



ORIGINAL ARTICLE

Implementing Prevention Interventions for Non-Communicable Diseases within the Primary Health Care System in the Federal Capital Territory, Nigeria

Okpetu EI¹, Abimbola S², Koot JAR³, Kane S⁴

¹Department of Primary Health Care, Kuje Area Council, Federal Capital Territory, Abuja, Nigeria.

²Research Fellow, National Primary Health Care Development Agency, Abuja, Nigeria.

³Department of Health Sciences, University Medical Centre, Groningen, The Netherlands

⁴KIT Health, Royal Tropical Institute, Amsterdam, The Netherlands

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ABSTRACT

Background: Nigeria as well as other low and middle-income countries have double burden of communicable diseases and non-communicable diseases (NCD). This study examined the implementation of the NCD component of the National Minimum Health Care Package in Nigeria's Federal Capital Territory where the prevalence of diabetes and hypertension is increasing.

Methods: This descriptive study was organised along two lines of inquiry: document review (guidelines, policies, programme documents and services records in the Federal Capital Territory, Nigeria) and a qualitative study (focus group discussions with community representatives and frontline health workers, interviews with health program managers and non-participant observations of primary care facilities).

Results: Existing policies and guidelines for NCD prevention have several implementation shortfalls including insufficient recognition of the burden of disease at primary care level and associated low prioritisation of NCDs; poor resourcing of NCD-related activities and poor operationalisation of relevant guidelines. Other constraints were: inadequate human resources for PHC services in numbers and mix of cadres, deficiencies in knowledge on management of diabetes and hypertension by PHC workers, insufficient job aids in primary care facilities for prevention, management and referral of hypertension and diabetes, weak information systems and referral linkages between primary care and secondary/tertiary care facilities for NCDs.

Conclusion: The capacity of the PHC system to implement NCDs interventions is weak, necessitating a need to strengthen coordination, partnership and funding for better response to NCD prevention in primary care. Capacity building specific to NCD prevention should involve tools/technology, skills, infrastructure, manpower, referral linkages and community participation.

Correspondence to:

Dr Emmanuel I. Okpetu
Department of Primary Health Care
Kuje Area Council
Federal Capital Territory, Abuja, Nigeria.
Email: emmaokpetu@gmail.com
Telephone: +2348052498086

INTRODUCTION

There has been an increase in the burden of Non-Communicable Diseases (NCDs) in both urban and rural communities¹ of Low and Middle Income Countries (LMICs), partly due to lifestyle modifications, diet change and

environmental hazards resulting from globalisation.^{2,3} Cardiovascular diseases, diabetes, cancers and chronic lung diseases regarded as the major NCDs, are responsible for at least 70% of global mortality over the past decade with at least 75% occurring in

LMICs in 2015.^{4,7} With on-going communicable disease burden, LMICs are transitioning to a double burden of communicable and non-communicable diseases.^{8, 9} NCDs are on the increase in Nigeria with current trends showing increasing incidence and prevalence of hypertension, coronary heart disease, diabetes (particularly type II), smoking related diseases and other NCDs.^{10, 11} The World Health Organisation (WHO) estimated that in 2005 NCDs were responsible for about 24% of all deaths in Nigeria, projected to increase by another 24% (with deaths from diabetes alone increasing by 52%) between 2005 and 2015. A total of 5 million Nigerians may die from NCDs in this decade.¹² NCDs create large adverse economic effects on families and communities. In 2005 alone, Nigeria lost an estimated 400 million dollars to premature deaths from heart disease, stroke and diabetes, projected to increase cumulatively from 2005 to 2015 and beyond.¹⁰

NCDs, particularly hypertension and diabetes, are among the five top causes of mortality in the Federal Capital Territory (FCT), Abuja, Nigeria.^{13, 14} Figure 1 highlights the burden of NCDs FCT in terms of incidence in 2011 with hypertension and diabetes together accounting for 10% of the reported total diseases which was the cumulative records of new cases in public secondary health facilities in FCT.¹³ FCT has a population of more than 3 million people with a growth rate of 9% annually, which is three times the national average.^{15, 16} Common risk factors for NCDs include alcohol abuse, tobacco use, physical inactivity and unhealthy diet.¹⁷ More than 80% of deaths caused by NCDs could be prevented through primary and secondary prevention.¹⁸ In LMICs like Nigeria, intensifying primary and secondary preventive activities would be very relevant and more cost effective for

controlling the epidemic of NCDs in an earlier stage rather than the burden of treatment and rehabilitation as being experienced by some developed countries.^{6, 19}

Nigeria started the implementation of the Standard Minimum Health Care Package in PHC facilities since 2007. This package has six broad categories of interventions viz (i) Control of communicable diseases, (ii) Child survival, (iii) Maternal and new-born care, (iv) Nutrition, (v) Non-communicable disease prevention and; (vi) Health education and community mobilisation.²⁰ The interventions included in the package to prevent NCDs through the PHC system include: (i) capacity building of PHC workers for prevention and control of NCDs, ((ii) display of Information, Education and Communication (IEC) materials on NCDs in PHC facilities and (iii) basic equipment for screening and early diagnosis of NCDs in PHC facilities (such as sphygmomanometer, stethoscope, weighing scale, stadiometer and urine test kits).

