

Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of Primary Health Care in the Federal Capital Territory

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Nigeria

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Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of Primary Health Care in the Federal Capital Territory

A thesis submitted in partial fulfilment of the requirement for the degree of Master of Public Health.

By

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Declaration:

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The thesis titled, "**Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of Primary Health Care in the Federal Capital Territory**", is my own work.

Signature:..... 

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“The tide is high, the sea is rough, but the treasures must be found”.

List of Acronyms

ACs	Area Council(s)
AIDS	Acquired Immune Deficiency Syndrome
BP	Blood Pressure
CDs	Communicable Diseases
CHCs	Comprehensive Health Centre(s)
CVDs	Cardiovascular Diseases
EHP	Essential Health Package
EML	Essential Medicines List
FCT	Federal Capital Territory
FGDs	Focus Group Discussion(s)
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IEC	Information Education and Communication
KIT	Royal Tropical Institute
LGs	Local Government Council(s)
LMIC	Low and Middle Income Countries
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MSS	Midwives Service Scheme
NAFDAC	National Agency for Food and Drug Administration and Control
NCDs	Non- Communicable Disease(s)
NDHS	National Demographic and Health Survey
NPHCDA	National Primary Health Care Development Agency

OOP	Out of Pocket Expenditure/Payments
PEN	Package of Essential Non-Communicable Disease Interventions
PHC	Primary Health Care
PHCCs	Primary Health Care Centre(s)
PHCDB	FCT Primary Health Care Development Board
PHD	FCT Public Health Department
SCD	Sickle Cell Disease
SSA	Sub-Sahara Africa
TB	Tuberculosis
THE	Total Health Expenditure
UATH	University of Abuja Teaching Hospital
UHC	Universal Health Coverage
WHA	World Health Assembly
WHO	World Health Organisation
WMHCP	Ward Minimum Health Care Package

Glossary of terms

Diabetes^{*} - is a chronic disease, which occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces. This leads to an increased concentration of glucose in the blood (hyperglycaemia).

Type 1 diabetes^{*} (previously known as insulin-dependent or childhood-onset diabetes) is characterised by a lack of insulin production.

Type 2 diabetes^{*} (formerly called non-insulin-dependent or adult-onset diabetes) is caused by the body's ineffective use of insulin. It often results from excess body weight and physical inactivity.

Gestational diabetes^{*} is hyperglycaemia that is first recognised during pregnancy.

Cardiovascular disease[†] - is caused by disorders of the heart and blood vessels, and includes coronary heart disease (heart attacks), cerebrovascular disease (stroke), raised blood pressure (hypertension), peripheral artery disease, rheumatic heart disease, congenital heart disease and heart failure. The major causes of cardiovascular disease are tobacco use, physical inactivity, an unhealthy diet and harmful use of alcohol.

Hypertension[†] - is also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure. Blood is carried from the heart to all parts of the body in the vessels. Each time the heart beats, it pumps blood into the vessels. Blood pressure is created by the force of blood pushing against the walls of blood vessels (arteries) as it is pumped by the heart. The higher the pressure the harder the heart has to pump.

Normal adult Blood Pressure (BP) is defined as a BP of 120 mm Hg when the heart beats (systolic) and a BP of 80 mm Hg when the heart relaxes (diastolic). When systolic BP is equal to or above 140 mm Hg and/or a diastolic BP equal to or above 90 mm Hg the BP is considered to be raised or high.

Primary care[‡]: often used interchangeably with first level of care. (i) the part of a health services system that assures person focused care over time to a defined population, accessibility to facilitate receipt of care when it is first needed, comprehensiveness of care in the sense that only rare or unusual manifestations of ill health are referred elsewhere, and coordination of care such that all facets of care (wherever received) are integrated. Quality features of primary care include effectiveness, safety, people-centredness, comprehensiveness, continuity and integration.

^{*} WHO health topics. Diabetes available from: http://www.who.int/topics/diabetes_mellitus/en/

[†] WHO health topics. Cardiovascular diseases available from: http://www.who.int/topics/cardiovascular_diseases/en/

[‡] WHO Health Systems Strengthening Glossary at http://www.who.int/healthsystems/hss_glossary/en/index8.html#7

Primary Health Care Based Health System[‡]: health system organised and operated so as to make the right to the highest attainable level of health the main goal while maximising the equity and solidarity. A PHC-based health system is composed of a core set of structural and functional elements that guarantee universal coverage and access to services that are acceptable to the population and that are equity-enhancing. It provides comprehensive, integrated and appropriate care over time, emphasises prevention, promotion, and first contact primary care as well as intersectoral actions to address other determinants of health and equity.

Referral[§]: can be defined as a process in which a health worker at a one level of the health system, having insufficient resources (drugs, equipment, skills) to manage a clinical condition, seeks the assistance of a better or differently resourced facility at the same or higher level to assist in, or take over the management of, the client's case.

Capacity building^{††}:** An approach to the development of sustainable skills, organisational structures, resources and commitment to health improvement, to prolong and multiply health gains many times over. It encompasses the iterative interdependence of tools, skills, staff, infrastructure, structures, systems and roles.

Epidemiological Transition and Double burden: A situation where developing countries previously overburdened by infectious diseases are now also experiencing the challenges of non-communicable diseases. It is also applied to the situation where countries with high levels of under nutrition equally have a high level of obesity.

Lifestyle^{‡‡}: someone's way of living; the things that a person or particular group of people usually do. A **healthy lifestyle** is usually regarded to be free of tobacco consumption, alcohol abuse, drug abuse, unhealthy diet and physical inactivity as well as a state of physical, mental and emotional wellbeing.

[§] WHO Management of health facilities: Referral systems available from: <http://www.who.int/management/facility/referral/en/>

^{**}Have et al(1999) as cited by NSW (2001)A Framework for Building Capacity to Improve Health available from: http://www0.health.nsw.gov.au/pubs/2001/pdf/framework_improve.pdf

^{††} Potter, C., & Brough, R. (2004). Systemic capacity building: a hierarchy of needs. *Health Policy and Planning*, 19(5), 336–345.

^{‡‡} Definition of lifestyle noun from the Cambridge Advanced Learner's Dictionary & Thesaurus © Cambridge University Press available from: <http://dictionary.cambridge.org/dictionary/british/lifestyles>

Prevention^{§§}:

Primary Prevention^{§§}: Seeks to prevent a disease or condition at a pre-pathologic state; to stop something from ever happening.

Examples: Health Promotion, health education, marriage counselling, genetic screening, good standard of nutrition adjusted to developmental phase of life, Specific Protection, use of specific immunization, attention to personal hygiene, use of environmental sanitation, protection against occupational hazards, protection from accidents, use of specific nutrients, protections from carcinogens, avoidance to allergens.

Secondary Prevention^{§§}: Also known as "Health Maintenance". Seeks to identify specific illnesses or conditions at an early stage with prompt intervention to prevent or limit disability; to prevent catastrophic effects that could occur if proper attention and treatment are not provided.

Examples: Early Diagnosis and Prompt Treatment, case finding measures, individual and mass screening survey, prevent spread of communicable, disease prevent complication and sequelae shorten period of disability, disability Limitations, adequate treatment to arrest disease process and prevent further complication and sequelae, provision of facilities to limit disability and prevent death.

Tertiary Prevention^{§§}: Occurs after a disease or disability has occurred and the recovery process has begun; Intent is to halt the disease or injury process and assist the person in obtaining an optimal health status to establish a high-level wellness, to maximize use of remaining capacities.

Examples: Restoration and Rehabilitation, work therapy in hospital.

Information, Education and Communication (IEC)^{*}**: IEC can be defined as an approach which attempts to change or reinforce a set of behaviours in a "target audience" regarding a specific problem. It is multidisciplinary and client-centred in its approach. IEC strategies involve planning, implementation, monitoring and evaluation. When carefully carried out, health communication strategies help to foster positive health practices individually and institutionally, and can contribute to sustainable change toward healthy behaviour.

^{§§} Leavell and Clark's Three Levels of Prevention as cited by Complete Nursing Notes and Community available from: <http://www.rnpedia.com/home/notes/fundamentals-of-nursing-notes/leavell-and-clark-s-three-levels-of-prevention>

^{***} WHO. (2001). information, education and communication: lessons from the past; perspectives for the future. Available from: http://whqlibdoc.who.int/hq/2001/WHO_RHR_01.22.pdf

Abstract

Abuja, the Federal Capital Territory of Nigeria is not exempted from the double burden of communicable and Non-Communicable Diseases (NCDs) plaguing low and middle income countries. This is associated with globalisation. Diabetes and Hypertension are NCDs that are remarkably on the increase in Abuja.

The essential Health Package of Nigeria recommends interventions for the prevention of NCDs through the Primary Health Care Approach. The Abuja Strategic Health Development Plan has however not explicitly included these interventions in its framework.

A qualitative research comprising of an exploratory component and a literature review explored the factors which determine the implementation of NCDs prevention policies and plans in Nigeria's Essential Health Package through Primary Health Care in Abuja.

Findings reveal that frontline health workers are not adequately equipped to deliver primary care and community services with respect to NCDs prevention. Supportive supervision and surveillance for NCDs are neglected as communicable diseases are better prioritised. There is a weak coordinating platform for the implementation of NCDs prevention plans due to inadequate funds allocation for NCDs prevention by government. Referral linkages are weak and existing opportunities to integrate services have not been exploited.

There is need to strengthen coordination and partnership for a better response to NCDs prevention at primary care level. Capacity building specific to NCDs prevention should involve tools, technology, skills, infrastructure, manpower, referral linkages and community participation. Resource mobilisation and allocation for NCDs prevention should be deliberate and consistent. Goals, targets and indicators should be developed to promote accountability, surveillance and research for NCDs in Abuja.

Key words: Non-Communicable Diseases, Abuja, Nigeria, Essential Health Package, Primary Health Care, Diabetes and Hypertension.

Word Count: 12,874

Introduction

Globalisation has produced a lot of gains for low and medium income countries (LMIC) in the areas of industrialisation and urbanisation^{1,2}. There are however accompanying challenges which include, lifestyle and diet change, environmental hazards and health consequences^{1,2}. An increase in the burden of Non-Communicable Diseases (NCDs) is one of the negative health consequences of industrialisation and urbanisation^{3,4}.

NCDs constitute group of diseases that are non-infectious and cannot be transmitted from one person to another. Many of these diseases also have a chronic course and insidious onset^{4,5}.

Cardiovascular Diseases (CVD), diabetes, cancers and chronic lung diseases are regarded as the major NCDs accounting for a high percentage of the global burden of NCDs. They were responsible for at least 63% of global mortality in 2008 with at least 80% of global deaths from NCDs occurring in LMIC currently⁶. This group of diseases share some common risk factors and now cut across global boundaries. These common risk factors are alcohol abuse, tobacco use, physical inactivity and unhealthy diet⁷. The rate of deaths from NCDs is expected to surpass by more than four folds that of infectious diseases, nutritional deficiencies, perinatal and maternal conditions in less than ten years⁸. Infectious diseases like malaria and Human Immunodeficiency Virus (HIV) still rank among the highest burden of disease in Sub-Sahara Africa (SSA), but the rate of increase of NCDs and their risk factors is such that NCDs will soon surpass communicable diseases (CDs) as major disease burden in SSA⁶.

NCDs were previously thought to be problems for the industrialised nations and the society's rich, but now becoming evidently a major epidemic in LMIC of SSA and the society's poor that are already plagued by numerous infectious diseases. There is thus a 'double burden' for these countries and the economically disadvantaged persons like in Nigeria^{9,10}. This phenomenon which has been described as 'epidemiological transition' only got the attention of the international community for concerted priority actions within the last 15 years^{5,11}.

The trends of risk factors for NCDs in Nigeria have been on a steady increase in the last 5 years¹² particularly hypertension which is the commonest risk factor for CVDs like coronary heart disease and stroke. Type 2 diabetes is responsible for up to 95% of diabetes cases in SSA¹³ and it is also a risk factor for CVDs¹⁴. Hypertension and type-2 diabetes are commonly identifiable in Nigeria with risk factors linked to modifiable cultural and behavioural patterns¹⁵.

Hypertension and diabetes will be the focus of this thesis. Both currently rank among the top five leading cause of death in the Federal Capital Territory of Nigeria¹⁶.

The modifiable cultural and behavioural risk factors can be tackled with a Primary Health Care (PHC) system that provides an essential health package which is equitably inclusive for all members of the community and provides for primary, secondary and tertiary preventive measures for the major health burden of the society.

Global actions are currently being encouraged to focus on these common risk factors of tobacco use especially cigarette smoking, harmful and dangerous use of alcoholic beverages, unhealthy diet containing high calorie contents in form of sugars and saturated fats as well as high salt intake. Reduction of these risk factors has been clearly demonstrated as a way to prevent the major NCDs^{6,17}.

Many other diseases and conditions are classified as NCDs and their prevalence may vary from country to country. Injuries from road traffic accidents, violence, mental disorders and genetic conditions like sickle cell disease (SCD) are some NCDs that are quite significant depending on the region and country^{7,18}. These other NCDs will not be part of this study because they are not largely dependent on behavioural risk factors as is the case for diabetes and CVDs.

Before proceeding to the Royal Tropical Institute (KIT) for a Master degree of Public Health, I had worked as a medical officer for about 4 years in Kuje Area Council, which is one of the local governments in the Federal Capital Territory of Nigeria. I had the designation of an assistant PHC coordinator for disease control and was involved in implementation and coordination of disease control programs within the local government, under the direct supervision of the PHC coordinator/Head of Department of Health. I was also engaged in outpatient clinical consultations in static Primary Health Care Centres (PHCCs) and outreach posts within this period. I developed a keen interest in NCDs based on my few years' experience in disease control at the PHC level. Community outreaches and health education was an essential part of my engagements. The challenges faced in tackling NCDs having been part of implementing different infectious disease programs in the absence of obvious support for NCDs was thus worrisome. I believe that conducting a research to explore the possible policy and implementation gaps at the first level of health care in the Federal Capital Territory of Nigeria will provide more objective insights.

This thesis is organised in 5 chapters. Chapter 1 gives a background of the study area with emphasis on the social, demographic and political structures. It also gives an overview of the organisation of the health

system. Chapter 2 presents the problem analysis and justification for the thesis. The objectives of the research product and methodology used are also presented here along with the conceptual framework adapted for the study. The conceptual framework is an adaptation of the WHO's conceptual framework for the implementation of Package of Essential Non-communicable Disease Interventions for Primary Health Care in Low-Resource Settings.

In chapters 3, the primary research findings are presented using the conceptual framework as a guide. Discussions in chapter 4 on the findings are enriched with relevant literature and documentary findings to arrive at some conclusions that are then presented in chapter 5. Recommendations are also given in chapter 5. The references and annexes come afterwards.

Chapter 1: Background of study area

1.1 Demographic and socio-political structure of Nigeria with focus on the Federal Capital Territory

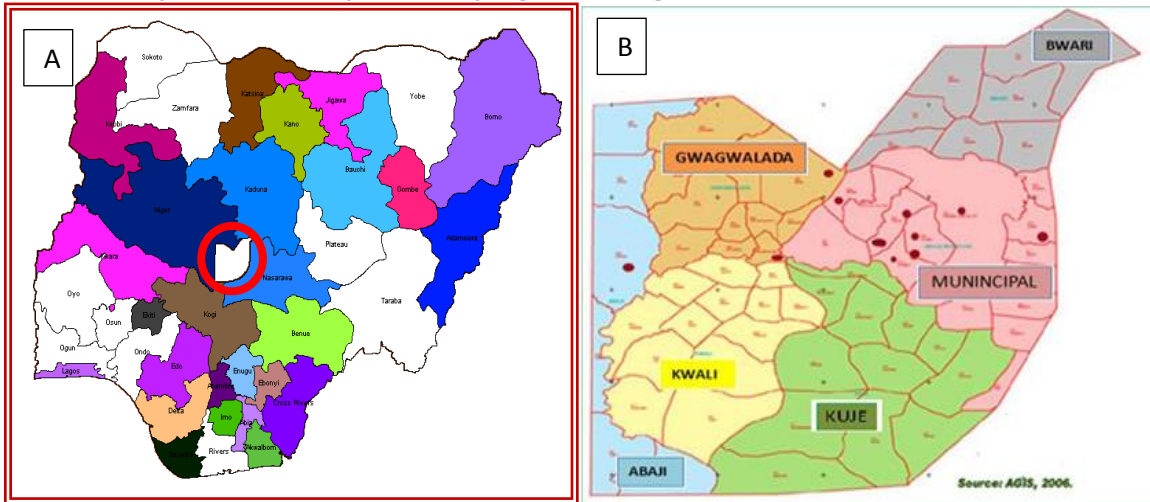
Nigeria, a lower middle income country has a population estimate of about 168 million being the most populous African country and 7th in the world with approximately equal male to female distribution^{19,20,21}. It has 36 states and a Federal Capital Territory (FCT) grouped into six geo-political zones²⁰. There is the rapid urbanisation of many towns with Lagos, Onitsha and the FCT already becoming Mega cities^{22,23,24,25}. Nigeria is in the West African sub region which is part of sub Saharan Africa²⁰. Literacy averages 60%²⁰ while 68% of the population has an income below one dollar a day²⁶ and at least 50% of the population still lives in the rural areas²⁷.

The FCT of Nigeria became operational as the seat of government in 1991^{28,29}. The territory which is centrally located in the north central geo-political zone, experiences massive influx from every corner of the country in search of better job opportunities in the capital ^{25,30}(figure-1A-Map).

