in the case of a fire outbreak. This lack of a central information management system was also accountable for the disorganized medicines supply system where supply and stock records were hardly stored and occasionally handwritten and likely to get missing. Moreover, the CMS could only be contacted via telephone, indicating a communication between the health centers and the state CMS.

Having functional information management involves the acquisition of health oriented information, analysis and protecting it and subsequently utilising it for the provision of quality health services. It requires an electronic data storage system where health information such as birth registrations, deaths and other data are stored and readily available for planning and resources allocation. It also results in quality service delivery given the fact that automation of patient records, hospital information system and human resources for health information system would help in exchange of information that aid effective delivery of services to the appropriate population.

For instance, most respondents complained about being accommodated under a tent or paying for bed spaces at public facilities due to shortage of bed spaces. If the clinics had an effective information management system, the number of patient/ bed spaces would be properly managed.

During the field work, it was discovered that most of the facilities were unable to find patient cards; some health workers did not have a record of vital information about patients, while most of the health workers could hardly understand the basics of computer use. This study

proposes that utilising computerized record keeping will define and shape the system's responsiveness with regards to disease detection, and in terms of setting priorities and recognising possible solutions that will lead to better health outcomes.

### **Active birth and death registration systems**

In order to come up with viable policies and valid data for proper decision making, there has to be functional and effective death and birth registration systems in Nigeria. If the country does not know how many people were born, how many died and how, when or why they died, the government and researchers cannot have accurate data to work with, which would influence decisions and ultimately result in having a functioning health system.

A lot of deaths in Nigeria go unnoticed given the fact that people do not register deaths and most births in the rural areas are handled same way. The Nigerian government needs to know the number of births and deaths per year as well as the main causes of those deaths – in order to have a well-functioning health system that is responsive and result oriented. There is need to make birth and death registrations mandatory given the fact that every undocumented birth or death denies the government of the opportunity to efficiently plan and execute health programmes based on accurate data.

### **6.7. Service Delivery**

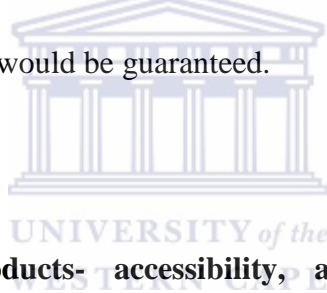
It is no longer news that poor service delivery in Nigeria has been responsible for the high rate of medical tourism in the country. Part of the provisions made by the New Health Bill was the introduction of firm procedures regarding overseas medical referrals.

Study findings suggest widespread dissatisfactions over the quality of primary healthcare services in Kaduna, Abuja and Nassaarawa states. Even though service delivery appears to be better in private facilities, typically, it is at a greater cost when compared to public facilities.

However, frustrations over the following services appear to be same irrespective of sector or level of care: wrong diagnosis, inadequate infrastructure, insufficient consulting time coupled with poor prescribing/dispensing patterns, poor remuneration, lack of incentives, and shortage of pharmaceuticals/medical supplies.

Part of the factors that contribute to poor services delivery in the health sector as revealed by findings from this study include rivalry and disharmony among healthcare practitioners, strike actions –often a direct result of poor conditions of service and remunerations, amongst others.

However, if there is cohesion, synergy and harmony between all sectors, levels of care, categories of healthcare professionals and the three tiers of government, access to quality and effective health services delivery would be guaranteed.



#### **6.7.1. Essential medical products- accessibility, affordability acceptability and availability.**

This study has defined the constraining factors to ATM thus: poor physical access, Insufficient demand for certain medicines resulting in high markups, wrong selection, insufficient and disorganized supply chains, high pricing/poor financing and poor access to health information.

During the interviews, most health workers were questioned about the low patronage of patients at their facility and they stated that patients stopped patronizing their facility due to scarcity of essential medicines such as antibiotics, snake bite serums, medications for common colds and respiratory tract infections- lozenges and malaria medications. For instance, in Nassarawa state where the revolving drug fund is currently being implemented to

increase access to medicines fifty percent of private facilities that are beneficiaries of the funding support claimed that funding was insufficient and unable to meet the goals of the initiative.

Study findings also revealed that the ratio of women in the urban areas who had access to contraceptives was quite high compared to those in rural areas. In as much as illiteracy was identified as a constraining factor in access to contraceptives in rural areas, shortage of medical supplies/consumables also played a greater role. This statistics suggests that most vulnerable groups do not have access to medicines in Kaduna and Nassarawa. Due to the availability and proximity of access to public primary healthcare facilities across the FCT and satellite towns, most women had access to family planning kits and attended ante natal in suburban areas. However, those in urban areas were constrained by the poor quality of services /waiting times in public facilities therefore sought care in private facilities.

