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Inaugural Lecture Series 2016

TOPIC:

COMMUNITY HEALTH - KEY TO COMMUNITY WEALTH

By
Professor Adebayo Temitayo Onajole

COMMUNITY HEALTH - KEY TO COMMUNITY WEALTH

An Inaugural Lecture Delivered at the University of Lagos
Main Auditorium on Wednesday, 7th of September, 2016

BY

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PROTOCOL

The Vice-Chancellor, Sir, Professor Rahamon Bello, Deputy Vice-Chancellor (Academic and Research), Deputy Vice-Chancellor (Management Services), The Provost (College of Medicine), The Registrar and other principal officers of the University, Members of Council, Members of Senate, My Teachers and Colleagues, Our dear students, Eminent Public Health Physicians, My Lords Spiritual and Temporal, Members of the Press, Distinguished Ladies and Gentlemen.

It is a great pleasure and a wonderful privilege for me to be delivering the 15th Inaugural Lecture of the year 2016. I had my initial inaugural lecture topic ready as an Associate Professor and was hoping to deliver it as soon as I made my professorial chair, but several events cropped up. I considered this as a maturation of the mind.

The University of First Choice and the Nation's Pride, the University of Lagos appointed me a Professor in the Department of Community Health and Primary Care in 2010. Since the creation of the department, this will be the fifth inaugural lecture. The earlier four lectures were delivered by Professors M.A. Oyediran, A.O. Osibogun, R.O. Abidoye and E.E. Ekanem. I am forever grateful for that recognition and I remain cognisant of the responsibilities that the honour simultaneously confers.

This evening, I hope to give you an insight into some of my modest efforts to justify the confidence the University has reposed in me.

Today, I will endeavour to emphasise the significance of activities that I have been involved in, their implications for the discipline and how some of them have impacted on the health of man and Nigerians in particular.

Mr. Vice Chancellor, Sir, I will commence the lecture by considering some definitions of terms.

DEFINITION OF TERMS

Community Health as a field of public health is a discipline which concerns itself with the study and improvement of the health characteristics of biological communities. It is a study of population groups and their interaction with the environment. It does not imply or connote rural health or village health as perceived in some quarters. Indeed, Community Health deals with services aimed at protecting the health of the community and tend to focus on geographical areas as well as people with shared characteristics. Community health focuses on preventive as well as curative services, though the emphasis is on prevention; it is a known fact that before the manifestation of signs and symptoms of diseases at the individual's level, there would have been a shift in the equilibrium at the cellular and enzymic levels.

Community health may be studied within three broad categories:

The *Primary* preventive level which refers to services that focus on health promotion and health protection at the stage of individual or family such as hand-washing and immunisation. Other activities at this stage in the environment include things such as draining puddles of water near the house, clearing bushes and spraying insecticides to control vectors like mosquitoes.

The *Secondary* preventive level refers to those services that focus on early diagnoses and prompt treatment. Activities at this stage include screening, surveillance and disease notification. Early interventions with specific treatment are known to reduce morbidity and mortality.

The *Tertiary* preventive level refers to those interventions that focus on disability limitation and rehabilitation.

Primary Health Care (PHC)

This refers to "essential health care that is based on scientifically sound and socially acceptable methods and technology, made universally accessible to individuals and families in a community. It is through their full participation and

at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination". "Alma Ata Declaration". In other words, PHC is an approach to health beyond the traditional ways. It focuses on health equity-producing social policy. PHC includes all areas that play a role in health, such as access to health services, interaction with the environment and lifestyle choices. It is to be noted that PHC does not equate to community health. "PHC" is the basic level of health care that includes programmes directed at the promotion of health, early diagnosis of disease or disability and prevention of disease. Hence "PHC" is an approach to achieving or improving the health status of a community or population group. It should not be seen as a specialty.

Primary Care

On the other hand, Primary care is the level of a health services system that provides entry into the system for all new needs and problems. It provides person-focused (not disease-oriented) care over time. It provides care for all but very uncommon or unusual conditions, and it coordinates or integrates care, regardless of where the care is delivered and who provides it. It is the means by which the two main goals of a health services system; optimisation and equity of health status, are approached. This implies that primary care could be delivered at the primary health centres, secondary and tertiary care centres.

Population Health

This has been defined as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group". It is an approach to health that aims to improve the health status of an entire human population. The population health concept represents a change in the focus from the individual-level which is characteristic of most mainstream medicine. It also seeks to complement the classic efforts of public health agencies by addressing a broader range of factors shown to impact the health of different populations. The World Health Organisation's Commission on Social Determinants of Health, (SDOH) reported in 2008, that the

SDOH factors were responsible for the bulk of diseases and injuries and these were the major causes of health inequities in all countries.

The World Health Organisation (WHO) defined health in its broader sense in 1946 as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". From a population health perspective, health has been defined not simply as a state free from disease but as "the capacity of people to adapt to, respond to, or control life's challenges and changes".

Community Development

There are many definitions of community development but the basic concept stated by the United Nations in 1948 defines Community Development as "a process designed to create conditions of economic, health and social progress for the whole community with its active participation and fullest possible reliance upon the community's initiative." Community development goes through potential, coalescing, maturing, stewardship and legacy stages. A healthy community is livable, equitable and sustainable.

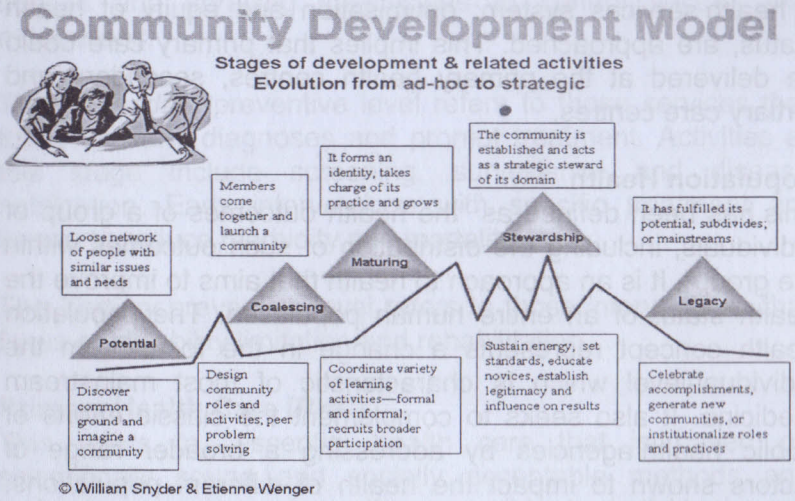

Figure 1: Community Development Model

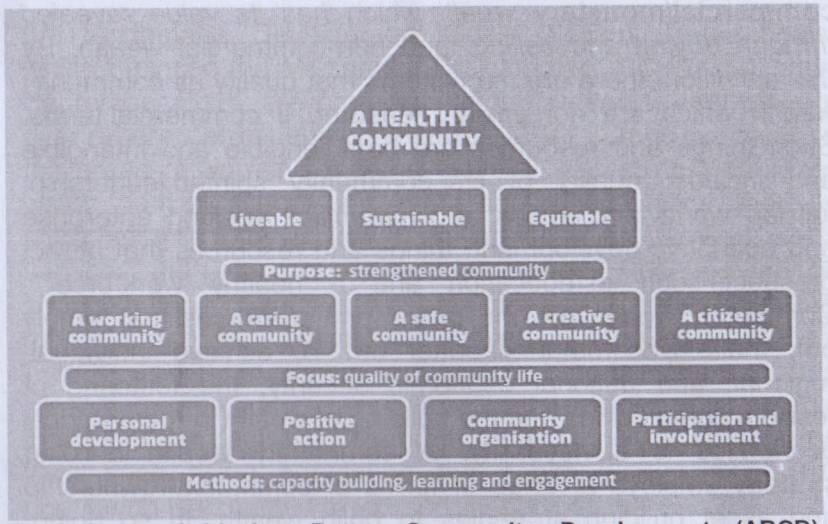

Figure 2: Achieving Better Community Development (ABCD) Framework

Sustainable Development

This is a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations. Sustainable development ties together concern for the carrying capacity of natural systems with the social challenges facing humanity. The Rio declaration states that "Human beings should be and are at the centre of concerns for sustainable development. They are entitled to a healthy life with harmony with nature".

Hasna Vancock defined sustainability as a process which tells of a development of all aspects of human life affecting sustenance. It means resolving the conflict between the various competing goals, and involves the simultaneous pursuit of economic prosperity, environmental quality and social equity which is known as the three dimensions (triple bottom line)

Community Wealth

Community wealth refers to "things and resources of value possessed in common in a **community". It consists of both**

commercial/monetary *wealth* which *has its value revealed through buying and selling,* and non-commercial wealth. By this definition, there are many items that qualify as community wealth which are not easily measured in commercial terms. Such things and resources are both tangible and intangible and include; quality of life, community spirited leadership, fulfilled wants and needs of *communities* seeking enterprise and economic development, things and resources that attract prospects such as education and a healthy workforce . Community wealth are the things and resources that simply put, make a community better off. To achieve individual, regional, and national economic security, the fostering of resilient communities and the building of wealth in today's local economies is a necessity. A community wealth building strategy employs a range of forms of community ownership and asset building strategies to build wealth. In so doing, community wealth building bolsters the ability of communities and individuals to increase accessibility, affordability and acceptability to health and health systems and vice-versa.

Mr. Vice Chancellor Sir, I will now proceed to the topic of the day, which is:

Community Health - Key to Community Wealth

INTRODUCTION

Health systems have played a key role in the dramatic rise in global life expectancy that has occurred since the 20th century, and have continued to contribute enormously to the improvement in the health of most of the world's population. The centrality of health to national development and poverty reduction is self-evident. Improving the health status of communities and increasing life expectancy of its members contributes to long term economic development. The legitimacy of any national health system depends on how best it serves the interest of the poorest and most vulnerable people, for whom improvements in their health status contribute towards the realisation of poverty reduction goals.

The importance of sustainable national growth and development has been encapsulated globally in the concept of

the Sustainable Development Goals (SDGs). These goals, which replaced the Millennium Development Goals (MDGs) in September 2015, are premised on the pledge to end poverty everywhere permanently. While the MDGs drove progress in the areas of women's income, poverty, access to clean safe water, primary school enrollment and child survival; there is still a last mile to be walked to ending hunger, improving health services and getting every child into school. Recent evidence shows that the country is presently not on course to achieving the health-related Sustainable Development Goals (SDGs). (FMOH, 2010). As shown in Figure 3, Nigeria's Population is steeply on the increase. This with the declining economic indices of the country is bound to result in increasing poverty. With such rising population the health worker per 1000 population is expected to worsen. (Figure 4).