FCT has a population of about 2 million and a density of 229/km² with a growth rate of at least 9% annually almost 3 times the national average^{19,31}. FCT has a high concentration of upper middle and high class government civil servants and private sector entrepreneurs and employees in the fairly developed central part more commonly referred to as Abuja²⁹. For the purpose of simplicity in this thesis, Abuja will also refer to the FCT. It is also the place of abode of national political office holders and members of the diplomatic corp. Abuja is very popular for its numerous recreational parks and gardens³². It is a heterogeneous territory having inhabitants from the over 250 ethnic groupings of the country with a large number of inhabitants in very rural, remote and poorly developed settlements and numerous urban slums within the city^{33,34}. Abuja comprises of six local government councils(LGs) known as Area Councils (ACs) with the Abuja Municipal AC as the most urbanised of the six ACs as it hosts most government buildings, high class hotels, highbrow settlements and a higher concentration of infrastructural development^{22,32}. Abaji AC is the least urbanised and farthest from the economic and social hub in Abuja Municipal AC (figure-1B). The other ACs are Kuje, Bwari, Gwagwalada and Kwali³⁵. The indigenous inhabitants include Gbagyi, Gwandara, Gade, Bassa, Ganagana, Nupe Igbirra, Koro, Hausa and Fulani. They are mainly subsistence farmers and the dominant religions are Christianity, Islam and African Traditional religions³⁵.

Each AC is divided into 10 political wards except Abuja Municipal AC which has an additional 2, bringing a total of 62 wards in Abuja²⁸.

Figure 1: A- Map of Nigeria showing the Federal Capital Territory (in circle)
 B- Map of the Federal Capital Territory, Nigeria, Showing the Six Area Councils.



Source: A-FCT Strategic Health Development Plan (2010). B- Abuja Geographical Information Service (2006)

1.2 Health system and services organisation:

Nigeria's health policy in 2004 structured the Nigeria health system into three levels. The Primary Health Care (PHC) level is the first and entry level for the health system³⁶. It is responsible for delivery essential and primary care to every community while coordinating referrals to secondary and tertiary levels of health care. It also serves as the coordinating platform for the incorporation of the non-formal health sector and outreach services^{3,36}. The second level comprise of hospitals more commonly known as General Hospitals (GH) that are mandated to provide first referral services from the PHC level and specialised services. The third and highest level of care are the Teaching and Specialist Hospitals that should focus on research, training and highly specialised care^{36,37}. Ownership and funding of the first, second and third levels are the responsibilities of the local, state and federal governments respectively^{3,36}.

The PHC level has 3 major categories of primary care facilities namely the health post, the primary health clinic and Primary Health Care Centre (PHCC). The PHCC is the hub for the other categories of primary care facilities having the capacity to coordinate service delivery at the ward level to a population of about 10,000 – 20,000 persons³. A fourth category of primary care facility is often encountered and referred to as a Comprehensive Health Centre (CHC). It is usually a PHCC upgraded to offer basic surgical and emergency obstetric care with the services of medical doctors³. However, all categories of primary care facilities are commonly referred to as PHCCs.

The wards which constitute the ACs are the smallest political units of the country²⁸. A ward health system was developed in 2004 to Reach Every Ward (REW) with health interventions through PHC by adaptation of the World Health Organisation (WHO) and United Nations Children's Fund reach every district strategy for scaling up immunisation coverage^{3,38}. Community participation and ownership was to be achieved through formation of Ward Development Committees (WDC)³.

The National Primary Health Care Development Agency (NPHCDA) is a parastatal of the Nigeria Ministry of Health empowered to formulate policies and guidelines for regulation and coordination of PHC programs nationwide³.

In 2010, Abuja Administration established the FCT Primary Health Care Development Board (PHCDB) to be responsible for coordinating PHC activities in Abuja. This was predicated on the recommendations of the national health policy and the proposed 2008 national health bill for the establishment of state level agencies to oversee and coordinate PHC activities as well as to provide additional funding support to ACs^{31, 37}.

As at 2011, there were 216 public (government owned) PHCCs in Abuja spread across the six ACs, 15 GHs and 2 tertiary hospitals³¹.

There are numerous private for profit and private not for profit hospitals, clinics and outlets offering various levels of healthcare services which complement the public services³⁹. These private providers are important in healthcare services delivery in Nigeria and may account for about 50% of primary care services though they are largely unregulated, unregistered and amorphous^{40,41}. This thesis focuses on the public sector health system which has the prime responsibility for the organisation and delivery of preventive health services which it frequently does in partnership with the private³⁹.

Community Health Extension Workers (CHEWs) makes up almost 50% of the PHC workforce in Abuja³¹ and have specific roles and responsibilities stipulated in a standing order produced by the NPHCDA that serves as a guide for their activities⁴². They belong to a group of cadre known as community health practitioners comprising Junior CHEWs (2years of training) who hold a pre-CHEW qualification that empowers them to offer mainly community based services, CHEWs (3years of training) and Community Health Officers (CHOs) with 4years of training who are essentially CHEWs with additional training that empowers them with some administrative skills to function in team leadership capacity amongst the group of community health practitioners and as heads of PHCCs^{42,43,44}.

The role of WDCs in collaborating with the PHC workforce to implement community centred health programs is largely dependent on how they are engaged in policy making and priority setting³. Roles of the WDC include but

not limited to identification of social needs of the community, supervising the implementation of development work plans, community mobilisation for health actions and providing feedback to the community on health and development activities. They are also to liaise with government and Non-Governmental Organisations (NGOs) in finding solutions to health and social problems³. Composition of the WDC should include representatives from each village that make up the ward and co-opted members such as the secondary and primary school heads, agricultural extension worker, electricity and water works staff and NGOs where applicable. At least 20% are expected to be women who will be allotted key positions in the committee³.

Abuja also has a Public Health Department (PHD) that designs, implement and coordinates population based health activities in the territory in collaboration with health agencies and departments across the different levels of government⁴⁵.

1.3 The Ward Minimum Health Care Package and NCDs:

According to the WHO, "An Essential Health Package (EHP) in a low-income country consists of a limited list of public health and clinical services which will be provided at primary level". EHPs provide a guaranteed minimum of health services⁴⁶.

A Ward Minimum Health Care package (WMHCP) developed in 2007 was a 5year strategy developed by the NPHCDA aimed at providing a minimum EHP for Nigerians at the ward level with 6 key interventions⁴⁷:

1. Control of Communicable Diseases [Malaria, Sexually Transmitted Infections/HIV/Acquired Immune Deficiency Syndrome(AIDS), and Tuberculosis (TB)]
2. Child survival
3. Maternal and New-born Care
4. Nutrition
5. **Non-Communicable Disease Prevention**
6. Health Education and Community Mobilisation.

The WMHCP proposed the following for the prevention of NCDs at the PHC level:

1. Phased capacity building of health workers for prevention and control of NCDs in all PHCCs.
2. Availability of Information Education and Communication (IEC) materials on NCDs displayed in all PHCCs.

3. Provision of basic equipment for screening and early diagnosis of NCDs (Sphygmomanometer, stethoscope, weighing scale, stadiometer, urine test kits etc.)

Health promotion which is a key component of the WMHCP is expected to complement primary prevention activities of other components of the WMHCP including that for NCDs prevention.

The wards serve as the basic unit of the REW strategy and the planning and delivery of an EHP to communities as outlined in the WMHCP³.

A National health Insurance Scheme (NHIS) became operational in 2005⁴⁸ with the mandate to provide affordable access to health for Nigerians using different prepayment plans. Government employees resident in Abuja can through this scheme have access to basic health services similar to the WMHCP for themselves, their spouse and 4 dependents under the age of 18years.

Chapter 2: Problem Analysis, Justification, Objectives and Methodology

2.1 Problem analysis:

Trends show increasing prevalence in Nigeria of hypertension, coronary heart disease, diabetes, smoking related diseases and other NCDs. At least 27% of deaths in Nigeria are currently caused by NCDs⁴⁹.

Diabetes and hypertension are reported to be among the 5 top NCDs cause of death in Abuja for 2010 and 2011 in the FCT statistical health bulletins^{29,50}. A review of the 2006 records of 4 GHs in Abuja by the PHD revealed hypertension and diabetes ranking as the highest burden among other NCDs. It also noted that NCDs as a group were only next to malaria as a major disease burden in the hospitals⁵¹.

The national level WMHCP prioritises the prevention of NCDs as one of its component in the quest to deliver an EHP for the period 2008–2012 through the PHC approach⁴⁷. An FCT Strategic Health Development Plan (SHDP) for 2010–2015 was developed in 2010 following the National strategic Health Development Plan (NSHDP) for 2010–2015^{52,53} and focused on certain priorities from the WMHCP. Both the NSHDP and SHDP did not clearly outline interventions for NCDs. The SHDP did not make provision for NCDs in its implementation plan for an EHP in Abuja for the period 2010 -2015, whereas plans are outlined for TB, HIV, Malaria and Maternal and Child health (MCH) services. Specifically, the SHDP framework has as its goal 2, to ensure universal access to an EHP, it further stated as one of its objectives to strengthen Communicable Diseases (CDs) and NCD programs, but the activities and indicators listed were all CDs oriented⁵². ACs plans follow the provisions of the SHDP and neglect the implementation of the NCDs component of the WMHCP⁵⁴. Abuja SHDP framework has as one of its goals to increase demand for health services and listed community mobilisation to promote healthy lifestyle as one of the activities, but the indicator for this was Antenatal Care (ANC) services. Community participation for immunisation, HIV, and TB services are also well-articulated in the SHDP framework, it is therefore not obvious if community participation and demand for NCDs prevention services like screening for early detection is inclusive⁵².

Evidence from services records and personal experience reveals that hypertension and diabetes are recognised and managed by frontline health workers at PHCCs in Abuja. They are usually captured in the data summary sheets from PHCCs and labelled as other diseases, which are mostly non-

infectious and accounts for almost 30% of the total disease burden from the PHCCs^{52,55}.

Evidence also show that more attention is given to secondary and tertiary curative services in terms of funding with about 70% of Total Health Expenditure (THE) allocated to curative services across states in the country and less than 20% of THE for preventive services⁵⁶. Though these allocations do not show how much is directly allocated for NCDs curative services at secondary level, but hospital records for 2005-2008 reviewed retrospectively for GHs revealed that hypertension is among the top 5 leading cause of death in people age 15years and above in Abuja¹⁶. The Nigerian Academy of Science in a 2008 workshop suggested that funding for PHC is poor and the referral linkage between primary level facilities and the higher levels is very weak⁵⁷.

The above indicate there is a major unmet need for the prevention of NCDs in Abuja as a result of the non-inclusion of specific NCDs prevention activities in the strategic plans across the different levels of government. In addition, the primary care and community services offered by CHEWs and other frontline health workers may not be consistent with the expectations of the WMHCP earlier outlined in chapter one. The role of WDCs in lending support to CHEWs and other PHC workforce for community centred services may also not be functional.

There are evidences indicating prevention interventions are more cost effective in addressing the burden of diabetes, hypertension and other NCDs when compared with curative and rehabilitative services^{10,17}(annexes I,J, K,L). It is therefore imperative to explore factors that influence the implementation of the NCDs prevention component of the WMHCP and the extent to which it has been implemented in spite of a lack of specific action plan. It is also important to explore the knowledge, views and practices of CHEWs and WDCs in order to determine the extent to which they are consistent with the provisions of the WMHCP.

2.2 Justification for this research

NCDs in Abuja's health plans: The SHDP Acknowledges that health systems research in the territory is not well developed⁵². Accessible data for research on NCDs in Abuja is hard to come across especially as it concerns the WMHCP. Research needs for NCDs in LMIC especially in Africa is still huge and needs some urgent and serious attention⁵⁸. Disease control priority attention in Abuja is for CDs like AIDS, TB and malaria in line with National and development partners' focus. Though the facts show that these CDs are the highest disease burden for Abuja and the country, the need for incorporating and integrating NCDs control strategies has become very

important with the evidence of current trends and the projections for the not too distant future^{29,50}.

Relevance of this study in Abuja to Nigeria: Abuja is the capital of Nigeria and its diversity gives a picture of the country. It also serves as a model for most states in the country hence research findings in Abuja are more easily adopted and adapted in other states. It is also a territory that has all the challenges of globalisation^{25,32}. With the increase in the exposure to risk factors associated with the NCDs trends, it is important to explore the knowledge of Abuja residents on the determinants of NCDs as well as the challenges and successes in implementation of NCDs prevention strategies at the PHC level.

Essential health package, strategic plans and universal health coverage: The WMHCP is the framework for EHP in Nigeria. It was planned for a 5 year period from 2007–2012 and thus due for a review. Though guidelines for implementation of prevention strategies for NCDs are outlined by the NPHCDA, they are however not incorporated in the SHDP of Abuja. Findings and recommendations from this study could thus be useful in advocating for further research and eventual review of the WMHCP and the SHDP particularly in the area of NCDs prevention. The SHDP which should be reviewed in 2015 for another 5years will also be open to evidence based solutions in providing a more comprehensive EHP as the world looks towards Universal Health Coverage (UHC). An exploratory study will give insights to the challenges that could be faced by PHC workforce in practice and could also identify some strengths and prospects for effective NCDs preventive activities in the EHP.

2.3 Objectives

2.3.1 General objective:

To explore the factors which determine the implementation of NCDs prevention policies and plans in Nigeria's Essential Health Package through Primary Health Care in the Federal Capital Territory in order to make recommendations to better respond to the growing challenge of NCDs.

2.3.2 Specific objectives:

1. To describe existing policies and strategies on NCDs prevention and their implementation in Abuja.
2. To explore the extent to which the WMHCP is implemented in Abuja PHCCs in relation to NCDs prevention.
3. To explore the extent to which knowledge, practices and views of CHEWs in Abuja PHCCs are consistent with the NCDs component of the WMHCP.
4. To explore the knowledge, views and perception of WDCs members as a proxy to access community knowledge and participation in NCDs prevention activities in Abuja.

5. To use findings in making recommendation for the implementation and review of NCDs prevention component in the WMHCP to policy formulators, implementers and health planners in Abuja.

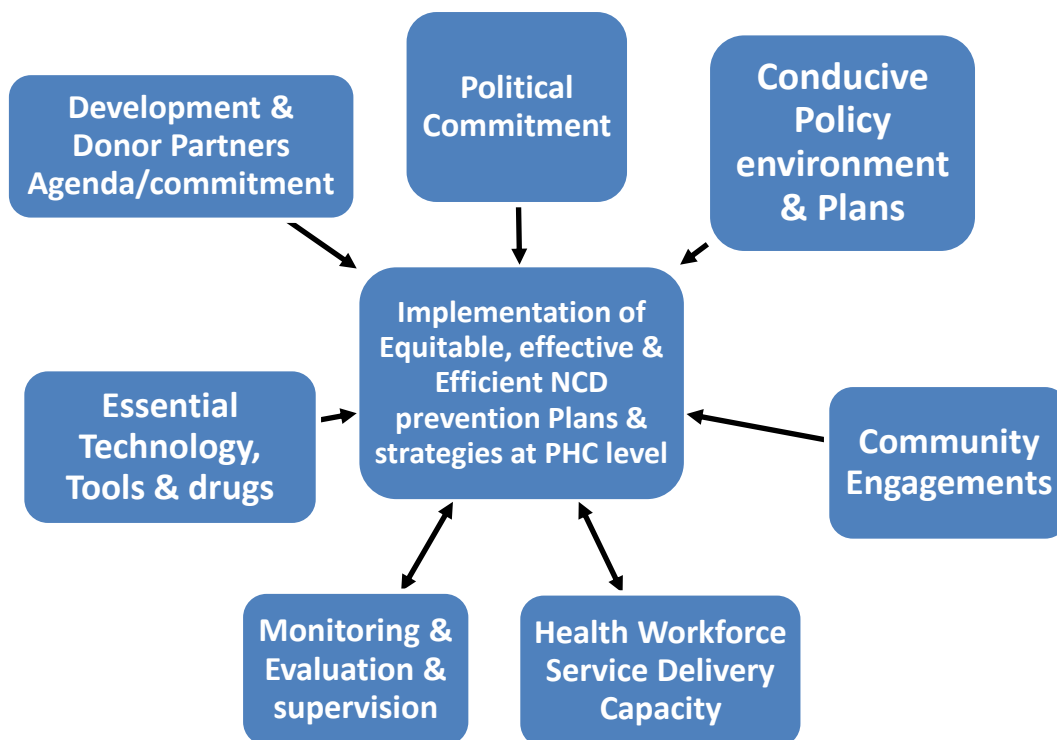
2.4 Conceptual framework for implementation of NCDs prevention package for PHCs:

In exploring the implementation of NCDs prevention policies and strategies for PHC in Abuja, a conceptual framework has been adapted (figure-2) from the conceptual framework for the implementation of Package of Essential Non-communicable Disease Interventions (PEN) for PHC in Low-Resource Settings (annex-A). The PEN framework was developed by the WHO in 2010⁷ as a guide for the implementation of an essential package for the prevention and control of NCDs at the PHC level in low resource settings. The WHO PEN was developed as a follow up to the Global Strategy for Prevention and Control of NCDs which was endorsed at the May 2008 World Health Assembly (WHA)⁵⁹. Experts with wealth of experience and qualifications in various aspects of NCDs were drawn from different countries to contribute to the document at the instance of the WHO's Department of Chronic Diseases and Health Promotion, in collaboration with WHO regional offices. The PEN framework is suitable for a research on NCDs prevention in Abuja being in a LMIC country. It has however been modified to focus on the concept of implementing prevention plans and strategies for NCDs within the scope of this study.