This study was therefore conducted to assess the delivery of interventions aimed at preventing NCDs and to explore the factors which influence the implementation of NCDs prevention policies and plans through Primary Health Care in the Federal Capital Territory, Abuja, Nigeria. This is with a view to make recommendations to better respond to the growing challenge of NCDs. The specific objectives included exploring the extent to which the minimum package for NCDs is implemented in selected PHC facilities, the extent to which knowledge, practices and views of PHC facility personnel are consistent with the NCDs component of the minimum care package and to explore the knowledge, views and perception of community stakeholders as a proxy to assess community knowledge and participation in NCDs prevention activities.

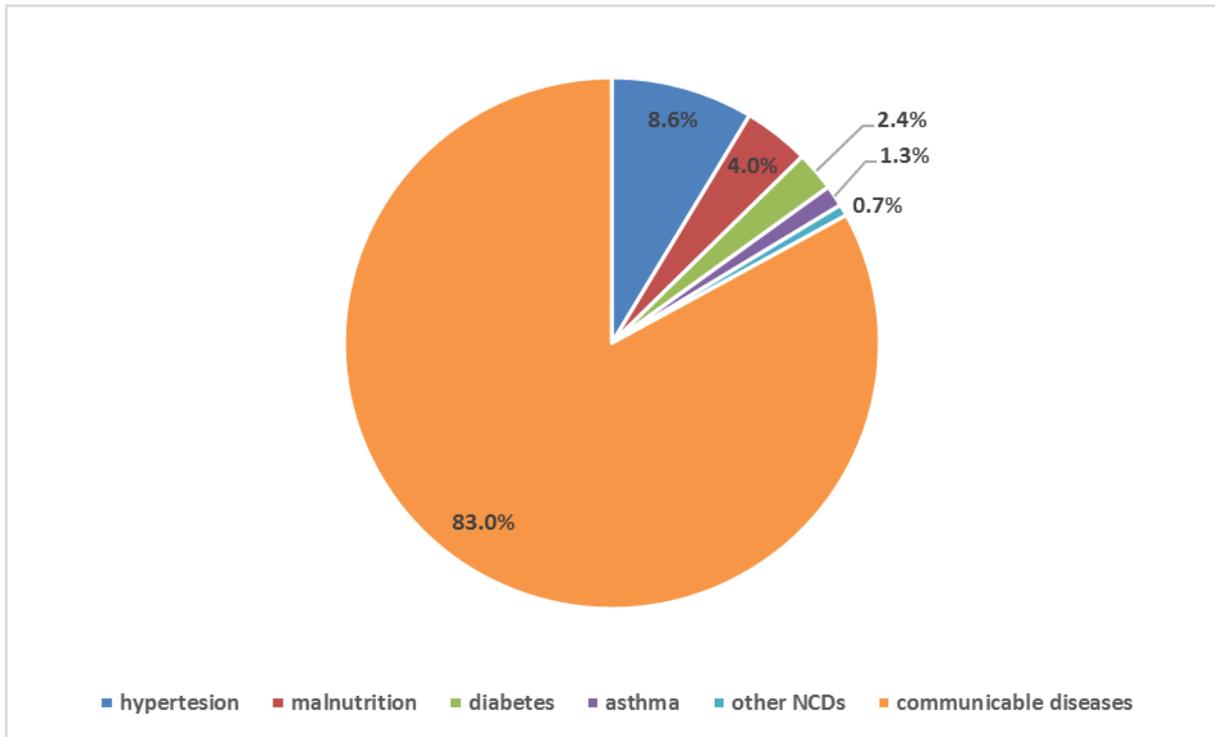


Figure 1: Total burden of diseases by disease incidence for FCT public secondary health facilities in 2011 (Source: Adapted from FCT Statistical Health Bulletin 2011)