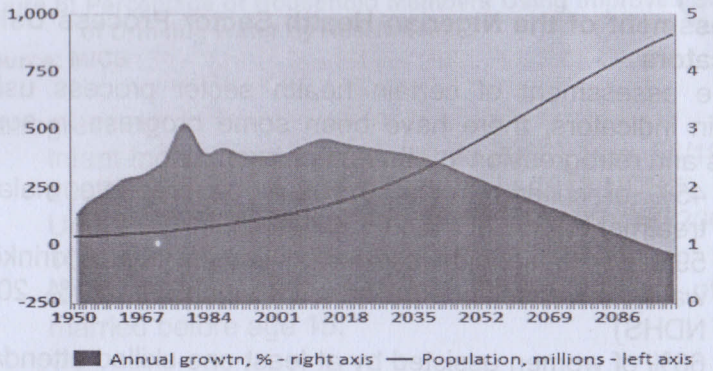

Figure 3: Disparity between Annual Growth and Population Size

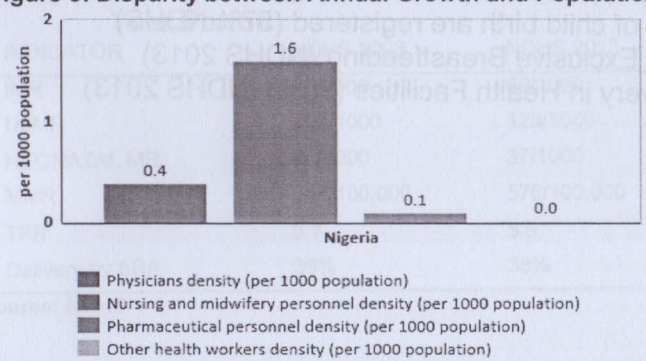

Figure 4: Availability of Human Resources for Health in Nigeria

Compare Nigerian indices with those of regional neighbour and other highly populated countries

	Population (000)[1]	Neonatal Mortality (per 1000 life births)[2]	Infant Mortality (per 1000 life births)[2]	Under 5 Mortality (per 1000 life births)[2]	Life expectancy at Birth (years)[2]
Nigeria	158,423	49 (40)[3]	96 (75)[3]	186 (157)[3]	49
Ghana	24,392	30	51	76	62
Pakistan	173,593	53	72	89	63
India	1,224,614	37	52	69	64

1. UN World Population Prospects, the 2012 Revision
2. WHO Statistics 2010 - 2008 figures.
3. NDHS 2008

Figure 5: Comparison of Health Indices of Various Developing Nations

Assessment of the Nigerian Health Sector Process Using Indicators

In the assessment of certain health sector process using certain indicators, there have been some progress in some areas and retrogression in others. For example:

- 45% of children under 5 receive appropriate malaria treatment (33% NDHS 2013)
- 59% of Households use improved sources of drinking water; increase in rural from 34% to 52% (61% 2013 NDHS)
- 66% of women assisted by at least one skilled attendant (38% NDHS 2013)
- 42% of child birth are registered (57% NDHS)
- 17% Exclusive Breastfeeding (NDHS 2013)
- Delivery in Health Facilities (36%) (NDHS 2013)

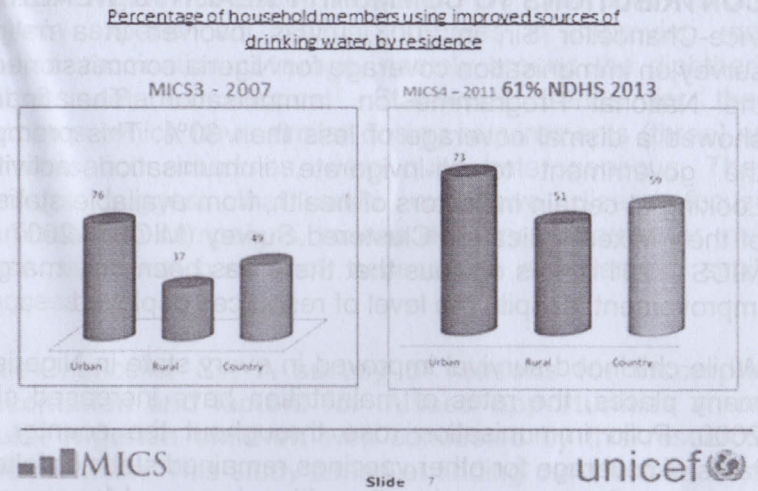

Figure 6: Percentage of Household Members Using Improved Sources of Drinking Water by Residence

Source: MICS

Retrogression

- Infant mortality rate (refer to mid 2006), from 86/1000 in 2007 to 97/1000 in 2011 (**69/1000 in 2013 NDHS**)
- Under 5 mortality rate from 138/1000 in 2007 to 158/1000 in 2011 (**128/1000 in 2013 NDHS**)
- Early Marriage: 5% increase in the number of girls married before age 15.

Table 1: Change in Nigerian Health Indicators over a Five Year Period

INDICATOR	NDHS 2008	NDHS 2013
IMR	75/1000	69/1000
U5MR	157/1000	128/1000
NEONATAL MR	40/1000	37/1000
MMR	545/100,000	576/100,000
TFR	5.7	5.5
Delivery by SBA	39%	38%

Source: NDHS

CONTRIBUTIONS TO COMMUNITY HEALTH & WEALTH

Vice-Chancellor Sir, in 2003, I was involved in a national survey on immunisation coverage for Nigeria commissioned by the National Programme on Immunisation. The findings showed a dismal coverage of less than 30%. This prompted the government to re-invigorate immunisation activities. Looking at certain indicators of health, from available statistics of the (Mixed Indicators Clustered Survey (MICS – 2007 and MICS – 2011), it is obvious that there has been only marginal improvement, despite the level of resources deployed.

While childhood survival improved in every state in Nigeria, in many places, the rates of malnutrition have increased since 2000. Polio immunisation rose throughout the country, yet rates of coverage for other vaccines remained static or faltered over time. Stark geographic disparities deepened for a number of interventions, underscoring many of the challenges facing Nigeria's health system. Indeed, Nigeria recorded marked improvement for a subset of health interventions, particularly for polio immunisation rates and ownership of insecticide-treated nets (ITNs). Nonetheless, absolute levels of ITN coverage remained fairly low by 2013, indicating that heightened efforts to scale up intervention access and use may be needed.

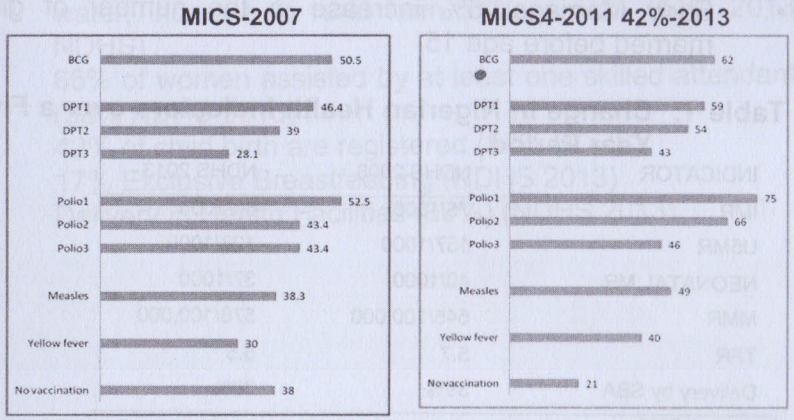

Figure 7: Line Graphs Comparing Nigerian Immunisation Coverage for 2007 and 2011
Source: MICS 3

Amid rising immunisation rates for the oral polio vaccine, Nigeria experienced minimal progress in improving more routine vaccination coverage, namely around the diphtheria-pertussis-tetanus vaccine.[1] State-level trends for these vaccines, which have similar dosing requirements (three) and immunisation schedules, were quite heterogeneous. These findings suggest that amid expansive disease-focused immunisation campaigns, routine delivery platforms for multi-dose vaccines have not necessarily experienced similar success.

Vice-Chancellor Sir, **A survey of reasons for incomplete vaccination and factors for missed opportunities among Rural Nigerian children** was conducted by this researcher and his team. This study aimed at finding out the reasons for partial immunisation and factors responsible for missed opportunities in children less than one year of age. Mothers of children within one year of age were the study subjects using a cross sectional study design. Parents' objection, disagreement or concerns about immunisation safety, long distance walking and long waiting time at the health facility are the most common reasons for partial immunisation. Missed opportunities for immunisation and partial immunisation need to be avoided in order to enhance the fully immunised percentage for those children who reach the health facility especially in rural areas where the immunisation coverage is below the expected national average.

[1] (Institute for Health Metrics and evaluation, University of Washington, 2016)

Table 2: Factors Associated with Missed Opportunity for Vaccination in Children Less than 1 Year of Age

Bivariate Analysis	Binary Logistic	Regression Analysis			
Factors	Percentage	OR(95% CI)	p-value	OR* (95% CI)	p-value
Maternal Health Status					
Sick	168 (24.5)	3.18 (2.32-2.67)	0.025	2.43(1.82-1.90)	0.012
Healthy	517 (75.)	1		1	
Social Engagements					
Yes	71 (10.4)	2.73 (1.45-1.83)	0.031	1.78 (1.13-1.52)	0.003
No	614 (89.6)	1		1	
Travelling					
Yes	110 (14.6)	3.12 (2.56-2.89)	0.002	2.66 (1.75-1.87)	0.002
No	575 (85.4)	1		1	
Distance to the Health Facility					
Long (far)	79 (11.5)	1.75 (0.78-0.98)	0.024	0.93 (0.89-1.25)	0.001
Short (near)	606	1		1	
Complications from Previous Injection					
Yes	130 (19)	3.33 (2.55-2.72)	0.031	2.14 (1.76-1.85)	0.002
No	555 (81)	1		1	
Place of Delivery					
Home	548 (80)	1.88 (2.77-2.94)	0.022	2.31 (1.79-1.83)	0.004
Health facility	137 (20)	1		1	
Information on NPI					
Yes	141 (21)	1.63 (2.42-2.69)	0.031	1.78 (2.65-2.88)	0.001
No	544 (79)	1		1	

OR –Odds ratio, OR*- Adjusted Odds ratio, %- percentage, *1= reference variable, CI- Confidence interval, NPI- National Program on Immunization. Only significantly associated variables ($p<0.05$) are shown in the table.

Under-5 mortality fell in every state from 2000 to 2013, and the state-level differences in childhood survival narrowed over time. At the same time, several states in northern Nigeria experienced under-5 mortality rates that rivaled the highest worldwide, exceeding 150 deaths per 1,000 live births in 2013. These are the same states where rates of childhood malnutrition, as measured by the percentage of children who are underweight, have actually increased since 2000.