The surrounding 7 boxes have been arranged to reflect the different themes that should contribute to the effective, efficient and equitable implementation of plans and programs for NCDs. The 3 themes at the top are essentially related to policy and governance that will influence implementation. The addition of technologies and tools to the framework was coined from WHO PEN document. Community engagement is an essential part of the adaptation as it forms the basis for the exploration of the role of WDCs. The bottom two boxes are linked to health workforce capacity for service delivery, Monitoring and Evaluation (M&E).

The 2-way arrow of these bottom two boxes indicates the importance of feedback mechanisms in M&E and service delivery. They will serve as a template to explore the roles of CHEWs and their supervision by policy makers and program managers.

Figure 2: Conceptual Framework for Implementation of Essential NCDs Prevention Package for PHC in Federal Capital Territory of Nigeria



Source: adapted from WHO PEN (2010)

2.5 Methodology

The study design is qualitative. It consists of an exploratory component and a literature review. The literature review comprises of relevant documents (published and unpublished), guidelines, policies, reports and plans for NCDs prevention in FCT and Nigeria as well as journal articles and services records from PHCCs and GHs. The exploratory primary research proposal and research tools can be found in annexes B1-B9. The aim was to explore the knowledge, practices and views of PHCC health workers and community representatives in relation to policies and guidelines for the prevention of NCDs particularly hypertension and diabetes. The availability of IEC materials and basic screening equipment for the healthcare personnel at PHCC to work with was also explored. IEC and basic screening equipment are the key prevention strategies in the NCDs component of the WMHCP. The different techniques and tools employed in the research were aimed at achieving triangulation as well as increasing the validity of the study. The conceptual framework for the implementation of NCDs prevention package was used to develop themes and analyse findings from the exploratory research and the literature reviews.

The findings from the primary research are presented in chapter 3 and the findings from the literature review are used as a basis for the discussion of the primary research findings in chapter 4.

Study population and scope: The study population was drawn from Abuja residents with a total of 38 participants. They were of two main categories: CHEWs and WDC members. The study also involved key informants that have roles in policy formulation and implementation in Abuja PHC services.

Interviews: Six key informant interviews were conducted with policy makers and health managers from NPHCDA, PHCDB, PHD, AC and University of Abuja Teaching Hospital (UATH) to represent views from national, state and AC levels.

Focus Group Discussions (FGDs): Three FGDs (one with CHEWs and two with WDCs) were conducted.

Observations: Six selected PHCCs (one in each AC headquarters) were visited and observed for presence and display of IEC materials as well as the presence and use of basic screening equipment for diabetes and hypertension.

Tools and instruments: Interview and discussion guides were developed for the key informant interviews and FGDs respectively (annexes-B2-B6). Each guide was specific for the groups and informants based on issues anticipated using the framework and problem analysis. A checklist was developed for the observations of selected PHCCs. The checklist was adapted based on the recommendations of the WMHCP to access for presence of IEC materials and basic equipment. An audio recorder was used in all the interviews and FGDs and a camera was used in the observation visits. Tools were adjusted iteratively based on experiences from each activity.

Sampling methods: Purposeful sampling was employed. The maximum variation type for the CHEWs was used in order to have representation from each of the AC of Abuja. The variation was also increased by ensuring gender parity in selection. This variation also had in mind to aggregate a homogenous group of the same cadre. A total of twelve CHEWs, six females and six males each with at least 5years working experience participated.

The WDCs were purposefully selected to give contrasting groups with one from the most rural AC (Abaji) and one from the most urban AC (Abuja Municipal) aimed at giving an insight to possible differences in knowledge and perception about NCDs between urban and rural residents. The WDCs vary in composition with representation from stakeholders in the catchment community and staff representatives of the PHCC. The PHCC staff

representatives were excluded from these discussions with the WDCs to avoid the possibility of influencing the group dynamics and knowledge base.

Ethical considerations: Ethical approval was obtained from the FCT Health Research Ethics Committee and the KIT Research Ethics Committee (annexes-C,D). Written clearance was obtained from the management of the ACs PHC Departments. An acknowledgement of informed consent was obtained from every participant with an adaptation of a WHO recommended consent form (annexes-B7-B9).

Literature search strategy: Google scholar, Scopus, PubMed, the lancet, KIT Library, WHO and World Bank websites provided links to relevant internet sourced documents and materials for the literature review. Nigerian and International organisations' websites were visited for useful materials including National Bureau of Statistics, and National Population Commission, Federal Ministry of Health, Nigerian Heart Foundation and International Diabetic Foundation. Key words used in different combinations include NCDs, Hypertension, Diabetes, Essential/Minimum/Basic Health Package, PHC, Nigeria, FCT, Abuja, prevention, implementation. Manual search was also done by checking for useful materials from the reference list of accessed articles. Personal Library and reports from previous work experience was also explored.

Inclusion/exclusion criteria: Only English language documents, articles and publications were consulted and restricted to a maximum of 15years to coincide with after the first Nigerian expert committee on NCDs submitted its report and about when the WHA agreed to develop a plan of action for NCDs prevention and control^{60,61}.

2.6 Limitations:

The scope of the primary study due to limited available time and resources was a constraint. Some findings from this research are not necessarily generalisable but may only be valid for the study population. Instruments for the conduct of FGDs with WDCs was not pretested but lessons for adjustment were drawn from the pre-test of other instruments in the study with similar issues. Some participants in the FGD with WDCs could not understand English, but the research assistants are fluent in the local languages and served as interpreters which may have introduced some bias or loss of some important contributions. Certain outcomes from the research suggest that views from political office holders and patients who have diabetes and hypertension may have enriched the study; however this was not possible due to the study design and the time available. Similarly, interviewing other cadre of health staff could have been useful.

Chapter 3: Findings on implementation of NCDs prevention Plans and strategies in FCT primary health care

The primary research findings are presented here. FGDs, key informant interviews and observation techniques were employed for the study population as previously explained in chapter 2. The conceptual framework was used to categorise and describe the findings.

3.1 Political commitments and policy environment

These two are presented together because issues relating to policy environment were largely dependent on the political commitment.

3.1.1 Knowledge and description of diabetes and hypertension in FCT among stakeholders

The recognition of the current burden of NCDs in FCT by the various stakeholders may be an important factor for commitments and policy environment.

Description of trends by key informants: The key informants involved in the implementation of NCDs prevention plans are well knowledgeable of the current situation of diabetes and hypertension in Nigeria and Abuja specifically. All key informants described the situation as a rapid increase in incidence and prevalence which is very worrisome. They also are worried about the double burden faced with communicable and NCDs.

Views of CHEWs on trends: The CHEWs were unanimous in ascertaining that diabetes and hypertension were a major disease burden encountered in their respective PHCCs. They also expressed their handicapped in comprehensive management and challenges with referral support and linkages with GHs.

Views of WDCs members on trends: The members of the WDCs in both the rural and urban wards were aware of the increasing trends of diabetes and hypertension. One such participant described the trend from his own perspective: *“if you look today, measles, chicken pox, polio are reducing in the country due to federal government campaign, this year I have not seen any case of measles myself. But this issue of diabetes and hypertension is very serious now as the people are really suffering and I think the government should start campaigning on this sickness too”*.

3.1.2 Structural, operational and financial commitments for NCDs in PHC

Organisational structures which determine how programs are implemented, can give indications on how the various levels of government play their roles in NCDs prevention in Abuja.

Local government level structure: The ACs PHC departments have units responsible for NCDs, but activities are said to be rudimentary due to lack of adequate budgetary commitment to the units. One AC has a designated unit for NCDs; another AC has a disease control unit for NCDs and CDs activities.

State level structure: The PHCDB and PHD both have NCD units in their disease control departments. Lack of funds to operationalise programs was a key constraint for these units as government and donor funds are said to be preferably spent for CDs, MCH programs. Funds at this level are also not made specific for programs and events, but rather are released as an envelope of funds for all disease control activities. There is overwhelming preference for spending towards the CDs components of the envelope as determined by the chief executives of such agencies and the supervising political office holders.

Federal level structure: The NPHCDA has a desk on NCDs in its community health services department. The Agency also has a health promotion department. These departments collaborate with the primary health systems development department to develop programs and plans. Financial commitments to NCDs at this level are limited. Final decisions on allocation of funds were determined by political office holders with less reliance on actual burden of disease.

Referral coordination and services integration: There was consensus on the need to improve referral linkages. Key informants were of the view that PHCCs should be strengthened for gatekeeping and have direct support from GHs. Some CHEWs expressed concern of the refusal of some patients to accept referral and demanded that they be given additional official responsibility to handle some cases. Ironically, a consultant physician at the UATH was concerned that patients come to them directly without referral from PHCCs or GHs. Opportunities to integrate NCDs preventive services with existing programs have been identified by health managers at the different levels. One challenge mentioned is the reluctance of donor funded CDs program to allow for integration of NCDs program. One health manager however affirmed that occasional partnership has been achieved with HIV/AIDS outreach programs to deliver messages on diabetes and hypertension.

Payments for services: Patients pay fee for services at PHCCs via OOP. These include, consultation, purchase of drugs for hypertension and diabetes

and investigations like urinalysis and random blood sugar. WDC members complained that such services were not generally affordable by most members of their community.

3.2 Essential technology and drugs

Availability and use of functional basic tools and equipment: A list of essential equipment and tool adapted from the WHO recommendation for PHC in low resource setting was used as a checklist in the observational visits to the PHCCs (table-1). Sphygmomanometers and stethoscopes were found to be available and functional in all 6 PHCCs though some of the staff on duty complained that equipment were too few to share amongst different units of the clinic at peak periods. Two of the 6 PHCCs had a functional glucometer and all had urinalysis strips that can detect glucose and protein in urine. One PHCC did not have a functional adult weighing scale. All the PHCCs had a functional stadiometer for height measurement.

Health managers at the different levels affirmed that basic equipment relevant for screening and diagnosis of diabetes and hypertension are purchased and distributed periodically but they were unanimous in acknowledging that not all PHCCs are equipped optimally, a view also expressed by the CHEWs. They all mentioned the challenge of maintaining and replacing obsolete equipment.

Availability of essential drugs for diabetes and hypertension: Oral medications for the management of hypertension and diabetes are available in some PHCCs and CHCs especially the ones having medical doctors. Majority of the CHEWs in the FGD revealed that they use *aldomet* (methyldopa), *nifedipine* (a calcium channel blocker) and *moduretic* (a thiazide diuretic) for the management of hypertension but had limited knowledge of the use of diabetic drugs. They however admitted doing it against the recommendations of their standing orders.

Table 1: Availability of basic and functional tools and equipment for NCDs screening in 6 FCT PHCCs

Tool/equipment	PHCC 1	PHCC 2	PHCC 3	PHCC 4	PHCC 5	PHCC 6
Sphygmomanometer	Functional	Functional	Functional	Functional	Functional	Functional
Stethoscope	Functional	Functional	Functional	Functional	Functional	Functional
Glucometer and strips	Not available	Available but not functional	Functional	Not available	Functional	Not available
Urinalysis strips	Functional	Functional	Functional	Functional	Functional	Functional
Weighing scale (adult)	Functional	Functional	Functional	Functional	Functional	Not functional
Stadiometer	Functional	Functional	Functional	Functional	Functional	Functional
Measurement tape	Functional	Functional	Functional	Functional	Functional	Functional
Mid Upper Arm Circumference Strips	Functional	Functional	Functional	Functional	Functional	Functional

3.3 Monitoring and Evaluation

Surveillance: Reporting of NCDs from PHCCs is said to be less than optimal. It was attributed to the emphasis placed on CDs outbreak indices by surveillance officers at various levels as well as technical partners like the WHO. Other reasons mentioned were non-specific to NCDs but equally important. They are linked to inadequate resources to provide for transport and logistics to do monitoring and support surveillance at the PHCCs. Occasional screening exercises do occur in different communities as organised by government agencies or NGOs independently or in partnership. Mass screening for diabetes and hypertension was done in some selected communities in Abuja to mark the 2013 world health day which had hypertension as its main theme.

Supportive supervision: In general, supportive supervisory visits to PHCCs by health managers were irregular and not uniform. Such visits had emphasis on immunisation, HIV/AIDS, TB, malaria and MCH. Diabetes, hypertension and other NCDs are hardly part of such supportive supervision. As simply put by one CHEW in the FGD *"there is column for NCDs in our registers, but they don't usually ask us for them when they visit"*. Health managers also cited inadequate resources for logistics as a challenge.

3.4 Human resource for health and service delivery at PHCCs

Knowledge of CHEWs on NCDs: In the FGD with twelve CHEWs, jointly the group understood what NCDs referred to in terms of non-infectious diseases but could not all name diseases that are so categorised. While most correctly mentioned hypertension, diabetes, asthma, SCD and obesity in a free listing exercise, a few also mentioned some CDs like malaria, typhoid, pneumonia which was corrected by some more knowledgeable colleagues. Knowledge of the major risk factors for NCDs was diffused among the participants though as a group they listed excessive sugar and carbohydrate as risk factors for diabetes. They also listed excessive salt intake and psychological stress as risk factors for hypertension. Three participants listed tobacco smoking and sedentary life style as risk factors for hypertension and diabetes respectively. One participant wanted explanation on how tobacco is a risk factor for hypertension as he said *"I need enlightenment on how smoking can cause hypertension since it goes into the lungs"*. They however did not link the four major risk factors as common to the four major NCDs. Most of the participants had fair knowledge of the common symptoms and complications for hypertension and diabetes.

Training for PHCCs health workforce: There is limited in-service training for CHEWs with regard to diabetes and hypertension. One CHEW in the group of 12 acknowledged attending a workshop on diagnosis and

management of SCD about a year ago organised by the PHD. The PHCDB and NPHCDA have not carried out training for CHEWs and other frontline health workers in PHCCs specific to diabetes and hypertension prevention. The PHCDB conducts continuing medical education for doctors in their employment and sometimes invites other cadre of health workers to attend. Detection of hypertension and diabetes in pregnant women attending ANC is incorporated in the training of midwives engaged in a midwives services scheme (MSS) instituted by the NPHCDA to improve skilled birth attendance at PHCCs nationwide. Regular and periodic training activities go on for immunisation and HIV/AIDS.

Availability of staff at PHCCs: The staff strength of many PHCCs is inadequate for the needed services and undermines their ability to offer 24hours services in many communities. CHEWs complained of excess workload in such circumstances. The MSS is said to largely complement the services at selected PHCCs. The midwives in this scheme are sometimes the only staff available to provide general health services to the community in addition to the MCH services for which they are primary trained and posted.

Job Aids in PHCCs: Diagnostic charts, case definitions and management guides specific to diabetes and hypertension were hardly available in the PHCCs visited. One PHCC had the case definition for diabetes and hypertension listed among other diseases in a chart developed and recommended by the WHO African region. Staffers of the PHCC were not familiar with the contents of the chart kept away from general access in one of the consulting rooms. One PHCCs had the cut offs for laboratory diagnosis of diabetes displayed within the laboratory. In the FGD, all the CHEWs complained of insufficient materials to better detect diabetes and hypertension. They compared these to resources for immunisation, malaria, HIV/AIDS and family planning.

Integration of services at PHCCs: Opportunity for integrating NCDs primary and secondary prevention strategies were identified by health managers at various levels. There were suggestions for the inclusion of messages on NCDs in sensitisation activities on immunisation and HIV/AIDS as well as in their training activities. There were also suggestions on expanding existing PHCCs services to become sensitive to screening for diabetes and hypertension. Such services like nutrition programs and ANC were particularly mentioned by health managers and CHEWs. One CHEW mentioned that in her PHCC, they sometimes identify men who accompany their wives to ANC and encourage them to have their Blood Pressure (BP) checked.

3.5 Community engagement

Display and usage of IEC materials in PHCCs: IEC materials specifically on diabetes and hypertension were not seen in any of the PHCCs visited (table-2). However one PHCC had an IEC material on breast cancer awareness. Similarly, IEC materials with messages on the major risk factors for NCDs were not commonly noticed. Two PHCCs had IEC materials on the consequences of tobacco smoking in cancers and CVDs, though the poster containing this message was placed in an obscured location in the clinic and the words were written in small prints. One PHCC had a poster conspicuously displayed with messages targeting some major risk factors for NCDs namely excessive salt intake, alcohol abuse, tobacco smoking and unhealthy fatty diet, though the messages did not directly mention these as risk factors for NCDs, it did demonstrate that these factors were dangerous to health. Numerous IEC materials were on display in all the PHCCs visited with messages mainly on immunisation and vaccination, HIV/AIDS, family planning, malaria and breast feeding (annexes-E,F,G).

At the federal and state level, there are indications that IECs have been produced and distributed to PHCCs by the NPHCDA and PHCDB but of limited quantity and consistency over time. This assertion was corroborated by the ACs where IECs on NCDs have not been produced.

Knowledge and views of WDCs on NCDs: WDCs engaged in the FGDs identified diabetes and hypertension as NCDs. They however also erroneously mentioned some CDs as NCDs. They were familiar with the major symptoms and complications of hypertension and diabetes. With regards to the determinants and risk factors, their knowledge was diffused. Majority could not demonstrate knowledge of the major risk factors for NCDs. They rightly identified excess sugar as a possible cause of diabetes and psychological stress as contributory to hypertension. They however did not know the association of tobacco smoking and alcohol abuse with NCDs, though they acknowledged such habits are dangerous to health. Excessive salt intake was not mentioned as a risk for hypertension. A few participants mentioned physical inactivity as a possible cause for diabetes and hypertension. A few others expressed views that sometimes these diseases are from spiritual causes which only God can determine. They were also worried that these conditions were now affecting persons younger than 50years as against older people many years back.