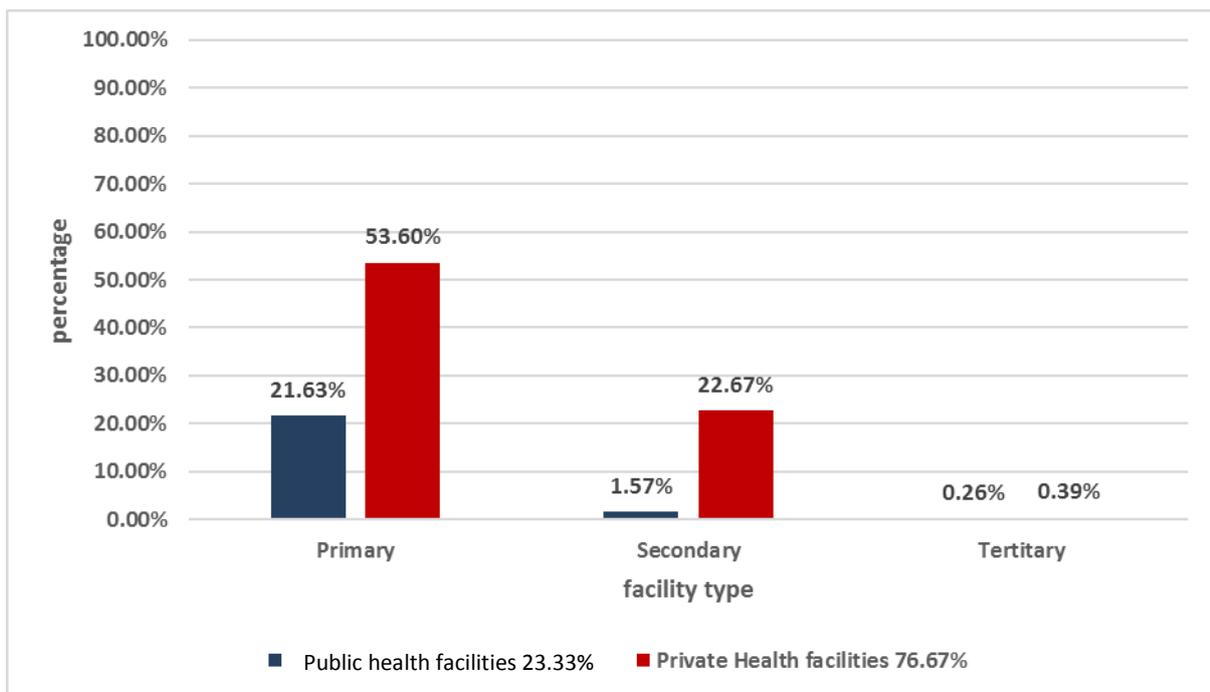


Figure 2: Percentage distribution of registered health facilities in FCT in 2011 by category (Source: Adapted from FCT Statistical Health Bulletin 2011)

METHODOLOGY

The FCT has six Local Government Areas known as Area Councils, with a total of 62 wards. The wards are the smallest political units of the Area Councils. Each ward has at least one PHC centre which serves as hub for organising PHC service delivery to villages and settlements in its catchment. Figure 2 shows the distribution of registered health facilities within the FCT. Public primary care facilities (PHC centres) account for more than 20% of total registered health facilities in FCT. Secondary and tertiary care facilities provide referral support and specialised services. Each ward has a community health committee composed of volunteers and representatives of various interest groups in the ward. The health committees are concerned with health services and other related development issues in the community. The PHC health workforce is composed of a mix of health professionals among which the Community Health Extension Workers (CHEWs) make up 50%. Other cadre include medical doctors, nurses, midwives, community health officers, pharmacists and laboratory scientist/technicians. Administrative and technical coordination of PHC services in each Area Council is the responsibility of a medical doctor designated as PHC coordinator and Medical Officer of Health.

This descriptive study was organised along two lines of inquiry: a document review and an exploratory qualitative study. For the qualitative exploratory component, we conducted focus group discussions, key informant interviews and non-participant observations of selected PHC facilities between 23rd June and 14th July 2013. A total of 47 persons were involved in the focus group discussions and interviews.

The documents review included: Guidelines (National Guidelines for Development of

Primary Health Care System in Nigeria 2012, the standing orders for Community Health Officers and Community Health Extension Workers);^{5, 21} Health policy documents (National Strategic Health Development Plan 2011-2015, FCT Strategic Health Development Plan 2011-2015, Essential Medicines List 2010, Essential Equipment list for PHC 2012 and National Health Insurance Scheme Benefit Package);²²⁻²⁴ Reports (FCT Primary Health Care Development Board 2011 Report on Infrastructure Inventory and Staff Audit for all Public Primary Health Care Facilities and FCT Statistical Health Bulletins 2010 and 2011); Public health facilities services records as documented in the FCT Statistical Health Bulletins (2010 and 2011)^{13, 14, 25} and the outpatient registers of 6 Primary Health Care centres visited for observations. The documentary review and secondary data were also enriched by internet sourced literature using the following keywords in various combinations: NCDs, Hypertension, Diabetes, Essential/Minimum/Basic Health Package, PHC, Nigeria, Federal Capital Territory, Abuja, prevention, implementation.

A total of three Focus Group Discussions (FGDs) were conducted. In the FGDs, sampling was purposeful - one group consisted of CHEWs with 1 male and 1 female CHEWs selected from each of the six Area Councils of the FCT. A total of 12 CHEWs, 6 females and 6 males each with at least five years working experience participated. The group of CHEWs was homogenous by qualification and minimum years of experience. CHEWs are involved in outpatient clinical consultation in Primary Health Care centres, basic medical examination and screening, outreach services, routine immunisation, antenatal care services, health records keeping and reporting. The FGD with CHEWs explored the knowledge, practices and views of CHEWs relative to the NCDs

component of the minimum health care package. Two Area Councils, one rural and one urban were chosen for FGDs with a purposefully selected community health committee in each of the chosen Area Councils. The community health committees had membership from traditional leaders, religious leaders, youth groups, women groups, school teachers and other opinion leaders. The FGDs with the health committees aimed at gaining insight on possible differences in knowledge and perception about NCDs between and within the urban and rural groups.

Six key informant interviews were conducted with purposefully selected policy makers and health managers to represent views from national and sub-national officials on PHC policy formulation and implementation. All key informants were experienced public health professionals with several relevant years of public service. The key informants included 2 Medical Officers of Health from a rural and an urban Area Council, the Director of Disease Control at the FCT Primary Health Care Development Board and the Coordinator of the NCDs program for FCT. The Director of Community Health Services at the National Primary Health Care Development Agency and a consultant cardiologist at the University of Abuja Teaching Hospital were also interviewed. A summary of the characteristics of interviewees and discussion participants is presented in Table 1.