Nigeria has increased access to and use of malaria interventions since 2009 – an important gain given that 30% of the world's malaria cases and deaths occurred within the country's borders in 2013. Nonetheless, the rates at which high-risk populations – children with suspected malaria and pregnant women – received proper care remained quite low. Indeed by 2013, no state recorded coverage of artemisinin-based combination therapies among children under five exceeding 20%. Studies by this researcher in 2008 to Assess the prescription pattern of Artemisinin Combination Therapies (ACTs) in uncomplicated malaria and the knowledge, attitude and practice of physicians as regards use of ACTs in the outpatient clinics of public secondary health facilities in Lagos State showed that despite the national policy change from chloroquine to ACTs as the first line antimalarial, their use in the public secondary health facilities in Lagos State did not reflect this policy change and it appeared that chloroquine remained the choice antimalarial drug.

Table 3 Mean Drugs, Percentage of ACT, CQ, SP, Antibiotics and of Drugs Prescribed Generic and in Essential Drug List in Rural Public Secondary Health Facilities

Health Facility	Mean Drugs	Percentage ACT	Percentage CQ	Percentage SP	Percentage Antibiotics	Percentage Generic	Percentage EDL
Agbowa	4.5±0.1	9.2	77.6	28.6	26.5	37.7	98.0
Ajeromi	4.6±0.1	4.5	42.3	9.6	20.5	28.8	84.9
Badagry	4.5±4.5	3.9	76.5	26.0	16.7	37.4	92.1
Epe	3.8±0.1	2.8	73.6	22.2	15.3	33.6	91.6
Ikorodu	4.3±0.1	3.5	80.2	9.4	3.5	43.2	85.8
Mean	4.3±0.1	*4.8±1.1	*70.0±7.0	19.2±4.0	16.5±3.8	36.1±2.4	90.5±2.4

*p<0.05

My research team also conducted studies on the **Home Management of Malaria: Knowledge, Attitude and Practice Survey on the Use of Anti-malarials among Carers of Young Children in a Semi-rural Community in Southwest Nigeria.** The purpose of this study was to investigate the knowledge and treatment seeking habit of mothers/caregivers of under-five children with malaria in Ado-Odo Local Government Area of Ogun State, South Western Nigeria. The study concluded that rapid and effective treatment with special emphasis on correct dosing regimen is a key message for intervention. Efforts must focus on ensuring that anti-malaria drugs are available and easily accessible to caregivers. Other intervention strategies aimed at reducing the frequency of malaria attacks should be explored.

Another study on the **Knowledge of Malaria amongst Caregivers of Young Children in Rural and Urban Communities in Southwest Nigeria** concluded that the caregivers of children in the communities studied have poor knowledge of malaria. Those in urban areas have better health seeking behaviour than those in rural areas and that there was the need for urgent interventions to promote appropriate treatments of malaria in rural areas. (Oreagba A.I, 2003), (Abdulraheem I.S., 2003)

Table 4: Caregiver's Knowledge of Treatment of Malaria

	Rural (%)	Urban (%)
Knowledge of correct cause of malaria	49.0	78.5
Knowledge of correct adult dose of anti-malarial	37.5	43.5
Knowledge of correct paediatric dose of anti-malarial	19.5	38.0
Knowledge of correct treatment duration of malaria	37.0	52.5

To investigate methods of improving outcomes my team conducted a **Face-to-face educational strategy on awareness and treatment knowledge of malaria amongst caregivers of young children in a rural community in Southwest Nigeria.** The purpose of this study was to improve the awareness and treatment knowledge of malaria among carers of young children using a face-to-face intervention approach in a rural community in Ado-odo/Ota Local Government Area. There was a significant improvement in the treatment knowledge and awareness of malaria amongst carers three months after the intervention. The study highlights the importance of face-to-face educational intervention as an effective strategy for improving malaria case management in the community.

A similar study was conducted in Osun State; **Health Education and Caregivers Management of Malaria among Under-fives in Ede North LGA, Osun State of Nigeria**. The study determined the effect of comprehensive health education programme on the home management of malaria in under-fives by caregivers in Ede North Local Government Area, Osun State, Nigeria. After the health education intervention, the experimental group became more knowledgeable about the signs and symptoms of malaria and its prevention. They also had a better attitude towards the management of malaria. The study recommended the need for health care providers to utilise all possible interaction between caregivers and health facilities as an avenue for increasing level of awareness of the treatment of malaria.

Table 5: Respondents Knowledge of Causes of Malaria

Direct Causes of Malaria	Experimental Group			Control Group		
	Pre intervention n=120	Post intervention n=114	p-value	Pre intervention n=120	Post intervention n=112	p-value
Mosquito bites	75.8%	100%	0.00	73.3%	72.3%	0.86
Excessive sunlight	13.4%	0.0%	0.00	8.4%	10.7%	0.54
Dirty environment	7.5%	0.0%	0.00	13.3%	9.8%	0.40
Growth of milk teeth	3.3%	0.0%	0.04	5.0%	7.2%	0.49
Total	100%	100%		100%	100%	

Coverage of maternal health interventions reflected the country's history of north-south disparities, which are largely related to differences in wealth, educational attainment, and urban development. These results indicate that barriers to accessing and using health services, particularly those related to maternal health, remain in Nigeria's more remote, impoverished regions. Indeed, most states have experienced minimal progress – or even declines – in coverage for more routine maternal health services such as antenatal care and skilled birth attendance.

ORGANISATION OF NIGERIAN HEALTH SECTOR

The national health care system is built on the basis of the three-tier responsibilities of the Federal, State and Local Governments. Schedules of responsibilities assigned to the Federal, State and Local Governments respectively are prepared in consultation with all tiers of government and approved by the Federal Ministry of Health. There are three principal health system inputs; physical capital, consumables and human resources management (HRM).

To study the human resources management component of the system input, my team carried out a study on the **National Health Insurance Scheme (NHIS) to assess the knowledge and opinions of Nigerian dentists' in Lagos.** The study found that majority of dentists involved in this study had some knowledge of the NHIS and were generally positively disposed towards the scheme and viewed it as a good idea. A good number of the respondents indicated a desire for dentistry to operate at the primary care level of the NHIS. (Adeniyi A.A., 2010)

Table 6: No of Respondents with Correct Answers to the Questions Testing Knowledge of the Operations of the NHIS

	Question	Correct Frequency (%)		Incorrect Frequency (%)		Total Frequency (%)	
1	The NHIS is designed to ensure health services are available to the populace	204	(4.4)	12	(5.6)	216	(100.0)
2	Its objective is to increase the costs of health services	195	(90.3)	21	(9.7)	216	(100.0)
3	Its objective is to reduce the earnings of health workers	181	(83.8)	35	(16.2)	216	(100.0)
4	Its objective is to promote improvement in the delivery of health services	186	(86.1)	30	(13.9)	216	(100.0)
5	How are dentists enumerated on the scheme?	53	(24.5)	163	(75.5)	216	(100.0)
6	When was the scheme launched?	116	(53.7)	100	(46.3)	216	(100.0)
	Identify which of the following programmes are under the NHIS scheme						
7	Permanently disabled persons social health insurance	55	(25.5)	161	(74.5)	216	(100.0)
8	Prison inmates social health insurance	48	(22.2)	168	(77.8)	216	(100.0)
9	Formal sector social health insurance	121	(56.0)	95	(44.0)	216	(100.0)

Another study sought to find out **the awareness of health providers about the National Health Insurance Scheme (NHIS) and to determine their acceptance and commitment to the scheme**. Almost all of the providers were aware of the NHIS but only 33.1% knew at least four objectives of the scheme. Given the level of knowledge by respondents about the NHIS and the dissatisfaction expressed by many of the providers who have contracts with HMOs, it is recommended that seminars/workshops should be organised for health providers to enlighten them about the NHIS and that they should be involved in negotiation to fix the value of capitation.

Table 7: Suggestions for Improving Health Care Financing among Health Care Providers

Solution	Frequency (n=379)	Percentage
Government should provide free health services	70	18.5
Government should bank role professionals so that cost of their services can be regulated	168	44.3
Government should spend more money to fund their facilities	36	9.5
A more conducive environment should be provided for health care	218	57.5
Government should fund health research and play only regulatory role in health care services	78	20.6
Government should enforce health policies	190	50.1
Others	54	14.2

In the areas of maternal and child health, a study on the Perceived Cost in the Utilisation of Antenatal Care Services by Pregnant Women in Abeokuta South Local Government Area of Ogun State was conducted. The cross-sectional study was carried out to determine the economic accessibility in the utilisation of antenatal care and delivery services by women of childbearing age. Majority of respondents perceived cost of seeking ANC services in private hospital as reasonable though respondents with no formal education felt it was expensive. An adequate reproductive health education campaign is advocated to improve utilisation of antenatal care services.

Table 8: Respondents Level of Education in Relation to Perceived Cost of ANC Services among Different Providers

Level of Education	Costly n (%)	Reasonable n (%)	Cheap n (%0	Total n (%)
Perceived Cost (Government Facilities)				
No formal education	1 (5.9)	3 (17.6)	13 (76.5)	17 (100.0)
Primary education	14 (12.5)	42 (37.5)	56 (60.9)	112 (100.0)
Secondary education	15 (14.3)	36 (34.3)	54 (51.4)	105 (100.0)
Above secondary education	16 (19.2)	24 (28.9)	43 (51.8)	83 (100.0)
Total	46 (14.5)	105 (33.1)	166 (52.4)	317 (100.0)
Perceived Cost (Private Orthodox Facilities)				
No formal education	12 (75)	1 (6.3)	3 (18.7)	16 (100.0)
Primary education	24 (29.3)	45 (54.9)	13(15.8)	82 (100.0)
Secondary education	18 (23.1)	49 (62.8)	11 (14.1)	78 (100.0)
Above secondary education	11 (17.2)	37 (57.8)	16 (25)	64 (100.0)
Total	65 (27.1)	132 (55)	43 (17.9)	240 (100.0)
Perceived Cost (Traditional/Herbal Facilities)				
No formal education	1 (8.3)	1 (8.3)	10 (83.3)	12 (100.0)
Primary education	22 (28.6)	3 (3.9)	52 (67.5)	77 (100.0)
Secondary education	16 (37.2)	3 (7.0)	24 (55.8)	43 (100.0)
Above secondary education	8 (24.2)	3 (9.0)	22 (66.7)	33 (100.0)
Total	47 (28.5)	10 (6.1)	108 (65.4)	165 (100.0)

THE ROLE OF HEALTH WORKFORCE

The health workforce is the backbone of each health system and pivotal to service provision in Community Health. It has been proved beyond reasonable doubt that the density of the health workforce is directly correlated with positive health outcomes. In other words, health workers save lives and improve health. (Thoresen S.H.Y, 2010)

About 59 million people make up the health workforce of paid full-time health workers world-wide. The Americas (mainly USA and Canada) are home to 14% of the world's population, bear only 10% of the world's disease burden, have 37% of the global health workforce and spend about 50% of the world's financial resources for health. Conversely, Sub-Saharan Africa, with about 11% of the world's population bears over 24% of the global disease burden, is home to only 3% of the global health workforce. In most developing countries, the health workforce is concentrated in the major towns and cities, while rural areas can only boast of about 23% and 38% of the country's doctors and nurses respectively. The WHO estimates that 57 countries worldwide have a critical shortage

of health workers, equivalent to a global deficit of 7.2 million professional health workers in 2012, and this is set to rise to 12.9 million over the next decades. Thirty six of these countries are in Sub-Saharan Africa. Amidst the shortages, the serious issue of global mal-distribution of health workers reflects inequities that are even more marked than inequities in health status. To achieve the Sustainable Development Goals (SDGs), the minimum level of health workforce density is estimated at 2.5 health workers per 1,000 people. Of 46 countries in the Sub-Saharan Africa region, only 6 have workforce density over 2.5 per 1,000 people. Indeed, Africa's health workforce density averages 0.8 workers per 1000 population, (Labiran A., 2008). This is significantly lower compared to the other regions and to the world median density of 5 per 1,000 population. Effective public health systems depend on a trained and motivated workforce to carry out the services needed to achieve health goals.