Table 2: Observation for IEC on NCDs at 6 PHCCs in FCT

PHCC	Types of IECs available	Commonest messages on IECs	Displayed IEC or diagnostic charts on major NCDs	Displayed IECs on major risk factors for NCDs
1.	Wall posters/pictures, banner	Immunisation/vaccination/polio eradication, HIV/AIDS, TB, family planning, Malaria, breastfeeding, childhood under nutrition, guinea worm eradication, water and sanitation (Annex F)	None	Consequences of tobacco smoking (Annex G)
2.	Wall posters/pictures, handbills/flyers	Immunisation/vaccination/polio eradication, family planning, malaria, HIV/AIDS, TB	None	None
3.	Wall posters/pictures, banners, videos, handbills/pamphlets/flyers	Immunisation/vaccination/polio eradication, diarrhoea/ORT, childhood under nutrition, breastfeeding, family planning, malaria, TB, HIV/AIDS	None	Tobacco, alcohol, unhealthy diet (Annex E)
4.	Wall posters/pictures, banner, handbills/pamphlets	Immunisation/vaccination/polio eradication, diarrhoea/ORT, breastfeeding, family planning, malaria, HIV/AIDS, medical waste management and safe injections	Breast cancer awareness	None
5.	Wall posters/pictures, handbills/pamphlets	Immunisation/vaccination/polio eradication, childhood under nutrition, breastfeeding, family planning, malaria, TB, HIV/AIDS	None	Consequences of tobacco smoking
6.	Wall posters/pictures	Immunisation/vaccination/polio eradication, diarrhoea/ORT, childhood under nutrition, breastfeeding, family planning, malaria, HIV/AIDS, river blindness	None	None

Training for WDCs and community dialogues: Members of WDCs revealed that they have attended training and workshops organised by government agencies and NGOs which had to do with awareness creation and community mobilisation strategies for health related events and programs. They singled out immunisation trainings as the most frequent of such engagements. There was no involvement in training for neither diabetes nor hypertension. The NPHCDA supports WDCs through participatory learning and action and encourages discussing health as a development agenda, though emphasis for this support is in immunisation, MCH.

Availability and accessibility of PHCCs: There is at least one PHCC in each ward, but the adequacy and functionality to provide access to the community was said to be doubtful. Some wards have a population that

requires more than the number of available PHCCs. Members of the WDCs felt that health in general was not prioritised like other government departments. One WDC member lamented as such: “*there is magistrate court everywhere, but to see Asibiti (clinic) is difficult*”.

Awareness creation on lifestyle modification and media campaigns:

Staff members of the NPHCDA and PHCDB are involved in a monthly keep fit exercise. Other government establishments and development partners are encouraged to participate. Health talks and screening for diabetes and hypertension are sometimes conducted. The practice is yet to be replicated at the AC level. It is aimed at setting examples for the general society to adopt though passively. A few school based awareness program has been carried out by PHCDB with the belief that children are a way of passing messages to the family.

Some WDC members mentioned radio and television as a source of information on hypertension and diabetes.

3.6 Local and International donors, partners and NGOs commitment

Community engagements and outreach services: Local NGOs are usually involved in occasional awareness campaigns and screening exercise for diabetes and hypertension. Nigerian health professionals in diaspora are reported to come home during their holidays to organise mass screening and treatment campaign for NCDs. Some faith based organisations also do screening and awareness campaigns for their members occasionally. No development partner or international NGO is currently acknowledged to be directly involved in any NCDs outreach or community enlightenment program in FCT.

Capacity building: Development partners were acknowledged to be very supportive in health systems strengthening with emphasis on MCH, immunisation and HIV/AIDS. Many of the support are very specific to the program areas. Some of these capacity building are in training of health workers, provision of some essential tools, equipment, drugs and consumables. They also engage in administrative and structural projects like clinic renovations, supportive supervision, as well as logistics supports for supplies and records keeping. While some of the general supports do provide a platform for better health services, there is no specific capacity building activity for NCDs.

Chapter 4: Discussions

The increasing trend of NCDs is obvious in Abuja, Nigeria. Health managers and policy makers at different levels of governance necessary for an operational PHC system in FCT are fully abreast with the concept of the epidemiological transition and the double burden of disease. The major contributions of diabetes and hypertension to this avoidable burden are also quite apparent. The encounter of CHEWs in PHCCs and the testimonies of members of WDCs as revealed in the different FGDs only lay credence to these established facts.

Using the conceptual framework introduced in chapter 2 as a guide, the factors which determine how the prevention components for NCDs in the WMHCP are implemented through PHC have been explored. These findings which were presented in chapter 3 will be further analysed using existing policies and guidelines, relevant publications and records on NCDs prevention in Nigeria and other research findings.

4.1 Organisation and commitments to NCDs prevention through PHC in FCT

Administrative and coordinating structures: Political commitment to implementing NCDs prevention plans at PHC level determines sustainability of such programs. Forums could be organised to provide basis for consensus building on the best ways to implement NCD prevention plans and programs equitably, with proper coordination from health authorities and adequate resource allocation for feasibility and pilot studies consistent with the recommendations of the May 2008 WHA^{7,59}. The first major effort made by the Nigerian government to tackle NCDs was in 1997 when an expert committee on NCDs submitted a report on the status of NCDs in the country based on a 1990 survey⁶⁰. However, NCDs only became included in the EHP of Nigeria in 2005³. The key informant interviews revealed that coordinating units for NCDs exist at the various level of government involved with PHC activities. The ACs have officers responsible for disease control including NCDs. In one case, the same individual is responsible for coordinating CDs and NCDs while in another, NCDs has a distinct unit and coordinator. The former may have the advantage of integrating CDs and NCDs services whereas the later may have the advantage of more focus on NCDs. Similarly, units for NCDs exist within the organograms of the PHCDB and the NPHCDA. Considering the nationwide mandate the NPHCDA has in providing direction for the different states and LGs to adapt, the commitment to NCDs prevention and control is minimal especially when compared to the commitment NPHCDA pays to immunisation, MCH, HIV/AIDS, malaria, TB and other CDs.

Government financial commitments: Budgetary allocation to health in Nigeria has remained around 5% of the general government budget and below 15% recommended in the Abuja declaration hosted by the Country in 2001^{62,63}. Abuja government's health budget as percentage of its general budget has also mostly fallen below 5% (figure-3A)²⁹. Reports also show that only between 15% and 45% of the approved health budget is usually released for actual implementation over the last 5years (figure-3B). This is consistent with the findings from health officials that budgeted funds for NCDs most times are not made available for expenditure which implies that unreleased funds are those meant for NCDs and other possibly under prioritised programs. It therefore means even when plans are made and budgeted for, they are usually not funded. This might lead to a situation where such proposals are not resubmitted in future by health managers for fear of similar fate. What seems apparent also is the difficulty of technocrat policy makers and health managers to convince politicians on allocating resources to NCDs prevention based on existing evidence.

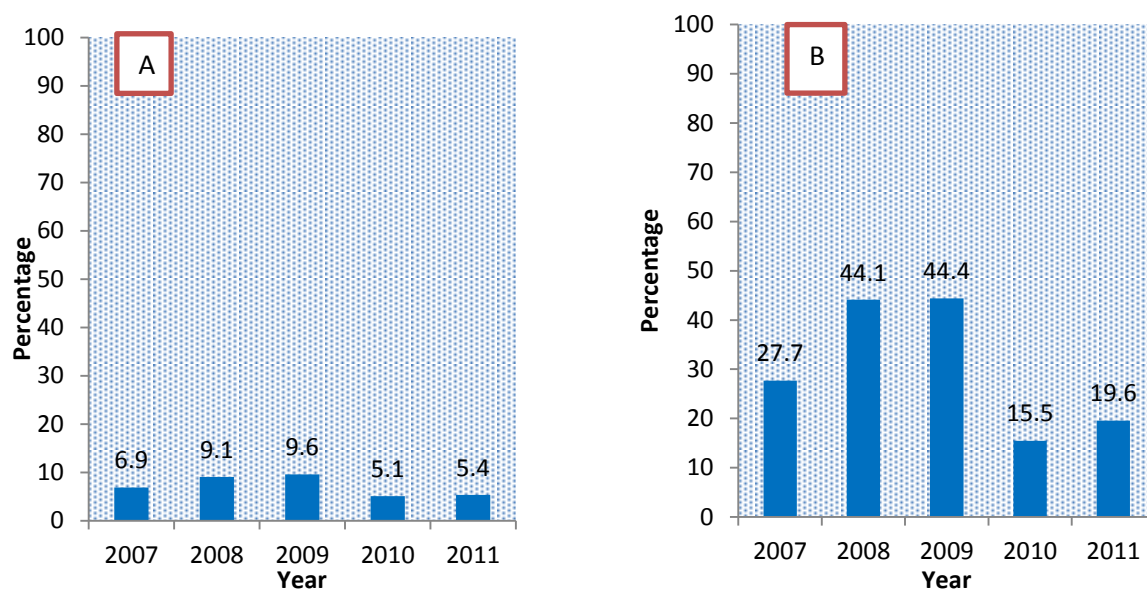
A three year budget projections for health spanning 2011-2013, in one AC in Abuja did not have an obvious provision linked to NCDs prevention and control though provisions for immunisation, HIV and other CD programs are outlined⁵⁴. One AC department of health has since last year included purchase of drugs relevant for management of diabetes and hypertension. While this is welcomed development, there is tendency for emphasis to be placed on drug management for those with the disease while other primary preventive measures that will have a community wide effect are ignored. It could be worthwhile for PHCs department to focus more on funding primary prevention interventions aimed at lifestyle modification and early detection which will invariably reduce the burden of medication.

Financial risk protection for patients: Only 3% of Nigerians are enrolled in the NHIS and have access to the WMHCP which includes basic laboratory screening and examination. They are also covered for specialist consultation in referral hospitals as well as cost of admission for 15days⁶⁴. However, cost of drugs for treatment of diabetes and CVDs are not covered. The implication here is that even those covered by the NHIS only get access to free consultation, but still pay for drugs needed for chronic care by OOP. The exclusion of drugs for NCDs in the NHIS basic package may be connected with avoidance of huge cost of chronic care by health insurance companies. This inequitable situation particularly affects the poor who may not be able to afford such drugs. Ideally, if NHIS emphasises prevention intervention and promotes lifestyle modification, it would lead to fewer persons with NCDs and invariably lower overall cost of care. It is therefore not a surprise findings from WDC members that cost of treatment and consultation is a burden for many members of their communities. Countries without social and health insurance or other forms of risk pooling for individuals and

families can produce catastrophic consequences for families who have someone with a chronic NCD especially for women who abandon economic activities to care for the sick⁶⁵.

Abuja government is since August 2012 piloting a community based health insurance scheme (CBHIS) in selected communities in order to decrease barrier to the WMHCP package of rural communities as a result of cost and a pathway to a UHC. The contributory payments of members of the selected communities are subsidised by the government of Abuja⁶⁶.

**Figure 3: A- FCT Health allocation as a percentage of the total budget.
B- FCT Total expenditure on health as a percentage of the total approved budget for health**



Source: FCT Statistical Health bulletin (2011)

4.2 Capacity for effective service delivery in FCT PHC

Capacity building involves providing the right tools for the right workforce with the right skills, in appropriate infrastructure and with supporting structures, systems and roles for coordination and integration. This is based on the definition articulated by Potter and Brough in 2004. Each component depends on the other for a system to function optimally⁶⁷.

4.2.1 Essential technology, tools and drugs:

Determining the right mix of technologies, tools and drugs at primary care level in the face of limited resources can be a hard task. However, such technologies bring care closer to the people based on specific community needs, a workforce with the right skills and a proper referral system⁷.

Essential drugs: The most recent edition of the Essential Medicines List (EML) for Nigeria was published in 2010. The list includes essential drugs that should be available at all times in the right amounts and dosage forms at all levels of health facility to satisfy the healthcare needs of majority of the population at a relatively affordable cost⁶⁸. The list of drugs for CVDs and diabetes in the EML are for secondary level of care while the section for drugs recommended at PHCCs neither has any of the CVD nor diabetes drugs listed (Table-3). Most drugs for the management of hypertension and diabetes on the WHO EML are for prescription by a physician but should be available for refill in settings with no physician⁷. The standing order for CHEWs emphasises the need to refer promptly especially in life threatening CVD conditions or severe hypertension. Neither the EML nor standing order for CHEWs recommends what could be done in the case of follow up and maintenance for patients who are most times on lifelong treatment prescribed at secondary or tertiary hospitals by physicians. The FGD with CHEWs however reveals that some of these drugs not on the primary care drug list are prescribed in their daily practice though not approved in their standing orders. They complained about the lack of feedback and referral linkage with the GHs. This practice by CHEWs is apparently bringing needed services closer to the patients as advocated by the WHO. However, the fact that regulatory documents for their practice do not give them this mandate makes it unlikely they do so according to required standards. In addition, they may not be effectively supervised for what they are not expected to do. PHCCs can be supported to monitor drug adherence and serve as drug refill sites for NCDs patients as is currently practiced for HIV and TB patients⁶⁹. It has also been demonstrated that non-physician health workers in low resource settings if well-trained, can identify and manage early CVDs⁷⁰.

Essential equipment and tools: The essential equipment list (table-4) for PHCC compiled by the NPHCDA does not have a glucometer or any device for measuring blood sugar, which is essential for the diagnosis of diabetes though the guidelines for implementation of NCDs prevention stipulates that CHEWs and other frontline PHC workers should be able to measure blood sugar for monitoring known diabetics as well as making diagnosis in the previously undiagnosed³. The WHO recommended list of basic laboratory equipment for low resource setting as part of PEN (table-4) includes blood sugar measuring device as one of the basics⁷. The non-availability of glucometer in most of the PHCCs visited (table-1) may be reflective of procurements done with the existing essential equipment list as a guide. Other basic tools are noted to be available in PHCCs visited though they are sometimes non-functional. The breakdown and disrepair of equipment was acknowledged as a challenge by health managers and CHEWs. It is good to take into cognisance the fact that the 6 PHCCs visited are located in the headquarter towns of each AC and may have better attention than PHCCs in

more remote locations²⁰. Findings at PHCCs also indicate that tools are sometimes not enough to meet with the workload at peak periods in PHCCs and different sections in the PHCCs are compelled to share the few available. The findings are also consistent with the report of the PHCDB on infrastructure that only 4% of PHCCs had the required basic equipment in 2011³¹.

Table 3: Comparison of WHO recommended drug list and Nigeria's EML for CVDs and Diabetes

WHO recommended Essential drugs for Diabetes and CVDS in low resource setting	Presence on the Secondary level Care list in Nigeria	Presence on the PHC essential drug 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 PEN (2010) and Nigeria's EML (2010)

Table 4: Comparison of WHO essential equipment list for CVDs and Diabetes and Nigeria's essential equipment list relevant to CVDs and diabetes.

WHO recommended basic equipment for Diabetes and CVDs in PHC	Present on the Nigeria's 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 PEN (2010) and NPHCDA essential equipment list (2012)

4.2.2 Availability, knowledge and training of PHC health workforce:

The health workforce at PHC level, including non-physician cadre like CHEWs need to have the ability to identify, manage and refer cases of diabetes and hypertension appropriately with the use of basic tools like glucometer and sphygmomanometer. This they should have additional and specific training to ensure quality of service delivery⁷. Abuja PHC workforce comprises of a number of different cadre (table-5) with specific roles and responsibility. The recommended phased capacity building for PHC workforce comprises of

training to recognise major NCDs by early symptoms and simple laboratory tests with prompt institution of treatment where applicable as well as providing community based management, treatment and follow up^{42,47}. Front line non-physician health workers offering PHC services in South Africa have specific days in a week to see and review case of NCDs with guidelines for management of hypertension and diabetes to aid diagnosis, treatment and referral. They have received additional specific training to meet with the responsibility⁷¹. Similarly, the Mozambique experience in the midst of limited resources showed that the integration of diabetes and hypertension basic services with HIV/AIDS were achievable through providing relevant additional information on diabetes and hypertension in the training manuals for health workers in the HIV/AIDS programs. Toolkits were developed to ease diagnosis and management⁷².

Availability: Findings from interviews and FGDs have shown that many PHCCs cannot function fully with the number of staff at their disposal. This situation makes services for NCDs that already lag behind worse off. Staff shortage for MCH services is being addressed by the MSS to make skilled birth delivery available at PHCCs in remote and rural communities. The MSS was launched by the NPHCDA in 2009 to boost the availability of skilled birth attendants to most communities through PHCCs⁷³. Freshly graduated midwives are compulsorily posted to remote and under-served rural communities to serve for at least one year before obtaining their full practicing license. Retired midwives are also engaged in the MSS. The scheme trains the engaged health personnel in lifesaving skills, basic obstetric and neonatal care. In many instances, the midwives are the only available staff in some PHCCs. They therefore provide general health service delivery to the community apart from MCH services. While this is an opportunity to scale up services for NCDs, the dedication to give additional services may not be guaranteed since it is outside the scope of their primary assignment; in addition, they may not be adequately trained to deliver such services. FCT currently has 24 PHCCs, supported by the NPHCDA through the MSS. The scheme however proved that it was possible to address health workforce shortage at scale.