Interview and discussion guides were developed based on the WHO framework for implementation of essential NCD interventions for PHC in low-resource settings. This framework was developed by the WHO in 2010 as a guide following the recommendations of the Global Strategy for Prevention and Control of NCDs.^{17, 26} All FGDs and interviews were tape recorded and also had manual notes taken. Both sources of

recordings were combined at transcription and analysis to ensure accurate capture of respondent views. Pre-set and emergent themes were used to categorise responses.

A checklist based on the minimum health care package expected at the PHC facilities was used in the observation of one purposefully selected PHC centre in each of the six Area Council's headquarters. This checklist was used to assess for presence, display and use of IEC materials, basic screening equipment for diabetes and hypertension and job aids in the six PHC facilities. Pictures of relevant findings were taken to support documentation and analysis. The findings from each of the 6 PHC centres visited were tabulated and crosschecked with the checklist to identify gaps in the NCDs expected package. These various data collection methods were used to triangulate data and increase validity of the findings.

Ethical approval was obtained from the Federal Capital Territory Health Research Ethics Committee, Abuja, Nigeria and the Royal Tropical Institute Research Ethics Committee, Amsterdam, Netherlands. Permission to conduct the study was also obtained from the management of the Area Council PHC departments. Participation in the study was entirely voluntary and based upon the participant signing a written informed consent form.

RESULTS

Service Delivery for Non-Communicable Diseases

The 2011 PHC equipment inventory and staff audit report of the PHC Development Board of FCT concluded that some wards did not have PHC centres and some will require more based on population and geography, while some had PHC centres in surplus to requirement.²⁵ The interviewed Area Council Medical Officers of

Health however suggested that there was at least one PHC facility that functions as a PHC centre per ward in each Area Council.

In the observation exercise, job aids such as case definitions, diagnostic charts and case management guidelines were not available during our visits in the selected PHC facilities. Likewise, IEC materials on diabetes and hypertension were not displayed in any of the PHC facilities we visited, but one PHC facility had some IEC materials on breast cancer. We also found that 2 PHC facilities had IEC materials on the danger of tobacco smoking but they were in poorly visible prints and displayed in obscure locations. Only one PHC facility had a poster conspicuously displayed with messages targeting some major NCDs risk factors namely excessive salt intake, alcohol abuse, tobacco smoking and unhealthy fatty diet. The majority of IEC materials on display in the six PHC facilities had messages on immunisation, HIV/AIDS, family planning, malaria and breast feeding. Table 2 shows availability of IECs on NCDs in the visited facilities.

Further, the interviews and group discussions revealed some prevention and demand creation activities on NCDs. They include radio and television programs and school based awareness programs on diabetes and hypertension. Some local NGOs were reported to be involved in occasional awareness campaigns and screening exercises in communities. The federal and state health managers were involved in occasional keep fit exercises for their staff during which screening for diabetes and hypertension were sometimes conducted. However, this practice was not regular and not replicated in the Area Councils at which PHC is administered.

Essential Drugs and Technology for Non-Communicable Diseases

Most of the basic tools and equipment (sphygmomanometers, stethoscopes, stadiometer and urinalysis strips) for NCDs as recommended by the WHO and in Nigeria's Minimum Health Care Package were available and functional in all 6 PHC facilities visited except for one PHC facility which did not have a functional adult weighing scale. Only two had a functional glucometer. Table 3 outlines the observed availability of the basic tools in the selected PHC facilities. Table 4 compares the equipment list for PHC in Nigeria with the recommendations by the WHO for PHC. The essential medicines list for PHC facility in Nigeria excludes drugs for the management of diabetes and cardiovascular diseases.²⁷ Oral medications for managing hypertension and diabetes were available in some PHC facilities as affirmed by some CHEWs in the FGD. Table 5 compares WHO recommended essential drug for primary care with the essential Medicines list for secondary and primary care in Nigeria.

The standing orders for CHEWs does not authorise them to use anti-hypertensive medication,²¹ but CHEWs in our FGD prescribe and dispense oral Methyl dopa, Nifedipine and Moduretic to treat hypertension but they neither prescribe nor dispense diabetes drugs (they are not authorised to do so either). From our documentary review, WHO advocates treatment for hypertension and diabetes at primary care facilities and that the drugs should be available for refill and long term care at the PHC facilities.¹⁷ WHO however recommends that these drugs should be mostly prescribed by physicians.¹⁷ The specialist physician interviewed at a tertiary centre also indicates preference for having certain categories of patients managed or

Table 1: Characteristics of study respondents and informants

Respondent	Sex	Qualification/designation	^Years of relevant job experience/*Age range
Key informant 1	Female	Director Community Health Services, National Primary Health Care Development Agency. Medical doctor with postgraduate training in public health.	25 years^
Key informant 2	Male	Director Disease Control, FCT Primary Health Care Development Board. Medical doctor with postgraduate training in public health	23 years^
Key informant 3	Male	Medical Officer of Health, Abaji Area Council. Medical doctor with postgraduate training in public health	15 years^
Key informant 4	Female	Medical Officer of Health, Abuja Municipal Area Council. Medical doctor with postgraduate training in public health	18 years^
Key informant 5	Male	Consultant/Specialist cardiologist, University of Abuja Teaching Hospital	15 years^
Key informant 6	Male	NCD Coordinator, FCT Public Health Department. Medical doctor with postgraduate training in public health	11 years^
FGD 1			
12 participants	6 Males, 6 Females	Community Health Extension Workers (CHEWS)	5-10 years^
FGD 2			
15 participants	13 Males, 2 Females	Community Health Committee A 2 traditional leaders, 2 religious leaders, 1 youth leader, 1 women leader, 1 school teacher and 8 other community representatives	20-64 years*
FGD 3			
14 participants	8 Males, 6 Females	Community Health Committee B 1 traditional leader, 2 religious leaders, 1 youth leader, 1 women leader, 1 school teacher and 8 other community representatives	22-62 years*