The study concluded thus that: due to the poor availability of paediatric medicines in public facilities, the cost of paying for medical consumables for reproductive /maternal health, the high cost of out of pocket payment for medicines by poor households in private facilities as a result of shortage and stock-outs at public facilities in Abuja, Kaduna and Nassarawa, most vulnerable groups –women, children, poor people, rural populations and the elderly do not have access to affordable essential medicines in the appropriate form/amount in primary healthcare facilities. Urban dwellers in Abuja and Nassarawa are at a better advantage and more likely to have access to appropriate medicines in primary healthcare facilities than the indigenous populations.

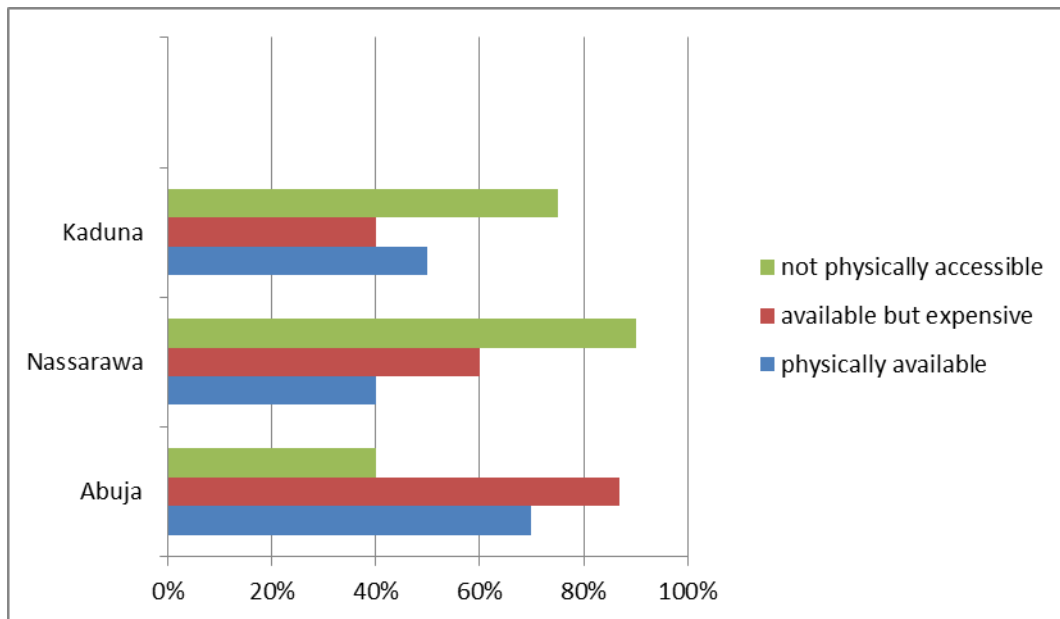
Furthermore, great disparity in costs of essential medicines was witnessed in the study locations. And, the explanation for this could be the lax / sector-disaggregated medicine pricing policy where prices were fixed in the public sector but left to market forces (demand

and supply) in the private sector. Poor regulations and monitoring by the government have been responsible for this pattern as revealed by data. For instance, study findings revealed that the revolving drug funds and roll back malaria program in Nassarawa are not being closely monitored and it is only a matter of time before they fade away out.

Therefore, there is need for the government to increase medicines supply to the public sector and broaden the range of medicines selection in primary healthcare facilities due to the emergence of new diseases and trends of health needs. Alternatively, the government could also get more involved in the private sector and control medicines prices as such efforts have proven quite successful in Dubai and Philippines (pls refer to chapter 4).

Other steps that could be taken to improve the availability of medicines in the public sector are the introduction of a well-organized medicines logistics information system and strict price monitoring platform. Introducing an information management system would help in capturing and keeping records of medicines stocks at the state and local government level in order to monitor product demands and stock out in all facilities across the country. These steps would help in ascertaining states with the highest demand for certain medicines and the stocks availability at the CMS.

Medicines availability in public health facilities in Abuja, Kaduna and Nassarawa states:



Rather than focus on pooling up medicines at the central medicines store, there is need to define new roles and responsibilities; decentralise efforts towards supply and distribution to ensure that medicines reach those who need them at the right time, in the right quality and at an affordable rate. The government could consider introducing a performance monitoring committee for the central medicines store. This committee would be charged with the responsibility of ensuring that all backlogs and bottlenecks that clog the supply chain are done away with and medicines deliveries arrive in time at primary healthcare facilities.