The list of PHC staff in table 5 shows that CHEWs which make up the majority have met 73% of the required for effective service delivery in Abuja PHC as determined by the PHCDB. The list also shows that the availability of other staff cadres providing complementary services for effective service delivery is averagely below 50% of required³¹. Notably among these are doctors, nurses, midwives, pharmacist, nutritionists, laboratory technicians and laboratory assistants. Health promotion and education officers who are equally important are not listed. Only 15% of PHCCs were reported by the PHCDB to have the adequate number of staff in the right mix to deliver the

WMHCP and 40% had the staff capacity to deliver community based services³¹.

Table 5- PHC staff distribution by cadre in Abuja.

S/NO	Cadre	Available number	Percentage of required
1	Doctors	17	32%
2	Midwife	79	14%
3	Nurse/Midwife (Double Qualified)	111	58%
4	Nurse	45	24%
5	Community Health Officer	60	88%
6	Community Health Extension Worker	376	73%
7	Junior Community Health Extension Worker	255	26%
8	Pharmacist	4	29%
9	Pharmaceutical Technician	10	25%
10	Pharmacy Assistant	4	7%
11	Laboratory Scientists	17	121%
12	Laboratory Technician	19	48%
13	Laboratory Assistant	4	7%
14	Medical Recorder	25	46%
15	Environmental Health Officer	1	7%
16	Environmental Health Technician	2	4%
17	Environmental Health Assistant	5	9%
18	Nutritionist	2	14%
19	Nutrition Assistant	0	0%
20	Health Assistant	47	11%
21	Health Attendant	130	30%
22	Ambulance Drivers	8	15%
23	Security Men	127	29%
24	Facility Maintenance Assistants	35	16%

Source: FCT PHCDB staff audit report (2011)

Training: No specific in-service training in prevention and management of diabetes and hypertension was reported to have been organised for CHEWs and other cadres of staff from the interviews and FGD conducted. The knowledge of common symptoms for diabetes and hypertension by CHEWs may be based on their pre-service training or limited explanations in the standing orders. They may have also learnt from experience and interactions. This reiterates the fact that services being provided may not be standard, up to date or appropriate. The services rendered by the few doctors working at PHCCs and CHCs does not necessarily guarantee high quality services if not supported by deliberate in-service refresher training. The non-recognition of some common risk factors for NCDs by most of the CHEWs also underscores the need for a comprehensive training on prevention and control of NCDs.

4.2.3 Monitoring and Evaluation

M&E for NCDs are vital in accessing disease burden as well as performance. They are also important in providing feedback on feasibility and effectiveness of NCD policies⁷⁴. Integration of NCD surveillance into the National Health Management Information System (HMIS) is essential as a basis for improving the capacity to handle the current and projected trends of NCDs⁷⁵.

Supportive supervision: Supervision can be viewed as an extension of training and organised systematically to produce accurate and timely data collection as well as logistics management for drugs and consumables⁷. Integrated supportive supervisory activities for PHC programs and services are planned and executed regularly for immunisation, MCH, nutrition, TB, malaria and HIV/AIDS with no obvious integration of any aspect of NCDs services supervision⁷⁶.

Surveillance: Surveillance for risk factors, determinants, trends in exposure and outcomes are crucial in designing interventions for NCDs⁷⁷. There is the absence of NCDs indicators in the SHDP and aggregated data for FCT in the 2011 statistical bulletin reveals an absence of NCDs in the reports from the PHCCs though the overall summary of data has hypertension and diabetes which is obtained from secondary and tertiary facilities. Reported mortality does not show deaths from NCDs however deaths from notifiable CDs, maternal and neonatal deaths is well documented²⁹.

4.3 Community engagements and NCDs prevention in FCT

Health services based on community involvement and participation are essential for sustainability as enshrined in Alma Ata declaration of 1978. This is important bearing in mind the cost and burden of chronic care for individuals and families who have NCDs⁷. WDCs are expected to be actively involved in IEC activities which have been identified as a major strategy to educate people and raise awareness on the risk factors of NCDs and prevention measures³. Health education and media campaign have played a prominent role in successful community based programs across the globe⁷⁸.

4.3.1 Usage of IEC materials, outreaches and awareness campaigns:

The production and distribution of IEC materials on diabetes, hypertension and other NCDs has received very little attention from the different levels of government responsible for organising effective PHC response. The Abuja government in 2009 initiated a community outreach health service delivery named *Mailafiya* aimed at providing basic PHC services free of charge to under-served hard to reach communities by engaging skilled and trained

volunteers. Services rendered include routine immunisation, diagnoses and treatment of malaria, routine drugs for pregnant women, HIV counselling and testing as well as screening and referral for hypertension and diabetes⁷⁹. Mozambique which is a low income country recorded successful awareness raising campaigns in diabetes and hypertension in communities by collaborating with school health departments, women department and nutrition department. Services for diabetes and hypertension were also integrated into existing HIV/AIDS programs⁷².

Health workers have been identified as major drivers for enhancing uptake of preventive health services like screening test for diabetes and hypertension in communities. The role of the mass media has been advocated to be complementary in increasing demand for services as well as providing health education^{80,81}. The fact that some WDC members get information on diabetes and hypertension from radio and television programs acknowledges this. There is therefore need to provide and link preventive services in the health system to mass media awareness programs.

Mobile health innovations using mobile phones are increasingly useful in mobilising and delivery services to both rural and urban populations across the globe with the involvement of the WHO and the International Telecommunications Union^{82,83}. This is possible in Nigeria with at least 70% of both rural and urban populations using a mobile phone²⁰.

4.3.2 Knowledge and views:

The knowledge and perception of WDCs on diabetes and hypertension and by extension some persons in the larger society is mixed-up with myths though they have the capability to better contribute to prevention activities if better equipped to make informed decisions. This mix-up in knowledge and perception is similar to an exploratory research finding done in Cameroon⁸⁴. A pilot study in Ezinihitte LG of Imo state, South East Nigeria suggests communities can be empowered to implement a population based primary and secondary prevention interventions for diabetes. It further posited that community traditional beliefs about illness should not be shoved aside as archaic customs or obstacles in implementing population based interventions, rather they should be viewed as opportunity to better understand belief systems that can be strengthened as well as identify misconceptions that could be addressed by dialogue. Communities can take the lead in mobilisation, health education, case detection, blood sugar measurements, referrals, and follow ups⁸⁵.

4.4 Policies and strategies contributory to NCDs prevention in FCT

The policy environment ought to provide a platform for the implementation of evidence based interventions for NCDs⁷. The devolved system of decentralisation existent in Nigeria's health system brings the PHC services in close proximity to other similarly devolved sectors of the economy for collaborative program implementation⁸⁶. Notable among these sectors are education and sports, agriculture and works services. The Nigeria health promotion policy formulated in 2006 acknowledges the need to tackle NCDs by collaborative and integrative programs across different sectors and across different levels of governance for optimum result⁸⁷. The policy proposed a health promotion committee for communities similar to the WDC but with emphasis on membership for faith based organisations, NGOs, civil society organisations and informal health care providers. The decision space for these decentralised units of governments at the ACs are however influenced by higher level authority which have a larger share of allocated resources and revenue generation leverages^{28,86}. Collaboration of the AC PHC departments with other key departments in the ACs for the purpose of integrated community engagements was not obvious from the findings. Occasional school health programs carried out by state level agencies did not link AC education and health departments for sustainability.

4.4.1 Integration of services in PHCCs

Nutrition and NCDs: The recognition by CHEWs and WDCs of certain dietary habit as contributory to the occurrence of diabetes and hypertension reemphasises the need to intensify nutrition education and healthy diet promotion with NCDs prevention included in their designs. The National Policy on Infant and Young Child Feeding in Nigeria was formulated in 2005 with the goal "to ensure the optimal growth, protection and development of the Nigerian child from birth to the first five years of life". It stipulated the promotion of exclusive breastfeeding for 6months and use of appropriate complementary feeding thereafter⁸⁸. Only 13% of infants were reported exclusively breastfed in the 2008 Nigeria Demographic Health Survey (NDHS)²⁰. The NDHS also reported a median duration of breastfeeding of about 18months as well as stunting prevalence in children of about 40%²⁰. The WMHCP nutrition component primarily seeks to address under-nutrition with interventions targeting childhood underweight, wasting and stunting. Growth monitoring and food demonstration focus on addressing underweight malnutrition in both routine and campaign activities for children under 5years⁴⁷. The role of breastfeeding as part of a life cycle approach in preventing major NCDs if properly incorporated and emphasised in health promotion messages may contribute to improving breastfeeding practices. Stunting and childhood under-nutrition are established contributors to

hypertension and diabetes later in life^{89,90,91}. The growth monitoring programs can also emphasise looking out for obesity in children both under and over 5 years.

MCH and NCDs: ANC offered at PHCCs provide routine capture of anthropometric measurements of pregnant attendees, BP measurements and urine test for protein and sugar³. These services are relevant to screening for diabetes and CVDs. The 2008 NDHS revealed that more than 70% of women attending ANC had their BP and weight measurement and also had their urine and blood samples taken for investigations. The recognition of integrating NCDs prevention services to MCH programs by policy makers and health managers is certainly a good one. The opportunistic screening of men who accompany their partners for ANC as mentioned by one CHEW is a good practice that can be formally incorporated into routine practice. Couple counselling is common in HIV counselling and testing for the prevention of mother to child transmission⁹² and can serve as a fulcrum to involve partners in screening and raising awareness for diabetes and hypertension.

4.4.2 Policies addressing risk factors for NCDs

At least 10 of the 15 leading risk factors in 2010 for most disease burden (as measured by Disability Adjusted Life Years) in Nigeria are contributory to NCDs. They include alcohol, tobacco, hypertension, high blood sugar, obesity and childhood under-nutrition⁹³.

Tobacco consumption: Prevalence of tobacco consumption in males is currently about 10%⁹⁴. Usage of tobacco products in Nigeria is regulated by a 1990 act which has been described as outdated though Nigeria is signatory to the WHO framework Convention on Tobacco Control (FCTC)^{95,96}. Cigarettes and other tobacco products are freely sold in shops and on the streets apparently due to the violation fine of only 200 naira (about 1 euro) and/or one month imprisonment in the act which restricts sales in public places and schools^{95,97}.

Tobacco was pronounced restricted at public places in 2009 by the government of Abuja; implementation was reported to be ineffective partly due to a lack of a concrete legal framework and more due to non-enforcement⁹⁸.

A bill aimed at domesticating WHO's FCTC has been passed by the legislative arm of government of Nigeria but is yet to be signed into law by the president⁹⁹.

There has been no engagement of the WDCs in anti-tobacco campaigns directly. Frontline health workers may not also be sufficiently informed on the role tobacco plays in contributing to the major NCDs other than lung diseases.

Alcohol abuse: Alcohol consumption lifetime prevalence in Nigeria is estimated to be about 20% in some regions¹⁰⁰. The National Agency for Food and Drug Administration and Control (NAFDAC) has functions in the control of the use and abuse of alcoholic beverages¹⁰¹. The alcohol control regulation has challenges similar to tobacco in terms of enforcement of existing laws though taxes are said to be high for wines, spirits and beers¹⁰⁰. Locally brewed alcoholic drinks like palm wine and local gin are much cheaper and are poorly regulated¹⁰⁰.

Unhealthy diet: The business districts of Abuja have numerous fast food restaurants (personal observation). Some offer traditional Nigerian dishes with high fibre content whilst others offer fast foods like hamburgers, pizzas and fries with high salt and calorie contents usually accompanied with soda drinks (annex-H). While this problem may be more in the urban settlements, it becomes important for health authorities to plan health promotion interventions according to the peculiarities of the community, whether rural or urban.

The successful promotion of iodinated salt as a way of addressing iodine deficiency¹⁰² may invariably add to the already high salt consumption in the traditional diets of many Nigerians¹⁰³ if information on the consequences of too much salt are also not disseminated¹⁰⁴ as implied in non-recognition of salt as a risk factor for hypertension by WDCs. NAFDAC regulates the production, sale and consumption of soda drinks, pre-packaged processed food, milk and dairy products including the regulation of breast milk substitutes^{105,106}.

Physical inactivity: Parks and gardens in Abuja are very popular as beer gardens and restaurants though they were originally conceptualised for exercise and recreation^{34,107}. The regular monthly exercise activities organised by government health agencies for state and federal level workers needs to be cascaded to the ACs as well as the private and informal sectors. The need to secure parks and garden for exercise related recreational activities could be spearheaded by relevant government agencies.

4.5 NGOs, donor partners, civil society and private sector involvement in NCDs prevention in FCT

Global declarations and commitment to reverse the trends of NCDs has not been accompanied by financial commitments as seen in CDs and MCH¹⁰⁸.

4.5.1 Partnership with local NGOs and civil society:

Majority of the policy makers complain that very little support come from local NGOs. Notable in the campaign against tobacco use are groups, individuals and organisations like journalists, lawyers, doctors, educationist,

child rights activist and environmental rights activists¹⁰⁹. NGOs, civil society and foundations have programs aimed at public enlightenment and community mobilisation that are largely fragmented¹⁷. The Diabetes and Hypertension Help Society (DHS) is an indigenous NGO that creates awareness on prevention and control of diabetes and hypertension. DHS organises outreaches to communities and institutions to offer free blood glucose and BP measurements. They also offer health education, referral services and medications to identified persons in the lowest socioeconomic class¹¹⁰.

4.5.2 Partnership with private health providers:

The synergy between the public and the private sector providers did not come apparent as a finding in this research. Though this was not set out to be an objective of the research, it is however difficult to ignore the role of the private sector health providers in expanding the scope of NCDs prevention activities at primary care level. There is clear need to incorporate and harmonise the activities of the private providers for a better response to NCDs prevention, especially in the areas of health education, screening, and appropriate referral to specialised care.

4.5.3 Donor partners and international NGOs:

The Olusegun Obasanjo Foundation (OOF) is a United Kingdom based NGO inspired by a former president of Nigeria. Its health improvement initiative focuses on the prevention and control of NCDs (with emphasis on diabetes and SCD), aiming to achieve this by providing grants to organisations involved in awareness and preventive health programs in SSA¹¹¹. The launch of the foundation took place in February 2013 drawing participation from the international community, political and business leaders from Africa. In attendance were Presidents of Nigeria, Liberia, Benin and Ghana¹¹². The International Diabetic Federation and the Nigerian Heart Foundation are also involved in community oriented programs. Though findings from the key informants indicates that international NGOs and development partners are not supporting NCDs prevention activities, initiative like the OOF which is recent may change the picture.

4.6 Reflections on the conceptual framework:

The framework has been very useful in categorising and analysing the various findings. It could be safe to assume that the core box (Implementation of equitable, effective and efficient NCD prevention plans and strategies at PHC level) would be achieved if the issues captured by the 7 surrounding boxes of the framework are addressed. However, the concepts of efficiency, effectiveness and equity were not sufficiently dealt

with in each element of the framework, though a few related issues were revealed.

In the course of analysing the findings, it became obvious that certain issues were intricately linked and had to be presented together. A good example is the link between political commitment and policy environment. Such linkages could have been made obvious in the design of the framework. The role of private healthcare providers and the importance of public private partnership could have been distinctly included in the framework; this was however limited by the study focus and design.

Chapter 5: Conclusions and Recommendations

5.1 Conclusions:

The non-inclusion of the NCDs component of the WMHCP in the SHDP has created a gap for effective, efficient and equitable implementation of NCDs prevention strategies in Abuja. Effective coordination for NCDs prevention in Abuja is lacking leading to fragmentation of activities carried out by different government agencies and NGOs. This lack of synergy among various stakeholders has led to minimal impact of these activities.

Federal and state level PHC agencies have not made sufficient progress in the implementation of NCDs prevention component of the WMHCP. The ACs PHC departments which are the platforms for organising preventive interventions and responses have invested little in NCDs prevention within their limited decision spaces.

With only 3% NHIS coverage, the adequacy of financial risk pooling and protection mechanisms is ostensible despite the introduction of CBHIS in selected communities.

Health financing by government and individuals is also inadequate and uncoordinated. Allocation of funds are not based on burden of disease nor cost effectiveness of intervention, hence curative care for NCDs at secondary and tertiary levels are receiving more attention than preventive interventions at primary care.

Poor quality care is provided to patients with diabetes and hypertension at all levels of the health system due to weak referral system and linkages between primary care and secondary care. Poor quality care is worsened by the deficiency in knowledge on management of diabetes and hypertension by CHEWs and other frontline health workers. The knowledge gaps of CHEWs results from lack of in-service training and job aids for the early detection, management and prompt referral of hypertension and diabetes.

Opportunities to integrate NCDs prevention interventions to established programs in CDs and MCH have not been fully exploited.

Sufficient knowledge of NCDs risk factors by the general population is lacking. WDCs have not been involved in the design, production and dissemination of IECs on NCDs despite their experience in similar activities for CDs and MCH.

M&E for NCDs suffers neglect in the areas of surveillance and supervision at PHCCs and in the community. Timely and accurate documentation of disease trends and risk factors in the HMIS from PHCCs ought to serve as a platform

to develop and commission research for NCDs prevention. M&E is necessary to plan and determine appropriate resource mobilisation for capacity building.

There is need to review existing policy documents to conform with recommended and international best practices within locally available, affordable and attainable resources. Such reviews should also aim at harmonising the conflicting position of different policy documents for NCDs in the Nigeria's PHC system.