Table 2: Observed IEC materials on NCDs at 6 PHC facilities in the Federal Capital Territory

PHC Facility	Types Of IEC Available	Displayed IEC On Major NCDs	Displayed IEC on NCDs Risk Factors
Facility 1	Wall posters Banners	None	Consequences of tobacco smoking
Facility 2	Wall posters, Handbills	None	None
Facility 3	Wall posters, Banners, Handbills, Videos,	None	Tobacco, alcohol, unhealthy diet
Facility 4	Wall posters, Banners, Handbills	Breast cancer awareness	None
Facility 5	Wall posters, Handbills	None	Consequences of tobacco smoking
Facility 6	Wall posters	None	None

followed-up at the PHC facilities. The benefit package of the National Health Insurance Scheme includes treatment for hypertension and diabetes.²⁴

Information Systems for Non-Communicable Diseases

Participants in the interviews and discussions described reporting of NCDs from PHC facilities as less than optimal. This was attributed to the emphasis placed on communicable diseases by surveillance officers and by technical partners such as the WHO. Other reasons mentioned were non-specific to NCDs but linked to inadequate resources for transport and logistics to monitor and support surveillance at the PHC facilities. Monitoring, Evaluation and Supervisory visits to PHC facilities by health managers were irregular and emphasised data on maternal and child health, immunisation, HIV/AIDS, TB and malaria, while data on diabetes, hypertension and other NCDs were not prioritised. For example, a CHEW said: “There

is column for NCDs in our registers, but they don't usually ask us for them when they visit”.

In addition, NCDs indicators are absent in the Strategic Health Development Plan of the FCT, with the absence of reports on NCDs from PHC facilities in the Statistical Health Bulletins of the FCT. Also, reported mortality data show deaths from notifiable infectious diseases, and maternal and neonatal deaths, but do not show deaths from NCDs.^{13,14} Aggregated health records and reports in the FCT as presented in the available Statistical Bulletins for 2010 and 2011 did not capture data from private health facilities.^{13,14} At the time of conducting this study in 2013, the 2012 statistical health bulletin was yet to be published in the FCT. A quick review of records by active case search of outpatient registers in the visited PHC facilities did identify cases of hypertension and diabetes.

Table 3: Availability of basic and functional tools and equipment observed in 6 PHC facilities in FCT

TOOL/EQUIPMENT	Number of facilities observed	Number with tool sighted	Number with tool functional	Remarks
Sphygmomanometer	6	6	6	Available and functional in all assessed facilities
Stethoscope	6	6	6	Available and functional in all assessed facilities
Glucometer and strips	6	3	2	Only 2 facilities had functional glucometer, one has glucometer without strips
Urinalysis strips	6	6	6	Available and functional in all assessed facilities
Weighing scale (adult)	6	6	5	One facility had a damaged weighing scale
Stadiometer	6	6	6	Available and functional in all assessed facilities
Measurement tape	6	6	6	Available and functional in all assessed facilities
Mid Upper Arm Circumference Strips	6	6	6	Available and functional in all assessed facilities

Human Resources for Non-Communicable Diseases

In the FCT, the 2011 PHC equipment inventory and staff audit report indicates that only 15% of PHC facilities had the adequate number of staff in the right mix to deliver the minimum health care package and 40% had the staff strength and expertise to deliver community based services.²⁵ (Table 6 outlines the staff distribution by cadre).

The interviewed Medical Officers of Health complained of inadequate health workers to

offer 24 hour services in many PHC facilities. The 12 CHEWs who participated in the FGD understood that NCDs referred to non-transmissible diseases, but their knowledge of major risk factors for NCDs was not uniform and poor; only 3 of the 12 CHEWs listed tobacco smoking and sedentary life style as risk factors for hypertension and diabetes, respectively. One CHEW wanted explanation on how tobacco is a risk factor for hypertension. He said “*I need enlightenment on how smoking can cause hypertension since it goes into the lungs*”.