Worldwide, fewer than 50% of women deliver with medical care and skilled attendance. Despite progress in a few countries in Africa, Maternal, Newborn and Child Health (MNCH) coverage has stagnated and, in some countries, has declined. Human resource shortages and poor distribution and retention of trained providers, is a key challenge to achieving the SDGs.

Within many health care systems worldwide, increased attention is being focused on human resource management. This is because building the skills for managing and delivering health is essential for every country's development. Nigerian "Human Resources for Health" includes a wide range of health care workers in both the public and private sectors, such as public facilities managed by Federal, State, and Local Governments, Private for-Profit Providers, NGOs, community-based and faith-based organisations, religious and traditional care givers.

THE NIGERIAN HUMAN RESOURCES FOR HEALTH (HRH) SITUATION ANALYSIS

Nigeria has one of the largest stocks of human resources for health in Africa comparable only to Egypt and South Africa. In 2008, there were about 55,376 doctors and 224,943 nurses & midwives registered in the country, which translates into about 39 doctors and 160 nurses & midwives per 100,000 population as compared to the Sub-Sahara African average of 15 doctors and 72 nurses per 100,000 population (WHO 2010). Comparing the data of 2008 with 2012, there has been very little change in the total number of health workers/1000 population. Doctors and dentists included 2,968 and 215 expatriates respectively. This suggests that there are considerable numbers of expatriates providing medical care support in the country. There were 306 health training institutions available in Nigeria as at 2010 and the number is still growing. These institutions are well distributed across the country. The high burden of disease and epidemics has put a terrible strain on the health workforce, given that the production of health workers has not kept pace with the need. Considering the pressure on the numbers of human resources for health available to deliver service, there is a need to ensure that healthcare workers are not exposed to preventable dangers. **A survey of practical and affordable preventable measures for health care workers against nosocomial transmission of tuberculosis in resource limited settings** considered the occupational hazard to health care workers posed by the global increase in tuberculosis especially in multi-drug resistant tuberculosis. This study involved library and internet search of literature and focused on health care workers because of the high risk of contracting tuberculosis due to the nature of their work. It concluded that political support and commitment should be given to research to examine the feasibility and cost effectiveness of measures such as voluntary TB and HIV testing of health care workers and preventive therapy for workers in high risk settings. All health facilities should have appropriate resources to operate control measures for nosocomial TB.

An embargo on employment has worsened the situation of human resources for health in Nigeria at all levels. Overall, the combined effects of accelerated retrenchment, voluntary retirement and departure, internal and external migration for all reasons and sickness and death from communicable and non-communicable diseases, place our health system at the epi-centre of the Nigeria's health workforce crisis. The shortage is even more acute in the rural areas. WHO (2006) estimated that there are 57 countries facing critical shortage of health workers; and over half of them are in Africa. (Ali F., 2012)

HRH Challenges in Nigeria

The geographical distribution of health workers in Nigeria is very uneven, with fewer staff per person in less developed areas. There is concentration of health workers in urban areas, tertiary health care, curative and the southern parts of the country. The uneven distribution of health workers is greater in some category of workers; physician specialists being the most unevenly distributed. Middle level Community health workers are well distributed in the rural areas, though the two way referral system which could have enhanced worker efficiency is missing.

Government is the main financier of health training all over the country. In recent times, newly graduated doctors, pharmacists, physiotherapists, and medical laboratory scientists do not readily get accredited facilities for their internship. Some have to wait for as long as two years before they can get placement. In the heat of the frustration some are noted to have abandoned their professions altogether and looked for something else to do.

Table 9: Regional Distribution of Health Workers in Nigeria (2007)

Health Worker Categories	Total number	North central (%)	North east (%)	North west (%)	South east (%)	South south (%)	South west (%)
Doctors	52,408	9.73	4.1	8.4	19.6	14.4	43.9
Nurses	128,918	16.4	11.7	13.5	15.3	27.8	15.4
Radiographers	840	14.3	3.7	6.0	15.0	18.3	43.0
Pharmacists	13,199	19.9	3.8	7.8	11.7	12.4	44.0
Physiotherapists	1,473	10.8	2.7	8.3	8.6	7.9	62.0
Med Lab scientists	12,703	6.8	1.7	3.6	35.3	23.9	29.0
Environmental and public health workers	4,280	9.4	11.3	18.9	12.4	15.7	32.1
Health records officers	1,187	13.3	4.9	11.6	14.6	30.0	26.0
Dental technologists	505	14.1	5.9	5.9	13.0	16.6	44.5
Dental therapists	1,102	13.2	10.3	21.9	10.2	13.0	31.5
Pharmacy technicians	5,483	6.2	9.1	18.0	8.6	11.8	46.0

The Effects of HRH Challenges

The resultant effect on the health system of inadequate numbers and distribution of trained human resources includes poor availability, distribution and utilisation of health services, and a dysfunctional health management system; leading to de-motivation and high attrition among health professionals. These are among the several outcomes chiefly responsible for the limited attainment of the health sector goals and efficiency of the health system. My research team and I have conducted various studies to assess the utilisation and quality of health services in Nigeria which are linked to the human resource challenges. A study conducted on **Adolescent Utilisation of Health Services** advocated the need for more varieties of adolescent friendly services that meet the needs of adolescents to be included. (Onajole A.T. D. D., 2010)

Table 10: Logistic Regression Model of Client Facility-use Status of Respondents

Variable	Coefficient	Standard error	Odd ratio	95% CI Lower	– Upper	P value
Religion						
Islam/Christianity	0.71	0.18	2.04	1.43	2.92	0.00
Ethnicity						
Igbo/Others	0.17	0.22	1.18	0.78	1.81	0.44
Yoruba/Others	-0.05	0.17	0.95	0.68	1.34	0.78
Type of Family						
Polygamous/Monogamous	-0.11	0.18	0.90	0.64	1.27	0.55
Single parent/Monogamous	0.46	0.34	1.58	0.82	3.05	0.18
Respondent lives with						
Single parent/Both parents	-0.06	0.23	0.94	0.60	1.46	0.78
Extended family /Both parents	-0.10	0.20	0.90	0.61	1.34	0.61
Characteristics of Respondents						
Never had HIV test/Ever had HIV test	-0.82	0.53	0.44	0.16	1.23	0.12
Never had sex/Ever had sex	1.62	1.32	5.07	0.38	67.22	0.22
Not sexually active/Sexually active	-0.92	0.21	0.40	0.27	0.60	0.00
Preferred Contraceptive						
Condom alone/Condom, pill	0.06	0.26	1.06	0.64	1.76	0.83
Abstinence/Condom, pill	-0.52	0.27	0.60	0.35	1.00	0.05

Another study on the comparison of client perception of the quality of child welfare services at the Lagos University Teaching hospital and a Primary Health Centre in Mushin LGA, Lagos State was conducted. The objective of the study was to compare client perception of the quality of child welfare services at Lagos University teaching Hospital (LUTH) and Palm Avenue PHC in Mushin LGA. Majority of the clients were satisfied with services at the health centres, except the long waiting time. This prompted a recommendation for an analysis of the client flow and a plan of action to reduce time spent at these clinics to further improve client satisfaction with health services.

Table 11: Respondents Recommendations to Improve Quality of Services in LUTH and the PHC

Recommendations	LUTH n=100	Palm Avenue n=99	Total
Improve structural facilities and organisation	37 (37)	53 (53.5)	90 (45.2)
Increase staff strength	22 (22)	21 (21.2)	43 (21.6)
Improve attitude of workers	9 (9)	1 (1)	10 (5)

A study on the **Utilisation of Antenatal Care and Delivery Services by Pregnant Women in Abeokuta South Local Government Area of Ogun State** showed a high level of awareness of antenatal care and delivery services. In spite of the awareness about antenatal care, the level of utilisation was low. Factors such as perceived high cost of care, long waiting time in antenatal clinics, length of consultation, lack of essential equipment and drugs and perceived unfriendly attitudes of staff were reported.

Table 12: Respondents Awareness and Utilisation of ANC Services in Pregnancy

Awareness of ANC Services Available	Use one ANC	Use more than one ANC	Total
Has awareness	173 (47.4%)	192 (52.6%)	365 (97.1%)
Not aware	2 (18.2%)	9 (81.8%)	11 (2.9%)
Total	175 (46.5%)	201 (53.5%)	376 (100%)

Health Sector Reform Gaps in HRH

Human Resources for Health are seldom considered in Africa and elsewhere. However, a systemic way of defining, coordinating and growing the Human Resources for Health needed to support health systems development is missing. Limited capacity in low-resource regions hampers quality research, and building human resources for health research capacity is critical for the health system strengthening.

Africa needs data – on research, on research for health, and on human resources for both. Based on these data, Africa must develop a **coordinated strategy** to build Human Resources for Health capacity. The commitment by African ministries of health to spend **2% of health budgets on health research** following the Bamako Declaration should be implemented. Data on how well African governments are faring on this measure are sparse because research for health is often funded out of budgets in ministries other than the Ministry of Health. The *World Health Report 2012* further highlighted the need for coordinated efforts in this regard. (WHO, 2013)

Responsible vertical programming (RVP) – should become the norm. This means restructuring disease-focused research programmes in ways that support national capacity for health research and health research management. Human Resources for Health must be seen as integral to development, and not only as a short-term, crisis-solving tool.

Harmonisation and partnership – There must be greater communication and collaboration among international funders to support the capacity building efforts in health research. Dedicated funding is needed for explicit capacity building initiatives for Human Resources for Health, while health research programmes should have built-in capacity building components, with a focus on developing Human Resources for Health Research and ensuring sustainability.

Diversification of capacity building – Capacity building efforts must focus on knowledge transfer and generation and also on human resources for policy development and advocacy, research management, governance and stewardship.