5.2 Recommendations:

In the light of the above and based on reflections on insufficient human, financial and material resources for health, it is still possible to achieve much and progress towards implementation of a more effective, equitable and efficient NCDs prevention package in Abuja. The following are therefore recommended:

Coordination, integration and partnership:

1. There is need for the FCT government to inaugurate a central coordinating body for the prevention and control of NCDs in the FCT saddled with responsibility of harmonising and integrating interventions of different government agencies at different levels using the existing platforms in the PHD and PHCDB. There is also need to develop and sustain partnerships with NGOs, private sector and development partners for the purpose of achieving a concerted response to NCDs prevention in FCT through implementing the WMHCP for NCDs. Regular forums should be held to build consensus and identify opportunities for service integration. Coordinating units for NCDs at ACs should be sustained and strengthened by such central coordination.
2. The NPHCDA should establish a NCDs prevention and control department that will directly drive the effective implementation and regular review of the NCDs prevention component of the WMHCP through PHC in partnership with state governments, LGs, NGOs, private healthcare providers and other stakeholders.

Finance mobilisation and allocation:

1. Allocation of health resources by the PHCDB and ACs should be objectively done using disease burden and cost effectiveness. Allocations should also be earmarked for NCDs prevention at all levels of government to ensure availability of funds amidst competing demands.

2. The NHIS should review benefit package to include medications for diabetes and hypertension while health insurance companies should be mandated to invest in population based primary and secondary preventive interventions. Efforts should be intensified to increase the coverage of the NHIS and CBHIS for risk pooling.

Capacity building:

1. The NPHCDA should develop a curriculum for the in-service training of CHEWs and other frontline health workers and standard protocols on their expected roles in the management of NCDs. A critical mass of experts that will lead to the training of trainers should be aggregated. The eventual trainers should be drawn from the existing health system comprising the 3 tiers of service delivery to ensure sustainability. The hub and spoke referral linkages of PHCCs to GHs as already being implemented in the MSS should be adopted and adapted for NCDs.
2. Capacity inventory in the Abuja PHC systems specific to NCDs should be conducted by the PHCDB to assess needs in manpower, tools, technology and equipment in Abuja for the purpose of resource mobilisation and advocacy to political office holders.

Community engagement and public awareness:

1. WDCs should be involved by the ACs and PHCDB in IEC development, production and dissemination to ensure content acceptability. There should be a deliberate, consistent and coordinated use of mass media and where possible newer technology like mobile phones and internet social media to enlighten the public on risk factors, symptoms and availability of services for diabetes, hypertension and other NCDs. Community dialogues and participatory learning and action activities should be conducted with emphasis on NCDs prevention. Where resource constraints make such activities immediately impossible, opportunity for integrating with similar activities in other disease control programs should be negotiated.
2. ACs health departments should initiate monthly keep fit exercise at the ACs headquarters to promote healthy living in the increasingly urbanising towns. They should collaborate with other ACs departments, NGOs and private sector within their jurisdiction.

M&E, research and reviews:

1. The NPHCDA should develop goals, targets and indicators for NCDs prevention and control to enhance accountability and generate useful

information for research. Integrated supportive supervision TO PHCCs by ACs and PHCDB should incorporate NCDs and risk factors indicators.

2. NPHCDA and PHCDB should commission and encourage researches with different methodologies in the area of NCDs prevention to develop better strategies and technologies as well as enrich the periodic reviews of the WMHCP and SHDP. Research interest should include integration of NCDs to existing services, referral linkage mechanisms and use of modern technologies for health promotion and surveillance.

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Annexes

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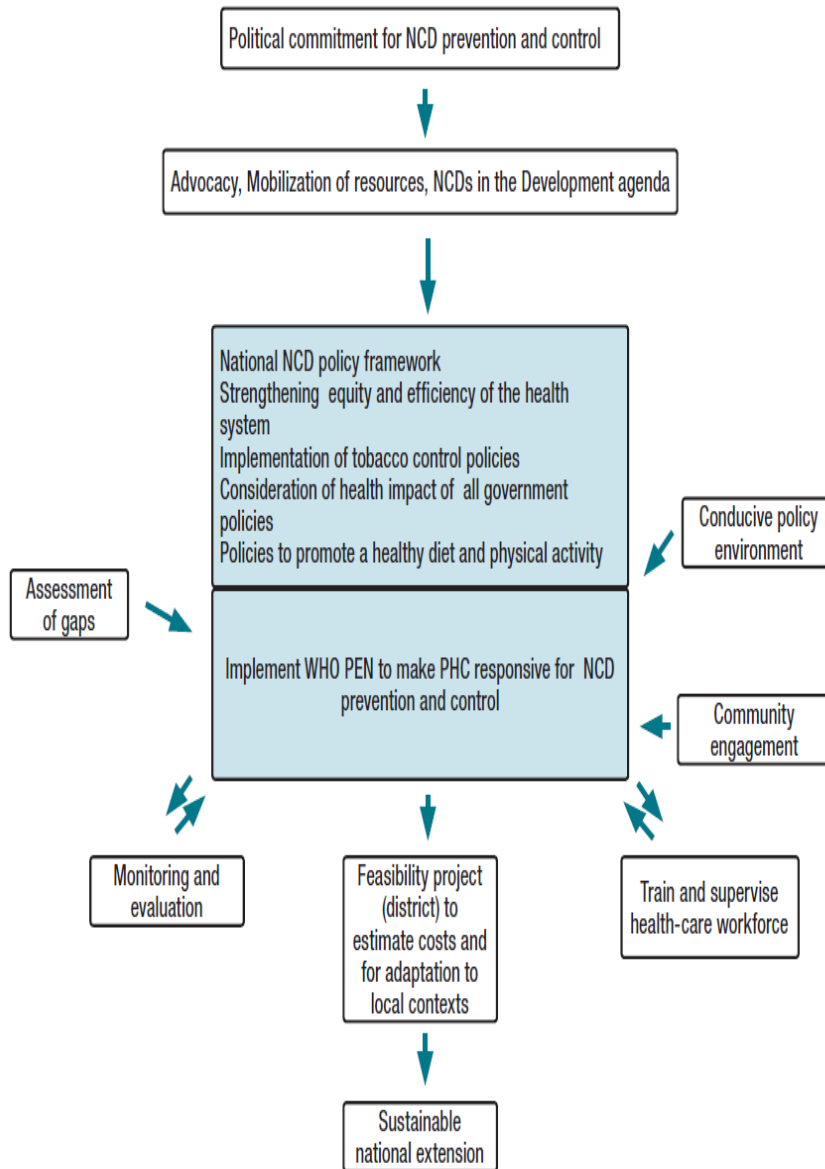
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Annex A: WHO conceptual framework for implementation of Package of Essential Non-communicable Disease Interventions for Primary Health Care in Low-Resource Settings



Source: WHO PEN (2010)

Annex B1: Application form for ethical approval

FOR OFFICE USE ONLY	Date of submission	Date considered	Approval granted?
Application Number			Yes/no
Signatures			(Chair)

THIS FORM MUST BE TYPEWRITTEN



Royal Tropical Institute

RESEARCH ETHICS COMMITTEE

ALL QUESTIONS MUST BE ANSWERED. ANY FORM STATING "SEE PROTOCOL" WILL BE RETURNED.

(This form must stand complete in itself)

PLEASE PROVIDE ONE COPY OF THIS FORM AND OF THE ORIGINAL PROPOSAL AND A TABLE OF ACRONYMS AND REFERENCES

AS FAR AS POSSIBLE YOU SHOULD RESTRICT ALL ENTRIES TO THE SPACE PROVIDED ON THIS FORM

Please use a typing font which is easily distinguishable from the questions of the form

NB This form is available on diskette from the Secretariat.

Have you submitted this proposal to the Royal Tropical Institute before?:

YES

Date and outcome: **submitted 23rd April 2013-Clarifications and amendments required**

If you are re-submitting a proposal, you need only provide the title of the project and complete those sections of the form where changes have been made. Please emphasize how the proposal has been amended in the light of previous recommendations from the Royal Tropical Institute Research Ethics Committee.

If this proposal was proposed before to the KIT REC or elsewhere what was the outcome?

Accepted Pending Rejected Date:

NAME OF APPLICANT: OKPETU EMMANUEL

If this proposal is for work that will go towards a higher degree (e.g. MSc or PhD), please state name and Area of Supervisor (*The supervisor needs to sign signifying agreement with submission*) :

NAME & SIGNATURE OF SUPERVISOR:

NAME & SIGNATURE OF LOCAL SUPERVISOR:

PARTICULARS OF PROJECT AND INVESTIGATORS

Project title:

Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of Primary Health Care in the Federal Capital Territory

Principal investigator(s)

Names: OKPETU EMMANUEL

Positions: MPH/ICHD STUDENT, ROYAL TROPICAL INSTITUTE, AMSTERDAM

Institution responsible for the research

Name: ROYAL TROPICAL INSTITUTE, AMSTERDAM

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The Netherlands

E-mail and phone numbers: Telephone: +31-20-5688 256/239/459/657

Email: communication@kit.nl

Collaborating institutions

List all collaborators (Please include all overseas collaborators and give their affiliations, qualifications and role in the study).

Co-investigators, affiliation and role

NIL

Contact details

SECTION A

STUDY OUTLINE (To save paper the form provides the issues you need to address. You can use more space than is provided in the form)

A.1 TITLE OF PROJECT:

Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of Primary Health Care in the Federal Capital Territory

A.2 EXECUTIVE SUMMARY

Give a short overall summary of the proposal using lay terminology (Background and justification, purpose and design of the study).

Non-communicable diseases (NCDs) are a group of diseases that cannot be transmitted from one person to another. The major non-communicable diseases that affect every region of the world are cardiovascular diseases (like hypertension and heart disease), diabetes, Cancers and Chronic lung diseases. These major NCDs also share some common risk factors namely tobacco use, alcohol abuse, unhealthy diet and physical inactivity (or lack of exercise). These diseases are now seen to be increasing in Low and middle income countries like Nigeria. One major contributor to the increase in the risk factors is globalisation. This is now leading to a double burden of disease since communicable diseases are still a problem in Nigeria. Diabetes and Cardiovascular disease are among the commonest NCDs in Nigeria and FCT with clear links to modifiable risk factors.

The Federal Capital Territory (FCT) of Nigeria is a centrally located capital that has the challenges of globalization. An Essential health Package (EHP) is a set of health services that should be available to people at the first level of care. The EHP of Nigeria has a component that is meant to address the prevention of NCDs. The Primary Health Care level is the entry level for Nigeria's Health system and is responsible for delivery primary care through Primary health centres (PHCs). It is also responsible for coordinating health promotion and preventive strategies at community level while fostering community participation and facilitating referral services to higher level care. The PHCs are therefore meant to implement the EHP. The FCT recognizes the importance of this component in its health plans, but lack specific strategies for NCDs. Current trends already show an increase in NCDs in the FCT. Research into NCDs is still very poor in Sub Saharan Africa more so in the FCT of Nigeria. There is non-prioritization of NCDs and preferred investment for communicable diseases and curative intervention. This study therefore aims to explore the factors that determine the implementation of NCDs prevention component in the EHP of FCT. Interviews and group discussions will be carried out among health workers and community representatives in selected parts of the FCT. Some health policy makers and planners for FCT will be interviewed. Selected clinics in the FCT will be visited and inspected for the presence of basic equipment for screening NCDs. Global and National publications on NCDs and available records of diseases in FCT will also be looked at to get a broader picture of the issues. Hopefully, findings from the study could provide preliminary information that can be used as advocacy to policy formulators on NCDs prevention as well as provide inspiration for further research.

A.4 OBJECTIVES

Overall goal of the research

To explore the factors which determine the implementation of NCDs prevention policies and plans in Nigeria's Essential Health Package at the Primary Health Care level in the Federal Capital Territory in order to make preliminary recommendations to policy makers, health planners and health program implementers and advocate for further research and reviews.

Specific objectives:

1. To describe and outline existing policies and strategies on NCDs prevention and their implementation in FCT
2. To explore knowledge, views and practices of Community Health Extension Workers in Primary Health Centres in relation to NCDs prevention policies and strategies in FCT
3. To explore the availability and usage of IEC materials and basic equipment for screening and diagnosis of NCDs in Primary Health Care Centres in FCT

4. To explore the knowledge, views and perception on NCDs among members of Ward Development Committees in FCT
5. To use findings in advocating for further research and reviews on implementation of NCDs prevention component in the Essential Health Package to policy formulators, implementers and health planners in FCT

A.5 METHODOLOGY

Outline how you intend to achieve the objectives of the study.

Guidance notes:

For each objective:-

- *define the issues/ variables to be explored*
- *define the techniques to be used (e.g. structured, semi-structured interview, focus group discussion)*
- *define the target population*
- *describe the rationale for each of the data collection methods.*

*Give some detail on how methods are already validated (e.g. literature, earlier use) and how you will pre-test/ pilot them
Please provide the draft research instruments in the annex*

OBJECTIVE 1: To describe and outline existing policies and strategies on NCDs prevention and their implementation in FCT

Issues: types of policies, strength of policies, adequacy of policy, implementation of policy, outlined strategies, plans, availability of guidelines, types of guidelines, compliance to policies, and use of guidelines by health care providers.

Techniques: documentary reviews: policy documents and statements will be looked at to determine contents and legal or political instruments that give them life. Outlined strategies will be explored to determine their scope of implementation. Some information related to this may be obtained from semi structured interviews and focus group discussion.

OBJECTIVE 2: To explore knowledge, views and practices of Community Health Extension Workers in Primary Health Centres in relation to NCDs prevention policies and strategies in FCT.

Issues: Basic knowledge about NCDs and risk factors, knowledge of existing policies on NCDs, knowledge and use of guidelines, knowledge and use of strategies and job aids. Participation in training and continuing education on NCDs risk factors, policies and guidelines. Perception and knowledge on burden of NCDs and community based activities for NCDs prevention. Other issues are availability and use of screening tools and equipment, perception and views on appropriateness of available tools and guidelines. Issues on job supervision by Health managers and policy makers for PHC activities and specifically for NCDs.

Techniques: focus group discussions (FGD). The target population is a group of 12 Community Health Extension Workers (CHEWs), 2 from each area council, 50% females. This will pull the experiences of the CHEWs from the different locations with each building on the expressed views of others. It will also produce commonly shared experience of the group and identify some isolated experience (outliers). Being Health Care Workers of similar cadre and rank, they do have some shared vision and would likely express themselves freely.

OBJECTIVE 3: To explore the availability and usage of IEC materials and basic equipment for screening and diagnosis of NCDs in Primary Health Care Centres in FCT

Issues: Presence and use of flyers, wall posters, job aids for with NCD messages. Presence and use of Blood Pressure measuring device (stethoscope, sphygmomanometer), weighing scales, stadiometer (to measure height), glucometer (for blood glucose) urine test strips (urinalysis), blood chemistry (for blood electrolytes, urea and creatinine). The appropriateness of these tools will be explored in the FGD with the CHEWs.

Techniques: *Observation* and inspection of selected PHC clinics. These observations will be mostly passive except for a few questions to staff on duty to seek clarification and direction on where to find certain items. *FGD* with CHEWs and *Semi structured interviews* with key informants should provide additional insights.

The semi structured interviews will also explore issues relating to supervision of CHEWs and other health workers by health managers and policy makers who also serve as periodic supervisors and monitors of PHC activities.

OBJECTIVE 4: To explore the knowledge, views and perception on NCDs among members of Ward Development Committees in FCT

Issues: knowledge, views and attitude on Major NCDs, knowledge and perception of determinants and risk factors for NCDs, Opinion on importance of NCDs prevention, knowledge and perception of solutions, opinion on availability and obstacles on services for NCDs, sources of information on NCDs, knowledge and views on prevention policies including opinion on advantages and disadvantages.

Techniques: *FGD* with members of 2 ward development committees in 2 Area council, one urban and one rural.

A.6 PARTICIPANTS

Please provide the following information on the participants *with/from* whom you *expect to* be collecting data:

A.6.1 Age / Sex: (please enter the expected number in each of the boxes)

	Neonates (<28 days)	Infants (1-11 months)	Young children (1-9 years)	Adolescents (10-19 years)	Adults (>19 years)
Males					22
Females					20

Guidance notes:

This age/sex breakdown helps convey how vulnerable the participants will be

If you are unable to give precise figures, state estimates and give an explanatory sentence in the space below

A.6.2 Describe how the participants are to be recruited?

Guidance notes:

You should outline the procedures for recruitment of each group of participants, include details on:

- *the setting (e.g. on the ward, out-patient department, factory floor, in the home)*
- *inclusion and exclusion for selection, if relevant (e.g. “Women of child-bearing age will be excluded”)*
- *who will recruit*
- *If patients are recruited or patient records are used state if the person has routinely access to the patient e.g. treating clinician, nurse*
- *how the recruitment will be carried out in detail*

Study population recruitment:

The study population is drawn from the FCT residents. They are of two main categories: Community Health Extension workers (CHEWs) and ward development committees (WDC). The CHEWs will be recruited centrally through their professional association, the Association of Community health Practitioners of Nigeria, FCT branch. The engagement of the professional body will reduce the effect of selection bias that may occur if the participating CHEWs are recruited by the AC Health Department management who are their direct employers as a result of power relations. The CHEWs are direct stakeholders in their professional association and such ‘master-servant’ power relation may not exist. In addition,

the professional body is involved in regulation of the practice of CHEWs and may feel obliged to contribute to a research that could improve **practice**. A letter will be written to the union informing them of the research and requesting them to select 2 CHEWs from each Area Council (AC), one male and one female to participate in the research. Evidence of ethical approval will be attached to the letter. The Heads of department (HOD) of Health in the 6 AC will also be similarly written to intimate them of the research and request release of the CHEWs that would be chosen by their professional associations. The focus group discussion for the CHEWs will take place at a central location agreed with the professional association.