Table 4: WHO recommended essential equipment list for Cardiovascular Diseases (CVDs) and diabetes in PHC vs Nigeria's essential equipment list for PHC

WHO Recommended Basic Equipment for Diabetes and CVDs in PHC	Nigeria Essential Equipment List for PHC
Glucometer and strips	No
Thermometer	Yes
Stethoscope	Yes
Blood pressure measurement device	Yes
Measurement tape	Yes
Weighing machine	Yes
Urine protein test strips	No

Source: Adapted from WHO Package of Essential Non-Communicable Disease Interventions for Primary Health Care in Low-Resource Settings (2010) and National Primary Health Care Development Agency essential equipment list for PHC

Table 5: Comparison of WHO recommended essential medicine for primary care in low resource setting with Nigeria essential Medicines for Cardiovascular diseases (CVDs) and diabetes

Essential Medicines for CVDs/ Diabetes for Primary Care in low Resource Setting (WHO recommended)	Recommended in Secondary health Care (Essential Medicines List in Nigeria)	Recommended in PHC Facility (Essential medicines list in Nigeria)
Thiazide diuretic	Yes	No
Calcium channel blocker (Amlodipine)	Yes	No
Beta-blocker (atenolol)	Yes	No
Angiotensin inhibitor (Enalapril)	Yes (Lisinopril)	No
Statin (Simvastatin)	No	No
Insulin	Yes	No
Metformin	Yes	No
Glibenclamide	Yes	No
Isosorbide dinitrate	Yes	No
Aspirin	Yes	Yes (but not low dose for stroke prophylaxis in hypertensive)
Paracetamol	Yes	Yes
Methyldopa	Yes	No

Source: Adapted from WHO Package of Essential Non-communicable Disease Interventions for Primary Health Care in Low-Resource Settings (2010) and Nigeria Essential Medicines list (2010)

Although the CHEWs had a fair knowledge of the common symptoms and complications for hypertension and diabetes, majority of them had poor knowledge of the link between the four major risk factors with the four major NCD. There were regular and periodic in-service training activities for CHEWs and other PHC workers on immunisation and HIV/AIDS but similar training with regard to prevention and management of diabetes and

hypertension was lacking. However, detection of hypertension and diabetes in pregnant women attending antenatal clinic was incorporated in the training of midwives.^{28, 29}

Health Financing for Non-Communicable Diseases

Study participants described lack of specific funding for NCDs as being responsible for the rudimentary activities for NCDs. Funds were

released as an envelope for disease control activities, but spending is skewed in favour of communicable diseases as determined by chief executives of the responsible government

agencies. A key informant expressed his thoughts thus: *“We hope that the issue of enveloping funds is changed because some projects suffer.”*

Table 6: PHC staff distribution by cadre in FCT (number and adequacy)

Cadre	Number available	% of required
Doctors	17	32
Midwife	79	14
Nurse-Midwife (Double Qualified)	111	58
Nurse	45	24
Community Health Officer	60	88
Community Health Extension Worker	376	73
Junior Community Health Extension Worker	255	26
Pharmacist	4	29
Pharmaceutical Technician	10	25
Pharmacy Assistant	4	7
Laboratory Scientist	17	121
Laboratory Technician	19	48
Laboratory Assistant	4	7
Medical Recorder	25	46
Environmental Health Officer	1	7
Environmental Health Technician	2	4
Environmental Health Assistant	5	9
Nutritionist	2	14
Nutrition Assistant	0	0
Health Assistant	47	11
Health Attendant	130	30
Ambulance Driver	8	15
Security Men	127	29
Facility Maintenance Assistant	35	16

Source: FCT Primary Health Care Development Board inventory and staff audit report (2011)

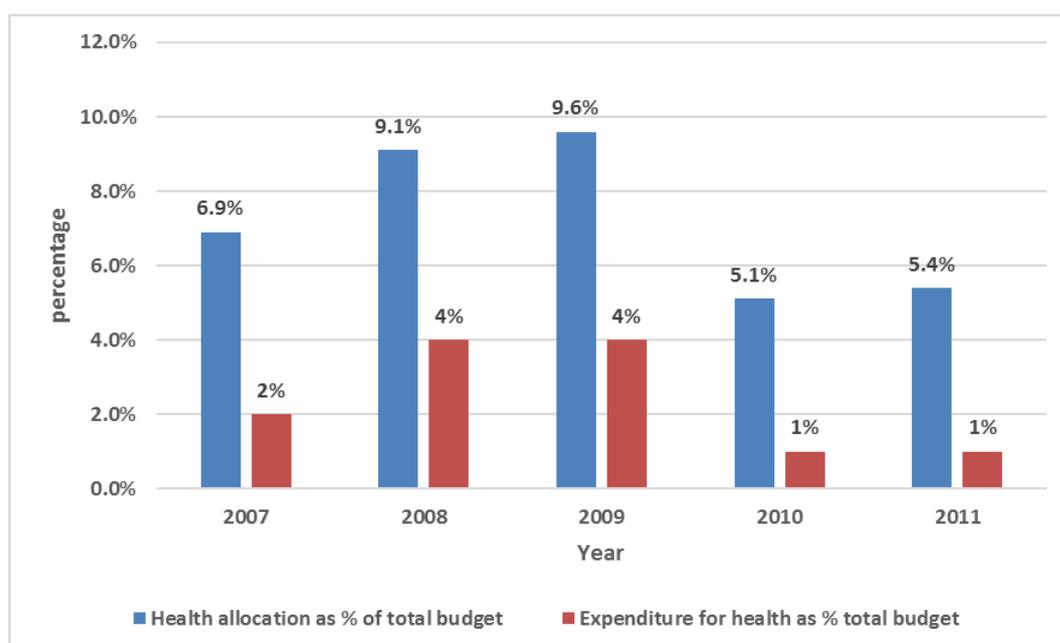


Figure 3: FCT Health allocation and expenditure on health as a percentage of the total approved government budget (Source: Adapted from FCT Statistical Health bulletin, 2011)

If we have a situation where budget is linked to particular programs and these funds are provided, it is easy to hold people accountable but enveloped funds may bring a situation where the person at the helm of affairs if biased for some programs may lead to other programs suffering."