Monitoring and evaluation – While several initiatives have been undertaken, systematic learning from them has been weak. Establishing indicators to measure the effectiveness of Human Resources for Health capacity building would strengthen the case for investing in such efforts. (Jsselmuiden C.I., 2012)

The Impact of Human Resource Initiatives on Health Sector Reform

When examining global health care systems, it is both useful and important to explore the impact of human resources on health sector reform. While the specific health care reform process varies by country, some trends can be identified. Three of the main trends include efficiency, equity and quality objectives.

Various human resource initiatives have been employed in an attempt to increase efficiency. Outsourcing of services has

been used to convert fixed labour expenditures into variable costs as a means of improving efficiency. Contracting-out, performance contracts and internal contracting are also examples of measures employed.

Many human resource initiatives for health sector reform also include attempts to increase equity or fairness. Strategies aimed at promoting equity in relation to needs require more systematic planning of health services. Some of these strategies include the introduction of financial protection mechanisms, the targeting of specific needs and groups, and re-deployment services. One of the goals of human resource professionals must be to use these and other measures to increase equity.

Human resources in health sector reform also seek to improve the quality of services and patients' satisfaction. Health care quality is generally defined in two ways: technical quality and socio-cultural quality. Technical quality refers to the impact that the health services available can have on the health conditions of a population. Socio-cultural quality measures the degree of acceptability of services and the ability to satisfy client expectations.

Human resource professionals face many obstacles in their attempt to deliver high-quality health care to citizens. Some of these constraints include budgets, lack of congruence between different stakeholders' values, absenteeism rates, high rates of turnover and low morale of health personnel.

Better use of the spectrum of health care providers and better coordination of patient services through interdisciplinary teamwork have been recommended as part of health sector reform. Since all health care is ultimately delivered by people, effective human resources management will play a vital role in the success of health sector reform (Kabene S.M., 2006)

The Need for Health Workforce Development

A good understanding of the interaction between driving forces, workforce needs and health system development is a

crucial precondition for efficient and effective policy making. There are systemic deficiencies in the planning, management, development and administration of the health workforce. There is an acute shortage of health workers in the public sector while there are large numbers of unemployed, trained and skilled health workers in-country. As a result of inadequate data in health human resources, production is not matched with distribution and this is not correlated with utilisation. The presence of health workers with skills not suited for the health needs of the country or communities (skill mix) is also a major problem. For both doctors and nurses, Nigeria, like most African countries has largely focused on clinical training and specialties. There is an internal mal-distribution (unequal and inequitable distribution) of health workers, with most located in urban areas. Due to the down turn of the economy, there is now a reversal of movement of heath workforce from the private sector to the public sector, though the public sector is unable to assimilate the influx. This is as a result of the fact that private health facilities are unable to provide adequate incentives. More so, group medical practice seems to be at its infancy for so many reasons. International migration of skilled health workforce (brain drain) from the developing to developed countries is also on the increase. This is a drain on the Nigerian health resource as health and medical education has been highly subsidised in the country. Dismal working conditions for health workers; unsafe workplaces, inadequate compensation and incentives (financial and otherwise), and insufficient or no career development opportunities have also been reported as further disincentives to working in the health sector. This has resulted in several preventable crises in the health sector and has also hampered programme development.

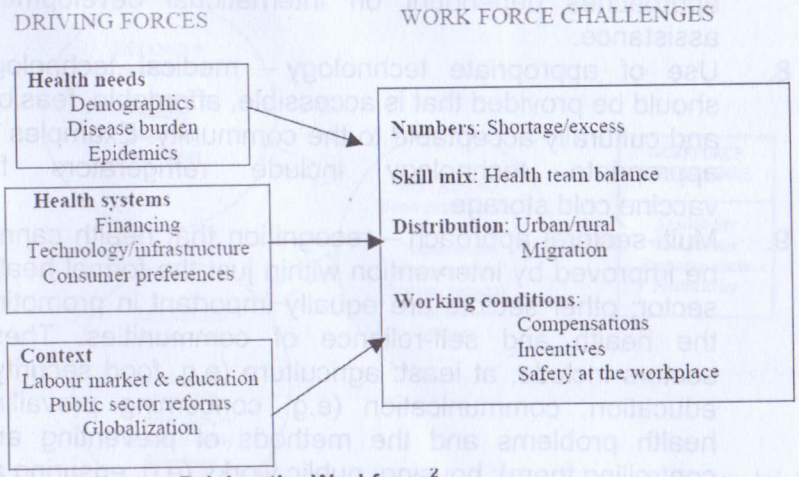

Figure 8: Forces Driving the Workforce[2]

The ultimate goal of the health system is the attainment of better health services for all. It is for this reason that the World Health Organisation (WHO), has identified key elements to achieving this goal which are:

1. Reducing exclusion and social disparities in health (universal coverage reforms)
2. Organising health services around people's needs and expectations (service delivery reforms)
3. Integrating health into all sectors (public policy reforms)
4. Pursuing collaborative models of policy dialogue (leadership reforms)
5. Increasing stakeholder participation
6. Equitable distribution of health care – according to this principle, health and other services required to meet the main health problems in a community must be provided equally to all individuals irrespective of their gender, age, caste, colour, urban/rural location and social class.
7. Community participation – in order to make the fullest use of local, national and other available resources. Community participation was considered sustainable due to its grass roots nature and emphasis on self-sufficiency, as opposed to targeted (or vertical)

[2] Source WHO Mozambique 2006

approaches dependent on international development assistance.

8. Use of appropriate technology – medical technology should be provided that is accessible, affordable, feasible and culturally acceptable to the community. Examples of appropriate technology include refrigerators for vaccine cold storage.
9. Multi-sectoral approach – recognition that health cannot be improved by intervention within just the formal health sector; other sectors are equally important in promoting the health and self-reliance of communities. These sectors include, at least: agriculture (e.g. food security); education; communication (e.g. concerning prevailing health problems and the methods of preventing and controlling them); housing; public works (e.g. ensuring an adequate supply of safe water and basic sanitation); rural development; industry; community organisations.
10. Health workforce development – comprehensive health care relies on adequate number and distribution of trained physicians, nurses, allied health professions, community health workers and others working as a health team and supported at the local and referral levels.

Health Workforce Development

A major expansion of the health workforce has both immediate and long term cost implications. To meet the cost of scaling up human resources for health requires improved government budgets and international development assistance. Long term sustainable financing of the health workforce is beyond the immediate control of the Ministry of Health but requires engagement and collaboration with other ministerial departments as well as sensitising the political leadership. Financing development of the workforce should become a key component of systems development support by the international community.

In order to do this, the realistic approach is to focus on three essential elements of workforce development, namely training new staff, sustaining and retaining the existing workforce.

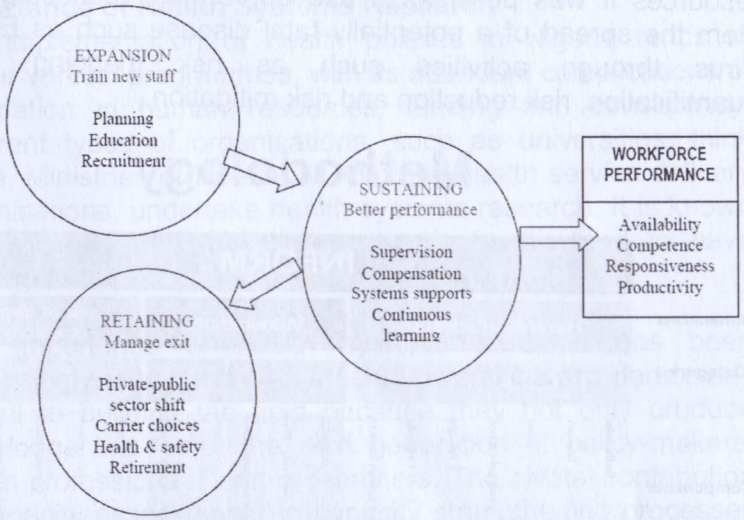

Figure 9: Workforce Development Model[3]

PERSONAL EFFORTS IN WORKFORCE DEVELOPMENT

Capacity assessment is an essential part of building capacity. This is because when thinking of capacity, it is important to first know 'capacity to do what by whom'. Comprehensive capacity assessment can help organisations plan, strategise, and make decisions on future capacity strengthening activities, while contributing to capacity strengthening in its own right. Comprehensive capacity assessment was the nidus of my contribution to the publication to the first Nigeria Health human workforce, 2008, published by the World Health Organisation. Another opportunity to develop the health workforce arose during the 2014 Ebola Epidemic. Appointed at the time as the Director of Community Mobilisation and Communication for Ebola control in Nigeria, I in conjunction with several others, did institute mechanisms which were internationally acclaimed as successful and became a blueprint for replication in several other Economic Community of West African State (ECOWAS) countries to put a stop to the spread of the disease. Workforce development was an essential element during the period and Nigeria was able to show that with existing human capital

3 Source WHO Mozambique 2006

resources it was possible to use appropriate technology to stem the spread of a potentially fatal disease such as Ebola Virus through activities such as risk mapping, risk quantification, risk reduction and risk mitigation.

Methodology

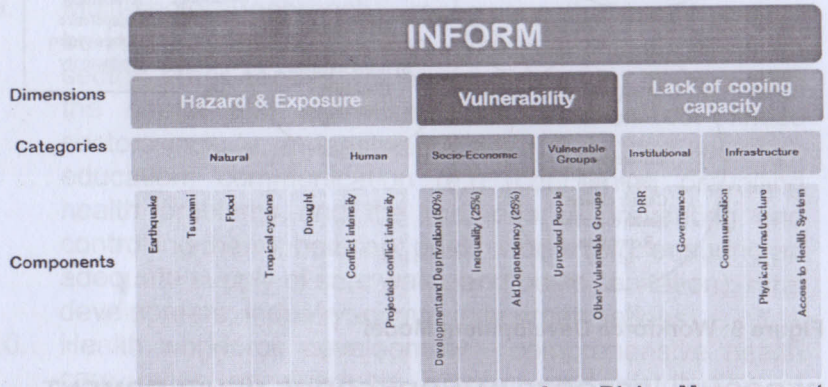

Figure 10: Risk Assessment Tool-Index for Risk Management (INFORM) Global Model

Risk mapping did come into play in the conduction of the University of Lagos Diploma examinations. I remember vividly that two prospective students preparing for the University of Lagos Diploma exams at that material time were contacts of an Ebola case and in quarantine. With the support of the Vice-Chancellor, Prof. Rahamon Bello, the immediate past DVC Academics, Prof. Jide Alo and other management staff, the students wrote their examination online at the quarantine centre without putting other candidates at risk. Several other students of varying institutions were also catered for while reducing the risk involved.