The WDCs will be contacted with a letters written to the chairmen of the committees through the HOD health of the respective AC. The discussions with WDC will take place in the respective town halls of the selected wards or alternatively the Primary health centre. Each of the Key informants will be contacted by letters and/or phone and/or email informing them and seeking their preliminary consent for the interviews sessions. The interviews with key informants will hold in their offices if obliged. Otherwise, mutually agreed venues for interviewee and interviewer will be used.

A.7 PROCEDURES

A.7.1 What procedures or methods will be employed in the collection of data (e.g. patient interviews / focus group discussions) and by whom?

Attach additional sheets if necessary

Procedure	To be carried out by (profession):	Experience in procedure:
<p>6 Key informant interviews (semi structured) 1 Policy Maker at the National level (National Primary Health Care Development Agency) 1 policy maker at the state level (FCT Primary Health Care Development Board) 1 endocrinologist at the University of Abuja Teaching Hospital Interviews will be tape recorded if permitted 2 Area Council Health department Heads (Local government level) 1 cardiologist from the University of Abuja Teaching Hospital</p>	<p>Principal Investigator Medical practitioner who has worked in the Primary health care setting of the study area</p>	<p>Some experience in community mobilization and dialogue and previous experience in facilitating Participatory learning and Action at the community level. 4-5 years combined community based relevant experience in Kuje Area Council. Trained counselor for HCT. Completed a module in Health systems Research in KIT with emphasis on qualitative research.</p>
<p>1 Focus Group discussion (FGD) for Community Health Extension Workers (CHEWs) Discussions will be tape recorded if permitted</p>	<p>Principal Investigator & Health Promotion Officer</p>	<p>Health Promotion officer: Masters in Health Promotion from Karolinska Institute, Sweden. BSc in parasitology. More than 10 years' experience as a scientific officer in Primary health care setting, currently head of health promotion and education unit in one of the Area councils. Organizes regular community dialogue and stakeholders' forums in Kuje AC</p>

<p>2 FGD for Ward development committees Discussions will be tape recorded if permitted</p>	<p>Principal Investigator & 2 Community Health Officers (CHO). 1 CHO for each of the FGD with the WDC</p>	<p>One CHO is a Community social mobilization officer in similar communities. Involved in community dialogue and sensitization for over 15 years especially with EPI programs in Kuje AC. The other one has similar experience in EPI programs and malaria control programs.</p>
<p>Observation and inspection of 6 selected healthcare centres (one in each area Council) with checklist</p>	<p>The research team of 4 will be split in 2 teams and each team will visit 3 Primary healthcare centres</p>	<p>PI and the health promotion officer have training and experience in integrated supportive supervision</p>

A.7.2 Please indicate that the persons are competent to carry out the techniques used as identified in A.5.1 are competent to carry out these procedures. List any training of staff which may be required prior to commencement of the study.

Members of the research team have relevant experience for the study. However, an inclusive joint training meeting and discussion will be done for 2 days to further develop and discuss topic guides, check lists, have practice sessions and plan strategies, logistics, pretest and schedules.

The 2 Community Health Officers (CHOs) will each assist in one FGD. They will receive training and practice sessions with tape recording equipment as well as note taking. Both CHOs will be fluent in English, Hausa and Gbagyi which are the most commonly spoken languages in Abuja. They will thus serve as interpreters for the PI in circumstances needing clarification where English is not sufficient as well as responding to queries on the consent forms.

The CHOs will be assisting on FGD for WDC based in AC council were they are not known i.e. different from the AC where they work. They will also be involved in observation of selected PHC clinics using check list (annex) in company of the PI or health promotion officer. Their familiarity of the workings of the PHC clinics would be of great assistance in the exercise. The CHOs who will be female will also be useful in offering psychosocial support to female participants if necessary. CHOs will not be involved in the FGD with CHEWs because they belong to the same group of community health practitioners' cadre.

The research will also serve as a capacity building opportunity for the CHOs in health systems research.

A.8 SAMPLING

A.8.1 Please justify your choice of sampling method(s) and if relevant sample size(s); For qualitative research provide rationale and criteria for the selection of participants for each technique

Purposeful sampling would be employed. CHEWs with 5 to 10 years' experience will be purposefully selected in order to get reasonable depth on issues to be raised based on their experience. The maximum variation type for the CHEWs will be used in order to have representation from each of the 6 Area Councils of the FCT. The variation will also be increased by ensuring gender parity in selection. This variation will ensure that some perspective from each of the 6 AC is captured in a group that also shares homogeneity in being of the same cadre. 2 CHEWs from each council will give a total of 12 CHEWs,

6 females and 6 males. The CHEWs are the single highest cadre of health workers at the PHC level accounting for almost 50% of the total PHC workforce. They are present in every functional PHC and sometimes the only cadre available in some.

The WDC are purposefully selected to give contrasting groups with one from the urban (Abuja Municipal) and one from the rural (Abaji) AC. Abuja Municipal AC is the most urbanized of the 6 AC while Abaji is the most rural. In addition, the WDCs as constituted are inherently varied as they represent different stakeholders in the community. Varying the WDC according to urban and rural will give an insight to the similarity or dissimilarity of the knowledge and perception about NCDs among urban and rural residents. Though this may not be generalizable, it may give useful insights on the possibilities as affected by urbanisation. The WDC are also traditionally varied in their composition with representation from stakeholders in the catchment community of the health centre. These stakeholders include traditional leaders, women leaders, youth leaders, religious leaders, school teachers and representative of the PHC. The PHC representative will however be excluded from this discussion with the WDC to avoid the possibility of influencing the group dynamics and knowledge base. WDCs usually have at least 20% female membership. 10 WDC members will be recruited for these FGD in each of the 2 selected wards from the 2 contrasting AC.

DATA ANALYSIS

A.8.2 Explain how you will analyse the data and, if applicable, which software you will use.

Guidance note

- *If applicable explain what statistical method you will use to analyse the data (relate these to each of your objective).*
- *For qualitative data describe the conceptual framework you will use to analyse the data*

Data will be first sorted according to techniques and then assigned codes where applicable. Reference will be made to tape records when also applicable for clarification and correlation with notes taken.

With the aid of the pretest and expected issues based on the conceptual framework, broad theme categories will be jointly developed. Responses to each question in the FGD will be transcribed chronologically under each question with tags indicating which respondent (no names). Similar responses will be grouped and bundled together for subsequent entry in a spreadsheet form under the preset themes or to form emergent themes if not matching with preset themes. Interviews will have separate themes and responses from each interviewee will be sorted under the themes. Linkages will be identified and noted between the different FGDs and between FGDs and the interviews. Commonalities and outliers will be identified and outlined. These will be used to draw inferences on specific issues in terms of agreement and disagreement. Triangulation will be looked out for with regards to view from policy makers, health workers and community members. Similarly distinctly contrasting views and opinions will be highlighted. The checklist for selected health centres will be collated and accessed for the cumulative availability of the selected items in the 6 clinics and how they may correlate with information obtained from the FGDs and interviews.

Data will be entered into Microsoft excel for proper visualization, organisation and storage with back up file created as e mail attachments. All members of the research team have fair knowledge of the use of Microsoft office applications.

A conceptual framework has been adapted from the framework for the implementation of Package of Essential Non-communicable (PEN) Disease Interventions for Primary Health Care in Low-Resource Settings (annex 1). This PEN framework was developed by the WHO in 2010 as a guide for the implementation of an essential package for the prevention and control of NCDs at the PHC level in low resource settings. This PEN framework is thus suitable for a research on NCDs prevention in the FCT being in a LMIC country. It has however been modified to focus on the concept of implementing prevention plans and strategies for NCDs within the scope of this study.

The original framework had two core boxes with one highlighting implementation of the WHO Prevention and control package for NCDs. The other outlined the different government policies on NCDs. Nine boxes were positioned radially in the original framework to reflect different thematic areas as they contribute to the prevention and control concept. Three of them that are aimed at gap assessment, cost feasibility estimation at district level and sustainability of National Extension have been excluded because they are beyond the scope of this study. The remaining core box has been rephrased to reflect the desired outcome for implementation of NCDs prevention plan at PHC level. The surrounding 7

boxes have been rearranged with some rephrasing to reflect the different themes that should contribute to the effective, efficient and equitable implementation of plans and programs for NCDs. The 3 themes at the top are essentially related to policy and governance. The addition of technologies and tools to the framework was coined from one of the articulated broad concepts in the complete document of the WHO package of Essential NCD for PHC in low resource settings. Community engagement remains an essential part of this adaptation as it was in the original framework. The bottom two boxes are linked to the health system and health workforce capacity for service delivery, supervision, monitoring and evaluation. Feedback mechanisms are very essential for these bottom placed themes hence the two way arrows.

QUALITY ASSURANCE and STUDY LIMITATIONS

A.8.3 What procedures are in place to ensure the quality of the research?

Data management

(sub-questions from protocol USR module)

Data will be transcribed within 24 hours of a FGD or SSI when feasible. The team will analyze the data jointly and will make necessary corrections based on feedback and experience from daily activities.

A.8.4 Explain expected limitations of the study design and how you will deal with these limitation

The study design being exploratory may not be generalizable. However, a literature review will be done to synthesize evidence that could enhance the validity. The use of different techniques (FGD, SSI, observations) will not only triangulate the study findings, but will also increase validity.

The study is also limited in scope because of time and financial resource constraints as it is part of a thesis work for the award of a master degree in public health. The implication is that concrete conclusions may not be reached, however the study will serve as a pointer to areas needing additional research and the process could be a tool for advocacy.

Some members of the WDC may not understand the English Language. This however can be remedied by the research team members who are fluent in the commonly spoken Hausa language and/or Pidgin English (a corruption of the English language widely spoken in Nigeria).

A.9 DISSEMINATION OF RESULTS

Please outline what plans you have for dissemination of results.

Guidance notes:

Where possible a mechanism should be in place to inform study participants of the outcomes of the study.

It is important that important study findings are made known to local services / policy makers before they are discussed (e.g. at international scientific meetings)

There will be conduction of a stakeholders' forum to discuss and disseminate study reports. Stakeholders to be invited include representatives of the NPHCDA, FCT Primary Health Care Development Board, National Agency for Food and Drug Administration and control (NAFDAC), the FCT Health and Human services Secretariat and all Area Council Health Departments. Also to be invited are representatives of the various communities like traditional, religious, women and youth leaders including some study participants. WHO and representatives of various professional bodies like the Association of Community Health Practitioners, Nigeria Medical Association, Pharmaceutical Society of Nigeria, National Association of Nurses and Midwives and Medical and Health Workers Union. The political leadership of FCT and the Area councils will be invited. The FCT departments of Agriculture, Youth and Social Development and Education are to be invited too. Findings will also be communicated to study participants and the Royal Tropical Institute Amsterdam. The report will be published in reputable journals and presented at relevant public health events.

A Planning and Time line

Guidance notes:

- Please provide a time line of the research, indicating the time when it will be carried out,
- Please indicate the time needed for the different components

TimeLine activity \ weeks	April				May				June				July				August				September-December
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Submit proposal to FCT health Research Ethics Committee for consideration	■																				
Submit proposal to KIT Research Ethics Committee for consideration			■																		
Obtain approval from FCT health research ethics committee								■													
Obtain approval from KIT research ethics committee									■												
Principal investigator takes off for Abuja from Amsterdam/KIT											■										
Constitution of research team									■	■											
All-inclusive training of team members											■										
Develop topic guides, tools and protocol											■	■									
Conduct pre-test											■	■									
Corrections and adjustment of tools											■	■									
Advocacy/team building and community bonding/scheduling											■	■									
Field work (FGD/Interviews) and data analysis													■	■							
Principal investigator return to Amsterdam/KIT															■						
Data review and incorporation into thesis writing															■	■					
Thesis submitted																			■	■	
Stakeholders forum/dissemination meeting organised																					■
Iterative review and follow up of all processes																					■

A Financial implications and Budget

Guidance notes:

- please provide a budget for the research
- please indicate how the financial implications will be catered for

Activity/description	Unit cost(Naira)	Approximate Unit cost (Euros)	Total cost (Naira)	Approximate Total cost (Euros)
Return Air ticket to and fro Abuja	190,000	900	190,000	900
Transportation refund for participants in FGD with 12 CHEWs	1000	5	12,000	60
Light refreshments for FGD with 12 CHEWs	200	1	2,400	12
Transportation refund 2 FGD with WDC of 10 persons each (20 persons total)	1000	5	20,000	100
Light refreshments 2 FGD with WDC of 10 persons each (20 persons total)	200	1	4,000	20
Local transportation for research team of 4(15 working days over 3 weeks)	4000	19	60,000	285
Lunch and refreshments for 4 research team for 15 days	1000	19	60,000	285
Light refreshment during interview sessions for 6 persons	200	1	1,200	6
Stationeries, photocopying, photography and documentation	10,000	47	10,000	47
Communication (telephones, internet connectivity)	15,000	71	15,000	71

Total			374,600	1786
Total + 10% unforeseen cost			412,060	1965

Source of income	Amount (Naira)	Amount (Euros)
Nuffic grant	179,350	850
Personal savings	232,710	1115
	412,060	1965

SECTION B ETHICAL CONSIDERATIONS

CONSEQUENCES FOR THE LOCAL COMMUNITY / ENVIRONMENT AND PATIENTS

B.1 State the country(ies) and town(s) / district(s) where the work will be carried out.

The study will be in the Federal Capital of Nigeria and will involve selected participants across the 6 local councils (Area Councils) namely Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje and Kwali.

B.2 Describe the setting in which the study will be carried out (e.g. community centre / home / village / District Hospital / Health Centre)

The FGD for WDCs made up of community representatives will be carried out in the Primary Health Care Centres where the WDC meetings usually hold. Timing for these FGD will be based on the time suggested by the community members usually after their daily economic activities. The possibility of a mid-day meeting is there since they sometimes hold their monthly WDC meetings middays.

The FGD for the selected group of CHEWs (2 from each Area Council) will be held in the conference hall of the Local council secretariat of Kuje Area Council which is centrally located for the health workers. Timing to be suggested for this FGD will be midday of a working day.

The semi structured interviews will be done in the offices of the policy makers and health managers otherwise a mutually agreed location within the Territory will be used. A time within working Hours will be sought, otherwise if the interviewee prefers a time after normal close of work at 4pm, then the interview can be scheduled then.

B.3 Outline the potential adverse effects, discomfort or risks that may result from the study in the following areas:

B.3.1 Participants

Guidance note:

It should be borne in mind that interviews and focus group discussions may sometimes trigger painful or distressing memories (e.g. questions about sexual practice or the death of a child)

Possibility of sensitive topics related to illness and death from chronic NCDs that may evoke memories of such occurrence in a family member or friend, being unintentionally mentioned at interviews and discussions.

Opportunity cost of missing out on economic or social activities as a result of time to be taken for the interviews or discussions.

B.3.2 Investigators

Guidance note:

Social science investigators may be exposed to narratives of violence or severe grief

Narratives of grief from participants' individual and/or family experience with non-communicable diseases.

B.3.3 Members of the public

No obvious effects on the general public as a result of the study

B.4 Outline what steps will be taken to minimize the adverse effects, discomfort or risks described above.

B.4.1 For participants

Guidance notes:

It may be necessary to ensure that counselling or other relevant services are available. Please indicate what will be available if relevant, and will be available at the Consent Form.

Reassurance and counseling will be offered to participants when necessary as a form of psychosocial support.

The consent forms will contain detailed explanation of possible discomforts. Participants would be assured of confidentiality as much as possible and freedom to participate and withdraw from the processes at any time without fear of reprimand or victimization. Explanations of the different aspects of the consent form and the research will be volunteered to participants by the research team.

Participants will be encouraged to ask questions and seek clarity on any issue they consider important with respect to their participation. Telephone Numbers and contact details of the local ethics committee and administrative authority granting permissions for the research will be made available to the participants for further enquiries or clarifications whenever they choose to do so.

B.4.2 For investigators

Guidance notes:

Where the research may involve adverse experiences for investigators (see B.3.2), de-briefing / support meetings may be important.

The pre-implementation training will emphasize the potential of sensitive topics being raised that may be discomforting to participants and or facilitators and the need to be courteous and offer counseling and support to participants when necessary. Daily review meetings will be held after every set of daily assignments to share experiences and jointly analyze data. Such meetings will aim at rendering support to each other and foster team building.

B.4.3 For members of the public

May not be necessary

B.5.1 What demands will this research place on local health services?

Some CHEWs may be absent from their duty post for a day if the agreed date of the FGD coincides with their working and shift duty hours.

B.5.2 Detail how the design of the research project takes into account the above demands.

Prior notice to the Health department and health workers union in the process of recruitment would suggest that arrangement may be made to cover for this potential disruption.

B.6 What steps will be taken to ensure privacy and confidentiality for participants?

Names of participants will be obtained for the purpose of identity and obtaining consent but these names will not be linked directly to comments and responses made by individuals during the discussions and interviews. Information obtained on bio data before commencements of interviews and discussions or from consent forms will be kept in a separate confidential folder to be kept securely away by the principal investigator with access to only research members for specific reasons related to sorting data. The names will be linked to contents of interviews by ID numbers agreed with research team members. FGDs respondents will be identified by tags e.g. FGD for the rural and urban WDC will have identification of respondents (e.g. FGD-R-WDC-rural-respondent 1, FGD-R-WDC-respondent 2, FGD-R-WDC-respondent 3, FGD-U-WDC-rural-respondent 1, FGD-U-WDC-respondent 2, FGD-U-WDC-respondent 3 etc.). Similarly, respondents in FGD for CHEWs will be tagged. (e.g. FGD-CHEW-respondent 1, FGD-CHEW-respondent 2, FGD-CHEW-respondent 3 etc.). Participants will be specifically told that their comments and contributions will be used without their names or identity linked to it, rather the substance of their contributions is what matters. They will be assured that only the research team will have access to the personal details that will be initially obtained to aid them in sorting the data. This details and recorded interview/discussion will be destroyed after a maximum of 24 months.