Final decision on budgetary allocations in health were said to be determined by political office holders without recourse to disease burden. The allocation to health as a percentage of general government budgets in the FCT has been mostly less than 5% of which the highest percentage of actual funds released over a 5-year period is about 4% of general government budget indicating that lesser amount than budgeted is released for spending. This is depicted in Figure 3. In addition, curative services receive about 70% of total health expenditure while preventive services get less than 20%.³⁰ Only about 4% of Nigerians (mostly government employees) are enrolled in the National Health Insurance Scheme.^{31, 32}

Members of community health committees felt that health in general was not prioritised like other government departments; one community health committee member said: *"There is magistrate court everywhere, but to see Asibiti [hospital in Hausa language] is difficult"*. Community health committee members highlighted that most families affected by NCDs have challenges in meeting up with cost of chronic care in terms of investigations and drugs. They also emphasised travel inconveniences and expenses faced in accessing certain care at secondary and tertiary health facilities when such could be made available in the nearest PHC facilities. The FCT also funded a five years programmed mobile outreach initiative starting in 2009 called *Mailafiya* that delivered free integrated PHC services in selected hard to reach rural communities aimed at accelerating

achievements of Millennium Development Goals. The package of *Mailafiya* services included screening and referral for diabetes and hypertension.³³

Leadership for Non-Communicable Diseases

The PHC Development Board and Public Health Department of the FCT as well as the PHC Departments of the Area Councils have units responsible for disease control but all complained of poorly funded NCD programming. Within the Area Councils, community health committees form the basis for community engagement in PHC. Members of community health committees discussed with have attended several capacity-building workshops organised by government and non-government agencies on community mobilisation for PHC, the emphasis of such workshops have been on maternal and child health/immunisation with none so far on diabetes and hypertension. International NGOs support maternal and child health services but there is no specific capacity building activity for NCDs and none was acknowledged by study participants as being directly involved in NCDs outreach programme in the Federal Capital Territory.

Study participants described the referral coordination between primary care and/or secondary and tertiary care as very weak. A cardiologist at a Teaching Hospital explained thus: *"We get a lot of patients directly from the PHC facilities without passing through the general hospitals (secondary care facilities). We also have patients who come straight to the tertiary hospitals"*. The key informants interviewed were of the view that the PHC facilities can do a lot more if coordination and leadership of NCDs efforts in the FCT was stronger. They emphasised the need for secondary and tertiary health facilities to directly support PHC facilities in the care and treatment for NCDs, especially in performing their gate

keeping functions. A key informant explained that *“There is also lack of collaboration between primary care and secondary care. If you visit the general hospitals, you may find materials that can be shared with PHC facilities. Skills there can also be made available to build capacity at PHC facilities”*.

DISCUSSION

Despite the burden of NCDs in FCT and the policies/guidelines in place, the implementation of these policies is weak. Implementation shortfalls include insufficient recognition of the burden of disease at the Area Councils, the consequent low prioritisation of NCDs in primary care services, poor resourcing of NCD related activities and poor operationalisation of the national guidelines. Further, health system constraints for implementation include inadequate human resource for PHC services in numbers and mix of cadres, deficiencies in knowledge on management of diabetes and hypertension by PHC workers, insufficient job aids in PHC facilities for the early detection, management and prompt referral of hypertension and diabetes, weak information systems for NCDs, and weak referral linkages between PHC and secondary/tertiary health care. These constraints also point to overall weak capacity of the PHC system to implement interventions for NCDs. In addition, poor coverage of the health insurance scheme and of NCD care within the scheme limits financial access to needed services and care, thus majority of Nigerians access health care by out of pocket payments.^{24, 32}

The systems constraints and shortfalls for NCDs would suggest that cases are either misdiagnosed and/or mismanaged. The weak system for reporting NCDs as a result of the inequitable prioritisation of communicable diseases implies that the reported burden of

NCDs in FCT may be a tip of the iceberg particularly as the data from the private health providers was not captured in this study and are also not computed in the available statistical health bulletins for the FCT. This is particularly important to note given that private health facility constitute the majority of health facilities in FCT¹³ The Area Councils directly responsible for PHC services have shown little interest and have invested little in supporting NCDs prevention interventions.

Service delivery at PHC facilities is also expected to focus on health promotion using IEC (primary prevention) and through basic screening tests (secondary prevention) as proposed in the Minimum Health Care Package. PHC facilities are expected to display IEC materials as well as conduct community awareness campaigns and outreach services for NCDs. The absence of NCDs related IECs despite the abundance of infectious disease related IECs points to inequity in funding and implementation for NCDs prevention and control. The exclusion of drugs for hypertension and diabetes from the essential medicines list for PHC facilities we noted conflicts with the expected benefit package of the National Health Insurance Scheme and the WHO recommendation for drugs in primary care. While the National Health Insurance Scheme guarantees access to the minimum health care package inclusive of screening and treatment of hypertension and diabetes,²⁴ the cost of drugs for diabetes and hypertension are not adequately covered at the PHC facilities due to restrictions on services that can be offered in PHC facilities.^{5,24,27} Though CHEWs are not authorised to prescribe antihypertensive and antidiabetics, the practice of prescribing and dispensing antihypertensive by some CHEWs points to an unmet need at the primary care level. Similarly, glucometer is not captured on the list of essential equipment for PHC in Nigeria,

but guidelines for implementing NCDs prevention stipulates that CHEWs and other frontline PHC workers should measure blood sugar for monitoring patients with diabetes as well as for making diagnosis in the previously undiagnosed.⁵ These inconsistencies in policies and guidelines underscore the need for conscious regulation, training and supervision of the frontline workforce in basic management of hypertension, diabetes and other NCDs based on global recommendations in resource poor settings. The gap in health facility coverage coupled with the inadequacy in staff number and mix further stifles access to already limited NCDs services.