Risk communication is an integral part of the risk map and by the end of the Epidemic in Nigeria, it became even more obvious that the success of community health programmes relies upon the transfer of information from health professionals to the general public using one-to-one or one to many communication (mass communication) even incorporating the latest shift towards health marketing.

Importance of Health Systems Research

The implementation of health policies in Nigeria tends to favour vertical programmes, with its attendant complications of duplication in human resources, funding and consistency. Different types of organisations, such as universities, think tanks, Ministries of Health, NGOs, and health service delivery organisations, undertake health systems research. It is known that various International agencies in health tend to have varying data indicators.

The importance of health systems research has been increasingly recognised. Of these, universities are particularly crucial to building the field because they not only produce knowledge but foster the next generation of policy-makers, health professionals, and researchers. The pivotal contribution of capacity assessments to capacity strengthening processes is often overlooked. Strengthening the capacity of health systems research groups within universities is a unique endeavour. Health systems research should be policy and practice relevant and more emphasis should be on building relationships with policymakers and healthcare practitioners to transfer knowledge.

I have been involved in the collaborative effort of bringing together the town and the gown. In the last few years, I have chaired the collaborative meetings of universities, UNICEF, Federal Ministries of Health, Education and Information bringing to the attention of policy makers research conducted in Nigerian Universities especially in the departments of Community health and Mass communication. The team is referred to as "Network on Behavioural Research and Child Survival in Nigeria" (NETBRECSIN). Members are located in several universities across all the geo-political zones of the country. Several research works conducted as routine components of the Masters programmes, and which would ordinarily gather dust in libraries and on shelves are brought to the attention of policy makers through this collaboration.

Previous attempts to address challenges in the health sector have been dominated by the provision of infrastructure in

tertiary care facilities. While medical infrastructure and equipment are part of the problem, they are a small part of it. The heart of the challenge in providing for the health of the Nigerian people lies not in buildings and equipment but in building systems that ensure effective management of the human and other resources required to prevent ill health and ensure good quality clinical care provided in health facilities, hence, improving community wealth.

Health in Transition

It has been noted that the health of the world's population is in transition.

This transition could be viewed in four dimensions.

1. Epidemiological

There is currently an increase in the prevalence and incidence of Non-communicable diseases in the country and worldwide. This increase could be as a result of several factors among which is that, we have available better diagnostic facilities. It could also be as a result that many more people are surviving to older ages, hence are able to manifest with non-communicable diseases, several of which are age related. It could also be as a result of exposure to several and newer environmental hazards.

Nigeria has a double jeopardy in that it has not been able to effectively control the occurrence of communicable diseases and now has to combat a rising prevalence of non-communicable diseases.

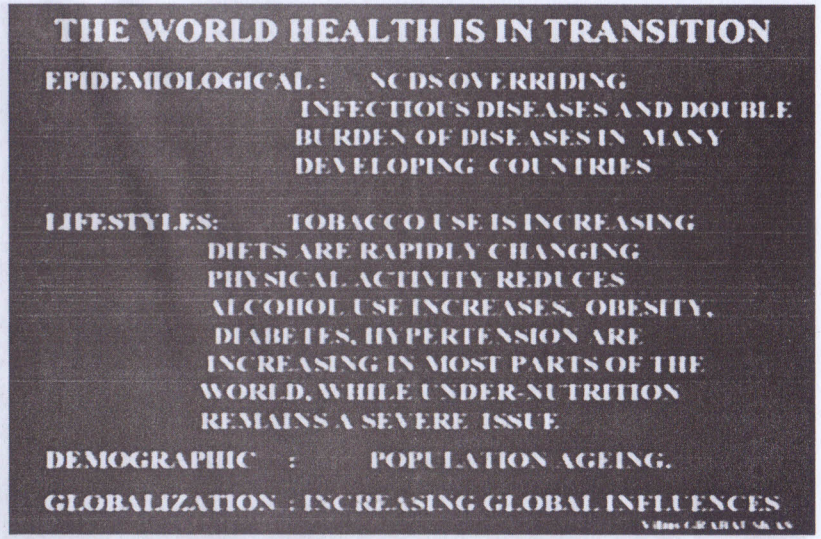

Figure 11: Health in Transition Poster

2. Lifestyle

The word 'Lifestyle' literally refers to the way we live. In the speech by Dr. Gro Harem Brundtland to World Health Assembly in 2002, he opined that the world is living dangerously, either because it has little choice or because it is making the wrong choices. There is now an increase in the use of tobacco and alcohol. Our diets are rapidly changing; our levels of physical activity are reducing due to improved technology. All this results in changing the risk matrixes for non-communicable diseases. It is said that genes are like loaded cannons, and lifestyles pull the trigger.

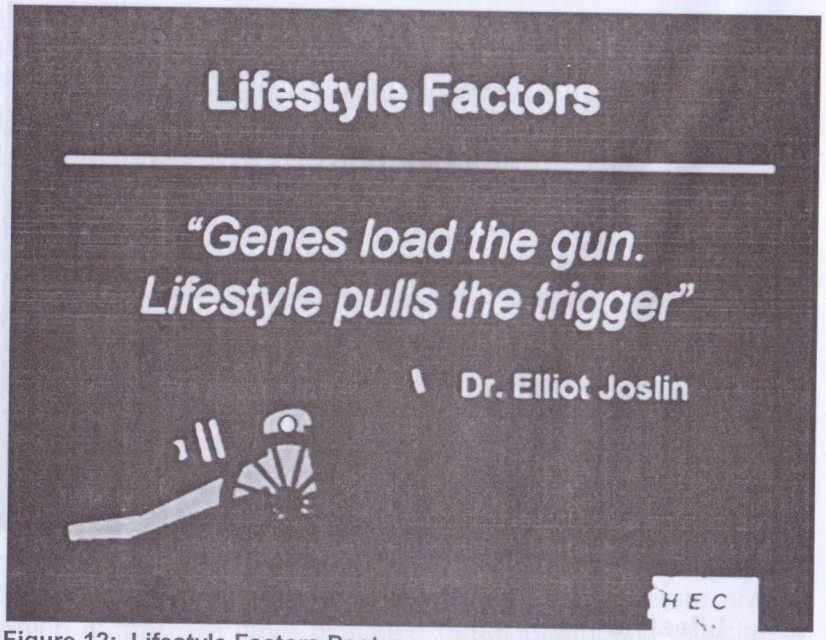

Figure 12: Lifestyle Factors Poster
Source: South Carolina AHEC

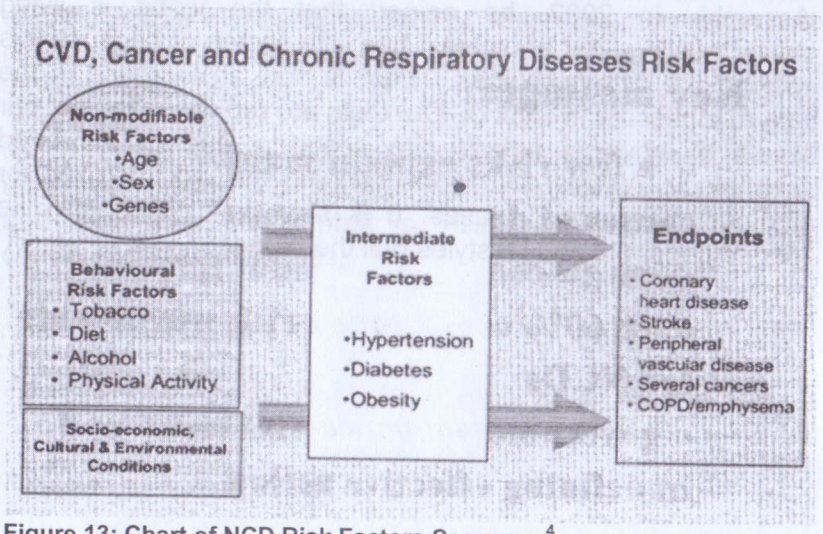

Figure 13: Chart of NCD Risk Factors Sequence[4]

[4] Source WHO

3. Demographic Transition

This describes the changes the world population must undergo to slow down population growth. It is a historical shift of birth and death rates from high level to a low level in a population. It is a cycle through which a nation has to pass to slow down population growth. There are five stages.

First stage (High stationary) – This stage is characterised by a high birth rate and a high death rate which cancel each other and the population remains stationary. All countries were here before 1900.

Second stage (Early expanding) – The death rate begins to decline, while the birth rate remains unchanged. Many countries in Africa and South Asia are in this phase. Birthrates have increased in some of these countries possibly as a result of improved health conditions, and shortening periods of breast feeding.

Third stage (Late expanding) – The death rate declines still further, and the birth rates tends to fall. The population continues to grow because births exceed deaths. Nigeria is in this stage.

Fourth stage (Low stationary) – This stage is characterised by a low birth and low death rate with the result that the population becomes stationary. Austria, Denmark, Sweden and Belgium are in this stage.

Fifth stage (Declining) – The population begins because birth rate is lower than the death rate. Some East European countries, notably Germany and Hungary are experiencing this stage.

4. Globalisation

The world is shrinking daily as a result of better communication and transportation processes. Health concerns in one end of the globe can quickly have an impact in another end of the globe. The impact of health challenges in a

populous country like Nigeria could impact on the whole of the African Region.

Table 13: The 10 Most Populous Countries of the World as Percentage of World Population

SN	Country	Percentage of World Population Accounted for by the Country
1	China	21.08
2	India	16.87
3	USA	4.63
4	Indonesia	3.49
5	Brazil	2.80
6	Pakistan	2.58
7	Russian Fed	2.42
8	Bangladesh	2.13
9	Japan	2.09
10	Nigeria	1.84

Mr. Vice–Chancellor Sir, My research team and I have conducted various studies on the various dimensions of the world's health in transition; epidemiological and lifestyle factors. The study **An Interventional Study on the Effects of Health Education on Sexual Behaviour and Uptake of HIV Counselling and Testing among Out of School Youths in a Nigerian Border Market** assessed the effectiveness of health education and provision of free Human Immunodeficiency Virus (HIV) counselling and testing services on sexual behaviour and uptake of HIV counselling and testing (HCT) among out of school youths (15-24 yrs) in a Nigerian border town market using Seme border as the study group and Idi-Iroko border as the control group. The study concluded that provision of accessible youth friendly voluntary counselling and testing (VCT) services at the border as well as health education for out of school youths will help in improving uptake of VCT services and condom use among those who are sexually active.