There is need for the government in Nigeria to get more involved in the pharmaceutical sector in order to control and reduce the high prices of medicines. In Philippines for example, the government passed the “RA 9502 ACT” otherwise known as the “2008 Cheaper Medicines ACT”. This act empowered the Philippine President upon endorsement of the Health Secretary, to enforce a maximum retail price –MRP over some or all medicines listed in the country’s National Essential medicines List . Likewise, the Nigerian government can adopt this method to ensure that in the absence of social security and medical cover, Nigerians do not pay high prices for medicines. Secondly, greedy importers, wholesalers and



retailers do not maximise high profits at the expense of the poor. When compared to other countries, medicines prices in Nigeria remain the highest in developing countries

## **6.8 Conclusion and Suggestions for further research**

### **Every Stakeholder should take responsibility**

According to Amitava Banerjee, the question of where the obligation for improving access to essential medicines lies remains a crucial one. While this study has revealed deficits in the Nigerian essential medicines scheme and urged the Nigerian government to enact policies that would improve access to medicines. There are other stakeholders that should take responsibility if sustainable and lifesaving outcomes are expected. In the first place, the government cannot take decisions unilaterally. Decisions made by governments with regards to improving affordability, access and availability of essential medicines as seen by the UAE example, are usually done in collaboration with pharmaceutical companies( local and international). Therefore, the Nigerian pharmaceutical sector has to be hands on and work closely with the government to implement medicines policies and strategies. Secondly, the society at large – this includes individuals who are sick and those without diseases. It is a known fact that the government makes medicines policies in partnership with the pharmaceutical industry. However, seeing that access to quality and affordable essential medicines is the right of every citizen. Accordingly, the citizens have to partner with the government to ensure health equity for all.

### **Conclusion**

This study investigated the Nigerian healthcare system with focus on access to essential medicines and pharmaceuticals. The theoretical framework proposed that access to medicines was linked to and plays a significant role in access to healthcare-Just like the parts that make

up a system are interconnected in systems theory and the health of the overall system is dependent on subsystem functioning. In the same way, the various components of the Nigerian healthcare system and dimensions (supply and demand side) of access to essential medicines are interrelated. Thus, the strength of the healthcare system is contingent on the functioning of ATM and other subsystems considering their vital roles within the system.

There is paucity of literature on access to essential medicines in Nigeria; however, case studies of most developing countries indicated that affordability and physical availability were the most constraining factors of access to essential medicines. According to the 1500 interviewed respondents and 1000 questionnaires administered in this study, affordability, availability and accessibility are the major determinants of access to medicines and healthcare in Nigeria. While patterns and themes varied with regards to possible explanations for other emerging/contribution factors, the core conclusion of data collected through interviews and questionnaires in this study is that: most vulnerable groups –women, children, poor people, rural populations and the elderly do not have access to affordable essential medicines in the appropriate form/amount in primary healthcare facilities. Price monitor/regulation in the private sector and improved funding for medicines procurement in the public sector are needed to achieve timely and equal access to medicines for all citizens regardless of their earning capacity.

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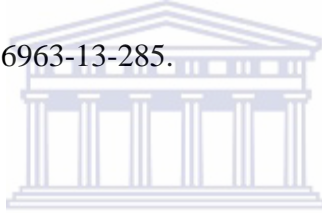
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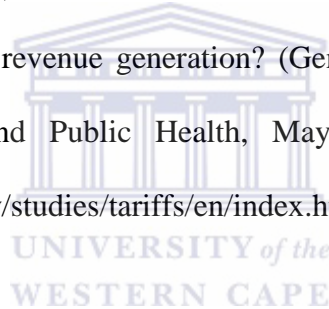
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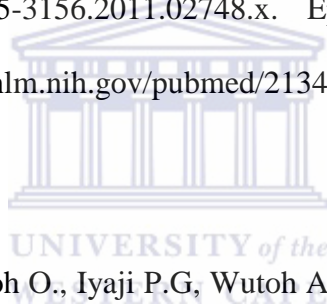
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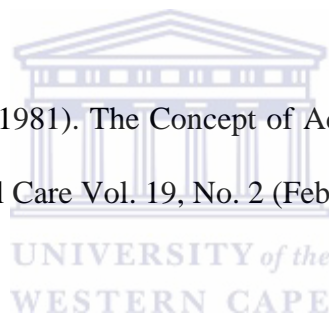
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