The FCT administration and federal agencies responsible for supporting local governments to implement the minimum health care package have not sufficiently given the needed attention to the NCD component of the package, and effective coordination for NCD prevention and care is missing. The vision for the National Health Plan in Nigeria includes “reversing the increasing prevalence of NCDs.”²² But strategies to achieve this are not explicitly stated in health plans at the National and sub-national level where PHC is implemented.^{22, 23}

There is also weak leadership on reducing the risk factors for NCDs. In 2010, at least 10 of 15 risk factors for the major disease burden in Nigeria were contributory to NCDs. Some these include alcohol, tobacco, hypertension, high blood sugar, obesity and under-nutrition;³⁴ 10% of Nigerian males use tobacco. While Nigeria is signatory to the WHO Framework Convention on Tobacco Control, tobacco products was regulated in Nigeria by a 1990 act described as out-dated ^{35, 36} until 2015 when a new tobacco act was signed into law.³⁷ Alcohol consumption lifetime prevalence in Nigeria is estimated to be about 20% in some states,³⁸ but the alcohol control

regulation has challenges similar to tobacco in terms of appropriateness and enforcement of existing laws. There is also inconsistency and inadequacies in promoting physical fitness activities in communities. The lack of interventions to reduce exposure to risk factors for hypertension, diabetes and other NCDs implies that the incidence and burden of NCDs will continue to increase.

The NCDs units at the Area Councils may be strengthened by repositioning and funding the sub-national coordinating structures. A well-positioned coordinating mechanism may ensure that various policies related to NCDs prevention through the PHC system do not result in implementation conflicts. Funding for prevention and care of NCDs through the PHC system is inadequate. Contributory to this inadequacy is the preferential allocation of funds for curative care at secondary and tertiary health facilities. Communicable diseases and maternal and child health receive better attention with little attention to NCDs preventive interventions within the PHC system. However, there may be opportunities for NCDs services integration in existing maternal and child health services as well as communicable disease programs.

For example, screening and raising awareness for diabetes and hypertension can take place during couple counselling and testing for HIV to prevent mother to child transmission.³⁹ Midwives can also extend the diabetes and hypertension screening services given to antenatal women to their partners and relatives. Physicians in secondary and tertiary care may periodically see patients within the PHC system in PHC centres. Such physician visit is also an opportunity to give supportive supervision and improve skills of CHEWs and other PHCs staff on NCDs primary care services. Further, capacity - building workshops for community health committees may include messaging on NCDs in addition

to the regular focus on immunisation and maternal and child health and the committees may also be actively involved in the development and dissemination of IEC materials which incorporate messages on both communicable and non-communicable diseases. In addition, surveillance for risk factors, determinants, trends in exposure and outcomes are crucial in the design of NCDs interventions⁴⁰ and can be integrated into those of better established systems for communicable diseases in the PHC system.

Our findings and recommendations are consistent with the situation and strategies in other countries in sub-Saharan Africa. For example, frontline non-physician health workers offering PHC services in South Africa have been given additional specific training to see and review case of NCDs on specific days in a week. They have standard guidelines to aid diagnosis, treatment and referral of hypertension and diabetes.⁴¹ Likewise, Mozambique integrated basic services for NCDs with HIV/AIDS by incorporating information on diabetes and hypertension in the training manuals for health workers in the HIV/AIDS programs and developing job aids and toolkits that incorporate NCDs.⁴²

However, our findings may not apply in other settings and the study is limited by having some participants in the group discussions with community health committee members who could not understand English language. While the research assistants were fluent in the local Nigerian languages of the study area, and were able to translate to English, this process may have introduced bias or loss of important information. In addition, the exploratory component of the study was limited to only the FCT and few health facilities due to constraints on time and other resources. Our findings would have been richer if we had extended the study to other states in Nigeria and if we had included the views of politicians

and of patients with diabetes and hypertension. Researchers should take these limitations into account while designing future studies, especially given the need for research to bridge the gap of unmet needs for prevention and care of NCDs in Nigeria.⁴³

There is a need for the national and sub-national governments in Nigeria to invest in NCDs research, particularly on integrating NCDs with existing services, referral linkage mechanisms, providing NCDs job aids for the PHC workforce, providing training to acquire the right skills and providing appropriate infrastructure with appropriate technical and administrative support structures, systems and roles for effective coordination and integration. Such capacity building specific for NCDs will ensure that NCDs prevention and control services are part of the essential health package implementation to achieve universal health coverage in Nigeria.

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Conflict of Interest Declaration

The authors declare that there is no conflict of interest.

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