Table 14: Relationship between Consumption of Alcohol and Number of Sexual Partners the Respondents have in the study and Control Groups' Pre intervention

	Study Group		Control Group	
Alcohol Consumption	Number of Partners that Respondents have			
	Single Freq (%)	Multiple Freq (%)	Single Freq (%)	Multiple Freq (%)
Drinks alcohol	11 (24)	10 (50)	9 (22)	8 (40)
Does not drink alcohol	42(76)	10 (50)	32(78)	12(60)
Total	55 (100)	20 (100)	41 (100)	20 (100)
		χ^2 =4.79		χ^2 = 2.18
		P = 0.028		P=0.028

Another study assessed **Optimal Storage Condition for CD4 Estimation.** The purpose of this study was to determine optimal storage conditions for HIV infected blood. The results obtained in this study indicate that the absolute value of CD4 cells count decreases on refrigeration. It is recommended that samples collected from the HIV infected persons for CD4 count be kept at room temperature and can be analysed on the second day of collection in resource poor settings.

My team also conducted a research on **Sexually Transmitted Diseases among Pregnant Women Attending Public Health Centres in Sagamu**. This cross-sectional study of pregnant women attending antenatal clinics in public health centres at Sagamu was carried out to determine the prevalence of sexually transmitted diseases among them. The results in general show that women in polygamous marriages are more likely to have received treatment for vaginal discharge than those in monogamous marriages even though this difference was not statistically significant.

Table 15: Relationship between Type of Marriage and Complaint of Vaginal Discharge

Marriage type	Treated No (%)	Never treated No (%)	Total No (%)
Monogamy	34 (66.7)	17 (33.3)	51
Polygamy	9 (50.0)	9 (50.0)	18
No response	1	0	1
Total	44	26	70

X^2 =2.18 p>0.05

Another study on **The Socio-demographic Characteristics and the Level of Awareness of the Prevention of Carcinoma of the Cervix among Commercial Sex Workers in Lagos Nigeria** was to identify the socio-demographic characteristics of commercial sex workers at Ayilara low income semi-urban area of Lagos State and determine their level of awareness of the prevention of cervical cancer. Only thirty seven percent of respondents had ever heard about cancer of the cervix. The main source of awareness about cancer of the cervix was through radio or television. It is recommended that there is a need for awareness campaigns targeted at commercial sex workers on their risk of cancer of the cervix.

Table 16: Relationship between Alcohol Intake and Age at First Sexual Initiation

	Age at First Sexual Initiation (years)		
	12-16	17-21	Total
Takes alcohol	54 (79.4%)	14 (20.4%)	68 (100%)
Don't take alcohol	37 (100%)	0 (0%)	37 (100%)
Total	91(86.7%)	14 (13.3%)	105 (100%)

Mean age at first sexual initiation =12.743 ± 1.971 years
Median age at first sexual initiation=12 years

In response to the increase in non-communicable diseases a **Study of the Knowledge, Attitude and Practice of Breast Self-Examination among Nursing Students in Lagos University Teaching Hospital** was carried out. This sub-population frequently takes care of clients with breast cancer. The study concluded that the level of awareness of breast cancer and breast self-examination was high among nursing

students of the Lagos University Teaching Hospital. (Bassey R.B., 2010).

Table 17: Respondents Practice of Breast Self-examination among Nursing Students in LUTH

Practice of Breast Self-Examination	% of correct answers
How often do you perform BSE in a year	80.2
At what age did you start BSE? <19 years	49.2
>19 years	50.8
When was the last time you performed BSE	
Less than a week ago	34.8
Less than three to six months	35.7
Less than one year	17.4
What time do you normally perform BSE? Morning	69.0
Afternoon	5.3
Evening	25.7
Where do you normally perform BSE? In front of a mirror	50.0
Lying on the bed	56.1
In the bathroom	28.0
Would you want to know more about BSE?	96.0

A similar study carried out among non-medical, female undergraduates in two universities in Lagos, Nigeria found that only 9.6% of the studied population carried out monthly Breast examination while none had ever had a mammogram done. (Onajole A.T. A. A., 2003)

Table 18: Screening Tests Respondents had done among Undergraduates in Two Universities in Lagos

Test	Frequency	%
Monthly BSE	48	9.6
Occasional BSE	45	8.9
Clinical Breast Exam	20	3.9
Mammography	0	0.0

A study on Disease Notification among Physicians in a Nigerian Tertiary health institution was also conducted. The objective of the study was to assess the physician's knowledge, attitudes and practice as related to disease notification. Knowledge about disease notification was generally low and among physicians with good knowledge, those in public health specialty had the highest percentage

while those in pathology specialty had no knowledge at all. A positive attitude was reported by a large majority who believed that disease notification is beneficial to Nigeria's health care delivery system. Even though most of the diseases for routine and immediate notification were diagnosed and treated on a daily basis, only five percent reported these diseases to the appropriate health authority in the last six months prior to the study. This study showed that there is a great need for efforts to improve physicians' knowledge on disease notification.

Table 19: Relationship between Years of Practice and Attitude towards Disease Notification

	All doctors should be knowledgeable about disease notification			
Years of practice	Agree	Uncertain	Disagree	Total
<15 years	94 (86.2%)	13 (12%)	2 (1.8%)	109 (100%)
>15 years	1 (9.1%)	2 (18.2%)	8 (72.3%)	11 (100%)

$\chi 2 = 91.8$ df =2 p=0.0286

Health System Strengthening

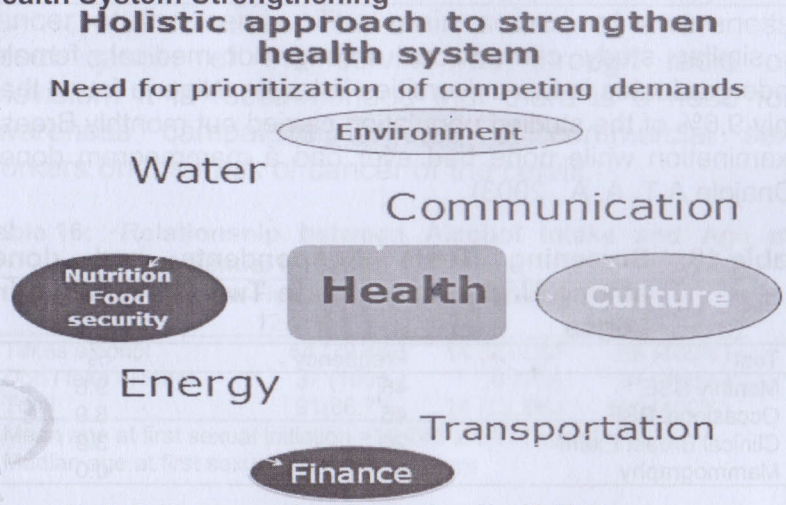

Figure 14: Holistic Approach to Strengthen Health Systems

No permanent improvement of community health can be achieved without the active participation of the people in the local health programme. The development of local effort and the promotion of a spirit of self-help in the community are as important to the success of the health programme as the

specific services, which the health worker is able to place at the disposal of the people.

Unless the conscience of the citizens as a whole is stimulated to demand and accept better standards of health, unless the principles of sound hygiene are inculcated into the masses through health education and other efforts, and unless government feels strengthened in taking positive measures to promote health, it will be difficult for health authorities alone to ensure that the measures contemplated are actually implemented and produce an effect on community wealth.

Priority Areas for the Nigerian Health System

1. **Implementation of the National Health Act:** Although the Bill has been signed into law, implementation remains a major challenge. There is a need to address this, especially against the backdrop of shrinking oil revenue.
2. **Identification of Specific Health Priorities and Presentation of Accessible, Measurable Plans for Response:** (e.g. Childhood immunisation, maternal care, access to emergency services, prevention and care of HIV & AIDS, environmental sanitation, etc). The aim should be to build on the progress made in childhood immunisation and maternal and child health and put in place or strengthen specific, managed, and funded programmes. The programmes should take into account the inequalities in health outcomes between different zones of the country and between the rural and urban populations.
3. **To Drive Improvement with Data and Put this Data in the Public Domain**: Nigerians have a right to a basic minimum level of health and healthcare and must learn to ask for this. The National Health Act makes provision for setting up, resourcing and sustaining an information management system for health and healthcare management data. Putting the quality indicators and targets for all the priority areas and all tertiary health facilities in the public domain and letting Nigerians judge on their delivery and performance.

4. **Institute a Management Culture for our Health Sector:** The entire health system is in dire need of bold, innovative and strategic management. Government should assess, map and categorise existing health infrastructure and the existing resource. Through an open and transparent recruitment process, we should identify the appropriate expertise to manage health sector organisations from people with the appropriate management skills, develop the capacity of existing managers and establish clear referral pathways and systems. We should also put in place mechanisms to enable the participants in the sector to learn from successes and failures.
5. **Health Financing:** It is important to commit to increasing the health sector's budget to recommended spending levels (~4% in 2014 vs recommended 10%) and implement the Primary Health Care Fund as proposed in the National Health Act with strict regulatory oversight (as in PENCOM). Seek the appropriate expertise to drive the funding goals of the NHIS and set a target of covering 60% of the entire population in 4 years. All budgetary provisions on healthcare projects and programmes should be made public, available online and trackable.
6. **Quality at the Heart of Care:** There is a need to put the quality of care provided to patients at the heart of the entire health system. Patients must not wait hours at hospitals and be talked to condescendingly. Clinical procedures must be explained in detail and our healthcare professionals must be courteous and professional. Commit to working with patients and professionals to agree to a code of conduct that will be publicly displayed in all public hospitals. Government should strengthen the regulatory organisations (Nigerian Medical and Dental Council, the Nursing Council, etc.) and provide access to complaints. Government will need to review the curriculum, modernise and ensure that our educational institutions at undergraduate and postgraduate level produce professionals that embrace the patient dignity and quality agenda.

7. **Focus on Leadership and Clinical Competence:** Government through its regulatory agencies should actively identify Nigerians that are leaders and experts in healthcare, in every speciality, and attract them to come back and work in the public sector by providing appropriate incentives and conducive working and living environments. It should not limit the debates only on salaries, but by engaging with the trade unions across the health sector to focus on deliverables, in addition to remuneration.
8. **Private Sector:** A significant amount of individual and household expenditure on health in Nigeria is spent in the private sector for services of doubtful quality.

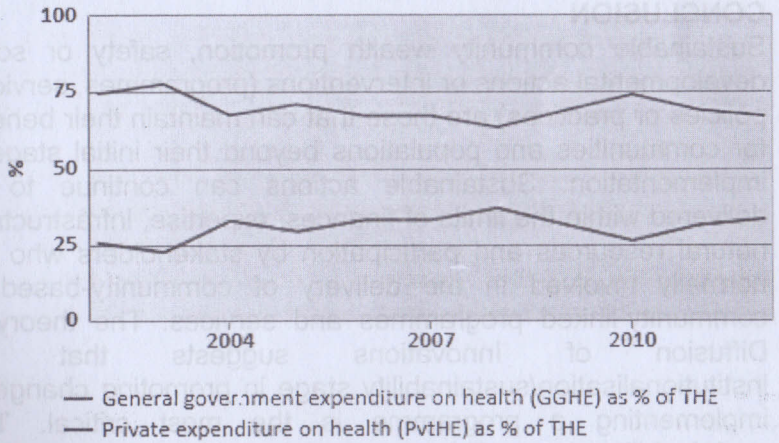

Figure 15: Private and Public Health Expenditure as %age of Total Health Expenditure

There should be a supportive and encouraging atmosphere to allow for innovative private sector initiatives while strengthening the regulation of private sector providers. This can be done by establishing clear and transparent accreditation systems and providing incentives for private facilities in under-served areas. It should also regulate the informal providers of health care and use them better in the delivery of care in underserved areas.

9. **Health Education:** Government should use innovative social marketing techniques to aggressively communicate health messages, create awareness of health facilities and discourage harmful practices.

These are ambitious targets that will not materialise with immediate success. Positive change is often painful and will face resistance and often resentment. But it cannot be business as usual. A healthy population is our greatest asset. Without good health, little else is possible. With a clear agenda, good leadership, a good implementation plan, and a good team with the requisite clinical and managerial skills these ambitious heath objectives can be achieved.

CONCLUSION

Sustainable community wealth promotion, safety or social developmental actions or interventions (programmes, services, policies or practices) are those that can maintain their benefits for communities and populations beyond their initial stage of implementation. Sustainable actions can continue to be delivered within the limits of finances, expertise, infrastructure, natural resources and participation by stakeholders who are normally involved in the delivery of community-based or community-linked programmes and services. The theory of Diffusion of Innovations suggests that the institutionalisation/sustainability stage in promoting change or implementing a programme is the most critical. This sustainability stage will be reached (or not) after two to three years of ongoing support and allocation or re-allocation of resources.

The Ottawa Charter identifies a stable ecosystem and sustainable resources among the prerequisites for health, and states that taking care of natural resources is central to creating a supportive environment for health.

Sustainable Community wealth promotion strategies are those which are compatible with the natural environment in which they are carried out and do not create unintentional threats to the health of future generations due to their ecological impact.

Sustainability must be achieved at multiple levels (professionals, school, school board/health authority/agency and ministries) within several systems to be stable. Factors that promote sustainability include; the perceived advantages (social, economic, political) of the innovation or reform, the involvement of middle managers as champions, linking the long-term health or social goals of the project to short term educational benefits. Training of all relevant staff (not just educators) is important but only effective if it is provided to new staff and only if it is updated for existing staff.

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REFERENCES

Abdulraheem, I. S., **Onajole, A. T.**, Jimoh, A. A. G., Oladipo, A. R. (March). Reasons for Incomplete Vaccination and Factors for Missed Opportunities among Rural Nigerian Children Journal of Public Health and Epidemiology 2011, Vol. 3(3).

Abdulraheem, I. S., **Onajole A. T.**, Bamgbala, A. O., (Jan – Feb, 2003). Malaria Chemoprophylaxis among Pregnant Women Attending ANC in Ilorin Kwara State Nig. Med. J., Vol. 44, No. 1.

Abdulraheem, I. S., Monehin, A. A., Akanbi, A. A., **Onajole, A. T.**, Bamgbala, A.O., (2004). Disease Notification among Physicians in a Nigerian Tertiary Health institution. Nig. Med. Pract. Vol. 45 no. 6 (111-115)

Abdulraheem, I. S., **Onajole, A. T.**, (July 9-11, 2006). Practical and Affordable Preventive Measures for Health Care Workers against Nosocomial Transmission of Tuberculosis in Resource limited settings. Nig. Med. Pract., Vol. 50, No. 1.

Abdulraheem, I. S., **Onajole, A. T.**, Fatiregun, A. A. Human Resources Development in a Public Health Sector: The Role of Manpower Planning and Training. International Journal of Development and Public Policy Studies. Vol. 2. No. 1. 98-109

Adeniyi, A. A, **Onajole, A. T.** (2010). The National Health Insurance Scheme (NHIS): A Survey of Knowledge and Opinions of Nigerian Dentists' in Lagos *Afr. J. Med. Sci.* 39

Adepoju, E. G., **Onajole, A. T.**, Oreagba, I. O., Odeyemi, K. A. Ogunnowo, B. E., Olayemi, S. O. (2005). Health Education and Caregivers Management of Malaria among Under Fives in Ede North LGA, Osun State of Nigeria. Nig. Med. Pract. Vol. 48 No. 4, (72 – 81).

Bassey, R. B., Irurhe, N. K., Olowoyeye, M. A., Adeyomoye, A. A., **Onajole, A. T.** (2010). Knowledge, Attitude and Practice of Breast Self Examination among Nursing Students in Lagos University Teaching Hospital. Academic Journal of Cancer Research. 3 (2):11-15,

Federal Ministry of Health, Abuja. Federal Strategic Health Development Plan, (March, 2010-2015). FMOH.

Gillian Lê1, Tolib Mirzoev, Marsha Orgill, Ermin Erasmus, Uta Lehmann, Stephen Okeyo, Jane Goudge, Stephen Maluka, Benjamin Uzochukwu, Moses Aikins, Don de Savigny, Goran Tomson and Lucy Gilson (2014). A New Methodology for Assessing Health Policy and Systems Research and

Analysis Capacity in African Universities. Health Research Policy and Systems. 12:59

Labiran, A., Mafe, M., Onajole, A. (2008). Health Workforce Country Profile for Nigeria. Africa Health Workforce Observatory.

Bamgbala, A. O., **Onajole, A. T.**, Osisanya, T. F., Olajobi, F. O. (Dec. 2003). A Study of HIV Awareness and Attitudes among Adolescents in Ifo, a Rural Local Government Area in Ogun State. J. of Community Medicine and Primary Health Care. Vol. 15, No. 2.

Omosehin, O., Odeyemi, K. A , **Onajole, A. T.**, Ogunnowo, B. E. (Jan. – Jun. 2006). Awareness and Acceptance of the National Health Insurance Scheme among Health Care Providers in Urban Local Governments in Lagos State. Journal of Cli. Sc. Vol. 6, No. 1.

Onajole, A. T., Dolapo, D. C., Osunkalu, V. O., Esiet, U., Esiet, A., Odiakosa, A. (2010). Okpechi F. Care Seeking Determinants among Adolescents in Lagos, Nigeria. Sierra Leone J.Biomed Res. Vol. 2, No. 1.

Onajole, A. T., Ajekigbe, A. T., Dawotola, A., Odeyemi, K. A., Abdulraheem, I. S. (2003). Awareness of Self Examination of the Breast among Non-medical Undergraduates in Two Universities in Lagos. Nigeria. The J. Medical women's Association.pp.38-41.

Onajole A.T., Ali F.A., Odeyemi K.A., Ogunnowo B.E., Oridota E. S. Perceived cost in the utilization of Antenatal Services in Abeokuta North LGA of Ogun State. Nig. Med. Pract.2005, Vol. 48, No. 4, (98 – 102)

Onajole A.T., Ali F.A., Utilization of Antenatal care and Delivery Services by Pregnant Women in Abeokuta South Local Government of Ogun State. Nigerian Hospital Practice, 2007 Vol. 1, Jan –Feb. Pg 31-36

Onajole, A. T., Oreagba, I. A., Odeyemi, K. A., Ogunnowo, B. E., Osunkalu, V. O., Abdulraheem, I. S., Dolapo, D. C, Oridota, E. S. (Mar. – May, 2007). Perception of Tuberculosis in a Faith Based Organization in the South West of Nigeria. Nig. Hosp. Vol. 1, No. 2.

Onajole, A. T., Okpechi, F. U., Balogun, M., Esiet, U., Esiet, A., Odiakosa, A. (Sept., 2012) HIV Testing among Young People: Implications for Sexual and Reproductive Health Behavior. Nig. Med. Pract. Vol. 62, No. 3.

Oreagba, A. I., **Onajole, A. T.**, Taylor, O., Olayemi, S. O., Jinadu, A. (2003). Home Management of Malaria. The J. Medical women's Association.pp.16-20.

Oreagba, I. A., **Onajole, A. T.**, Olayemi, S. O., Mabadeje, A. F. B, (2004). Knowledge of Malaria amongst Caregiver in Rural and Urban Communities in South West Nigeria. Trop. J. Pharmaceutical Research, 3(1):299-304.

Oreagba, I. A., **Onajole, A. T.**, Olayemi, S. O., Sebastian, V. N. O., Taylor, O., Oladayo, Y. O. (April - June, 2005). Outcome of a Face to Face Educational Strategy on Awareness and Treatment Knowledge of Malaria amongst Caregivers of Young Children in a Rural Community in Southwest Nigeria. Nig. Qt. J. Hosp. Med. vol. 15 (2).

Oreagba, I. A., Olayemi, S. O., Omotosho, S. K., **Onajole, A. T.**, Awodele, O., Akinyede, A. A. (June, 2008). The Use of Artemisinin-Based Combination Therapies (ACTs) in Public Secondary Health Facilities in Lagos, Nigeria. Niger Postgrad Med J. 15 (2):94-100

Oyeyemi, A. S., Ogunnowo, B. E., Odukoya, O. O., **Onajole, A. T.**(2014). Campbell, P. C., Osibogun, A. (Mar. 21) Evaluation of a Health Resources Management Course for Nigerian Doctors. Nigerian Postgrad. Med, J. (1) : 11 – 6

Sekoni, A. O., Odukoya, O. O., **Onajole, A. T.**, Odeyemi, K. A. (2013). Sexually Transmitted Infections Prevalence, Knowledge and Treatment Practices among Female Sex Workers in a Cosmopolitan City in Nigeria. African Journal of Reproductive Health 36(141):5-13.

Sekoni, A. O., **Onajole, A. T.**, Odeyemi, K. A., Otoh, D. A. (2011). The Effects of Health Education on Sexual Behavior and Uptake of HIV Counseling and Testing Among out of School Youths in a Nigerian Border Market Journal of Medicine in the Tropics.13: 19-26

Sekoni, A. O., **Onajole A. T.**, Odeyemi, K. A., Otoh, D. O. (2011). The Effects of Health Education on Sexual Behavior and Uptake of HIV Counseling and Testing Among out of School Youths in a Nigerian Border Market Journal of Medicine in the Tropics. 13: 19-26

Sekoni, A. O., **Onajole,** A. T., Odeyemi, K. O., Otoh, D. O. (2011). The Effects of Health Education on Sexual Behaviour and Uptake of HIV Counselling and Testing among out of School Youths in a Nigerian Border Market. Journal of Medicine in the Tropics 13(1):19-26

Sekoni, A. O., **Onajole, A. T.**, Odeyemi, K. O. (2012). Prevalence of Sexually Transmitted Infections and Sexual Practices of Out of School Youths in Border Town Markets in Lagos and Ogun State. Nigerian Medical Practitioner, 62 (5-6); pp. 122-129.