SOCIAL AND CULTURAL SENSITIVITY ISSUES

B7.1 Describe what cultural and or social sensitivities your research raises

Issues relating to diet and lifestyle would be discussed and may be sensitive to some individuals.

Use of alcohol and tobacco has become part of some cultures. Salt and carbohydrate are traditional diets that may become part of the discussions.

B7.2 Explain how you plan to deal with cultural and social sensitivities within your research and how you will minimize potential risk.

The research is principally aimed at eliciting knowledge and perception of the target population on NCDs and does not aim at being judgmental. Participants are to be encouraged to express themselves with different topics without making them feel wrong about their perceptions. Alternative views will be solicited from within the groups rather than volunteered by the facilitators (research team members)

GENDER ISSUES

B8.1. Describe how the research addresses a demonstrated public health need and a need expressed by women and/ or men

Alcohol and tobacco are risk factors for NCDs that are commoner in Nigerian men. Hypertension and other cardiovascular disorders are also more prevalent among males. Female/male disparity for diabetes is not clear cut. Gender roles of women may restrict their physical activity. Women are usually much more involved in food preparation for families. Women are also very often responsible for chronic care of family members with NCDs.

B8.2. Explain how the research contributes to identifying and/ or reducing inequities between women and men in health and health care.

The research may identify differences in knowledge and perception of men and women in the determinants of NCDs which might influence health seeking behaviour.

B.8.3. Does the nature or topic of the research make it important that the researchers are women rather than men or vice versa? Please explain. What is the sex composition of the research team and what are their duties and responsibilities in the proposed research?

The nature of the topic does not require a gender distinction of the researchers. However, it is important to have a good mix of both sexes to increase cooperation, participation and confidence of participants. The research team of 4 will have 2 females and 2 males. Researchers will provide guidance to participants to fill consent forms and clarify concerns and issues to be raised. Where necessary, the female members of the research team will provide such support to female participants and vice versa.

B.9 INFORMED CONSENT

Please provide consent forms for every participant group and each instrument.

B.9.1 Information given to *participants*:

Guidance notes

- Please indicate what you will tell the *participants* in simple language. The procedure or treatment which will be applied should be described and reference should be made to possible side effects, discomfort, complications and/or benefits. Provide information to the participant in the research about the purpose, type of research technique, type of questions or issues addressed, time involved and arrangement for privacy.
- State how confidentiality is maintained. For focus group discussions clearly state that confidentiality cannot be guaranteed and that participants should **not** share personal experiences.
- It must be made clear to the participants that he/she is free to decline to participate or to withdraw at any time without suffering any disadvantage or prejudice.
- At the end of the consent form provide space for a signature of the participant. If a signature is inappropriate then a witness should sign on behalf of the participant.
- State name and contact details where complaints can be directed to.
- If applicable provide contact details for counseling or other referral.

Attach the consent forms.

Consent forms (adapted from WHO informed consent form) attached as Annexures

B.9.2 Outline who will deliver the above information and how?

Information will be delivered by members of the research team responsible for the specific activity involving the respective participants. Interpretation will be provided by research team members when necessary to participants in one of the commonly spoken languages preferred by the participants and to be done by the research members most fluent in such language.

B.9.3 Please indicate how consent will be obtained, given local circumstances.

Guidance notes:

In some societies, the concept of giving consent on an individual basis unfamiliar. It may be necessary to obtain consent both at community and individual level. Obtaining consent from minors requires both consent from the guardian and, where possible, the minor.

Consent form will be given to literate participants to read and make informed decision on acceptance to participate. They will be offered opportunity to clarify any aspects of the research and the consent forms with a member of the research team. Participants for the semi structured interviews and the FGD with health workers fall within this category. The FGD with community representatives in the WDC may have some participants who are not literate or may have difficulty in reading the English text. The members of the research team will take responsibility to read out and/or interpret the consent forms to such participants who would provide witness of their choice to sign the forms while they will also append their signature or thumb print as deemed appropriate.

B.9.4 Are any inducements to be offered to either participants or the individuals who will be recruiting them? (e.g. improved patient care / cash) (please tick appropriate box)

Yes No

B.9.5 If Yes, please give details

B.9.6 Outline any hidden constraints to consent.

Guidance notes:

Examples where hidden constraints may be important include:

- *situations where participants are employees of the investigator*
- *women in antenatal care who may feel the health of the unborn child could be compromised if they do not consent to research initiated by their carers.*

Some of the selected participants for the FGD with the group of health workers may have worked under the direct supervision of the Principal Investigator.

Some of the policy makers to be interviewed have had supervisory roles over the principal investigators and other research team members.

B.10 Local Ethical Committee

B.10.1 State the name and address of the local ethical committee who is requested for approval

Federal Capital Territory Health Research Ethics Committee

Federal Capital Territory, Health and Human Services Secretariat, Federal Capital development Authority (FCDA), Area 11, Garki, Abuja

Seceretary: Mrs. I. Adem,

email: ikwubielaode@yahoo.com

Assigned Registration No.- NHREC/14/12/2007b

B.10.2 Indicate a timeline: when is approval expected? In 2 months (May 2013)

SECTION C

DECLARATION: TO BE SIGNED BY MAIN APPLICANT

- I confirm that the details of this proposal are a true representation of the research to be undertaken.

- I will ensure that the research does not deviate from the protocol described.
 - If significant protocol amendments are required as the research progresses, I will submit these to the Royal Tropical Institute Research Ethics Committee for approval.
 - Where an appropriate mechanism exists, I undertake to seek additional local Ethical Approval in the country(ies) where the research is to be carried out.
 - I have no conflict of interest in this research
- I expect the project to commence on (Date): **24th June 2013**
and be completed by (Date): **13th July 2013**

Signed _____ Date _____

Agreement advisor:
I have seen and agree with the application. I have no conflict of interest in advising this research

Signed _____ Date _____

Additional comments advisor:

Annexes: Please include the following annexes: Instruments to be used

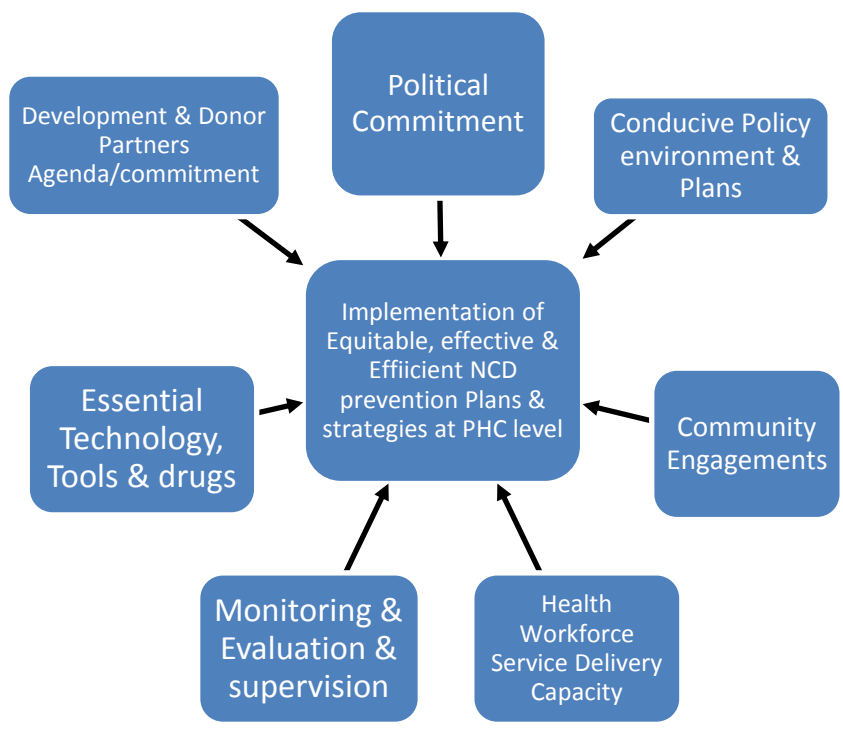


Figure: Conceptual Framework for Implementation of Essential NCDs Package for PHCs in Low resource settings. Source: Adapted from WHO PEN conceptual framework

Research table

Objective	Issues	Methods (techniques)	Respondents
To describe and outline existing policies and strategies on NCDs prevention and their implementation in FCT	<ul style="list-style-type: none"> -types of policies, strength of policies, adequacy of policy -implementation of policy, outlined strategies, plans -availability of guidelines, types of guidelines - Compliance to policies, and use of guidelines by health care providers. - M&E, supportive supervision for NCDs - constraints, opportunities Involvement of communities, NGOs, partners 	Documentary reviews	
		Semi structured interviews	Key informants (Policy makers, Health managers, specialist Physicians)
To explore knowledge, views and practices of Community Health Extension Workers in Primary Health Centres in relation to NCDs prevention policies and strategies in FCT	<ul style="list-style-type: none"> -Basic knowledge about NCDs and risk factors -knowledge of existing policies on NCDs - knowledge and use of guidelines -knowledge and use of strategies and job aids -Participation in training on NCDs risk factors, policies and guidelines -availability of screening tools and equipment - Perception on appropriateness of available tools and guidelines. - supportive supervision 	FGD	12 CHEWs, 2 from each Area Council of the FCT
		Semi structured interviews	Key informants (Policy makers, Health managers, specialist Physicians)
To explore the availability and usage of IEC materials and basic equipment for screening and diagnosis of NCDs in Primary Health Care Centres in FCT	<ul style="list-style-type: none"> -Presence of flyers, wall posters, job aids for with NCD messages - Presence of Blood Pressure measuring device (stethoscope, sphygmomanometer), weighing scales, stadiometer (to measure height), glucometer (for blood glucose) urine test strips (urinalysis), blood chemistry (for blood electrolytes, urea and creatinine) 	Observation and Inspection	Selected PHC clinics, one In each Area Council of the FCT
		Semi structured interviews	Key informants (Policy makers, Health managers)
		FGD	12 CHEWs, 2 from each Area Council of the FCT
To explore the knowledge, views and perception on NCDs among members of Ward Development Committees in FCT	<ul style="list-style-type: none"> - knowledge and perception of Major NCDs - knowledge of determinants and risk factors for NCDs - knowledge of solutions for NCDs - source of information on NCDs - involvement by policy makers 	FGD	2 groups of WDC from 2 Area Councils, one Urban (Municipal AC) and one Rural(Abaji AC) with 10 persons each

Annex B2: Interview guides for key informants(policy makers)

Interview guides for key informants' interviews for policy makers/Local government health Managers (Heads of health departments)

1. How would you describe the current trend of NCDs (CVDs and diabetes)?
2. Is there a specific coordinator and/unit for NCDs in your establishment?
3. How would you describe the M&E and supervision of PHC activities?
4. What about M&E, supportive supervision for NCDs to PHCs? Why/Why not?
5. How would you describe surveillance (case reporting) for Diabetes and CVDs by PHCCs?
6. Is there any program or campaign on NCDs at PHC level? Community dialogue? Participatory Learning Activities?
 - a. Has there been any? What? When?
 - b. Is there plan for any? What and when?
7. Has there been any training organised for PHC workers (e.g. CHEWs, CHOs) on NCDs? What? When? Why/Why not?
 - a. CVD
 - b. Diabetes
 - c. Any planned? When? What?
8. Is there a budget line specific for NCDs?
9. Has been any procurement and/distribution of basic equipment for screening NCDs to PHCs? What? When?
 - a. Sphygmomanometer
 - b. Stadiometer
 - c. Stethoscope
 - d. Glucometer
 - e. Urinalysis strips
 - a. Has there been any production and distribution of IEC specific for NCDs? What? When? Why/why not? a. CVD b. Diabetes
10. Has there been dissemination/distribution of guideline for prevention for NCDs to PHCCs? When? Why/Why not?
11. Are there any Development partner/NGOs working with your establishment in the areas of NCDs? Which? What do they do?
12. Are there specific challenges with implementing the WMHCP for NCDs?
13. Planned reviews?
14. Any final comments or remarks?

Annex B3: Interview guides for key informants (Specialist Physicians)

Interview guides for key informants interviews (Specialist Physicians: Endocrinologist & Cardiologist in teaching hospital)

- 1. How would you describe the current trend of NCDs (CVDs and diabetes)?**
- 2. What in your opinion are responsible for these trends?**
- 3. What opinions do have about the social determinants?**
- 4. How would you describe the Knowledge of your patients on these determinants?**
- 5. What in your opinion can be done to address the trends?**
- 6. Is there a role the PHCs can play in the control of NCDs? What? How? Why/why not?**
- 7. Are you aware of any policy to prevent NCDs through the PHCs? Which?**
- 8. Any final comments or remarks?**

Annex B4: focus group discussion guides for ward development committee members

- 1. What types of diseases do you know that cannot be transferred from one person to another? Why?**
- 2. How would you describe someone with diabetes?**
- 3. What about Hypertension? (Ask for local names)**
- 4. What in your opinion are the causes NCDs? Diabetes? Hypertension?**
- 5. Can diabetes and Hypertension be prevented? How? Why/why not?**
- 6. Can they be treated? How? Why/why not?**
- 7. Do you know of any government program on prevention of diabetes and hypertension?**
- 8. Have you been involved in any workshop/meeting/training to discuss prevention of any disease? What about diabetes and hypertension?**
- 9. Have you been involved in any campaign/ activity on disease prevention? For diabetes and hypertension?**
- 10. Do you get information on CVDs (hypertension) and diabetes? What kind of information? From where do you get such information? Radio? Health centre? Television? Campaign?**
- 11. Do you have any advice on how to prevent diabetes and hypertension?**

Annex B5: focus group discussion guides for community health extension workers

- 1. What types of diseases do you know that cannot be transmitted from one person to another? Why?**
- 2. How would you describe someone with diabetes?**
- 3. What about Hypertension? (Ask for local names)**
- 4. What in your opinion are the causes NCDs? Diabetes? Hypertension?**
- 5. Can diabetes and Hypertension be prevented? How? Why/why not?**
- 6. Can they be treated? How? Why/why not?**
- 7. Do you know of any government program on prevention of diabetes and hypertension?**
- 8. Have you been involved in any workshop/meeting/training to discuss prevention of any disease? What about diabetes and hypertension?**
- 9. Have you been involved in any campaign/ activity on any disease prevention? What about diabetes and hypertension?**
- 10. Is there any part of your work that has to do with NCDs prevention? What? How?**
- 11. Do you have guidelines that tell you what to do for NCDs? What are the guidelines? Are the guidelines useful? Can you apply them?**
- 12. Do you have job aids (charts, instructions, pamphlets, leaflets, posters etc.) that help you in doing your work for NCDs? Diabetes? CVDs? For any other disease/condition? Are the job aids useful?**
- 13. Have you had any training on NCDs? Diabetes? CVDs? When? What? Training for any other program? What?**
- 14. Do you have equipment and materials to screen for CVDs and diabetes (sphygmomanometer, stethoscope, urinalysis strips, and glucometer)? Are the equipment working? Are they useful?**
- 15. Are the materials adequate for the work? Are there any equipment/materials that you think should be provided?**
- 16. Do you get supervisory visits from senior colleagues and health managers? When was the last one? What aspect of your work is supervised? Any supervision for NCDs (diabetes and CVDs) activities?**
- 17. Do you submit reports on diabetes and CVDs? How? Where?**

Annex B6: Checklist for observation at selected PHCCs

(tick or list as appropriate)

General condition of clinic structure:

Good [] **Fair** [] **Dilapidated** []

Availability of IEC

- a. Any IEC displayed within clinic reception /premises: YES [] NO []
- b. What type of IEC are observed : Wall Posters[] Banners [] videos [] pictures [] handbills/pamphlets []
- c. Any IEC on NCDs: Diabetes [] Hypertension/CVD [] Cancer [] chronic lung disease[] Obesity [] Sickle cell disease []
- d. Any IEC on NCDs risk factors: Tobacco [] Alcohol [] physical inactivity/exercise [] Diet []
- e. What other IECs are displayed: Immunisation [] diarrhoea/ORT [] pneumonia [] under nutrition [] breast feeding [] family planning [] Malaria [] TB [] HIV/AIDS [] Others (specify) _____

Availability of Job Aids

- a. Any diagnostic charts for diabetes, Hypertension YES [] NO []
- b. Any National guidelines/protocol for diabetes, hypertension YES [] No []
- c. Any guideline for other diseases/conditions? Specify _____
- d. Any other job aids for any disease/condition? _____

Availability of Basic equipment, tools and devices

Device	available	functional
a. Sphygmomanometer	YES [] NO []	YES [] NO []
b. Stethoscope	YES [] NO []	YES [] NO []
c. Stadiometer	YES [] NO []	YES [] NO []
d. Glucometer	YES [] NO []	YES [] NO []
e. Urinalysis strips	YES [] NO []	YES [] NO []
f. Blood chemistry analysis	YES [] NO []	YES [] NO []
g. Tape measure	YES [] NO []	YES [] NO []
h. Weighing scales	YES [] NO []	YES [] NO []

Annex B7: Informed Consent Form A

Informed Consent Form (ICF) for members of Ward Development Committees (WDC) in Abaji and Abuja Municipal Area Councils, Federal Capital Territory (FCT) Nigeria

Good day Sir/Ma,

My name is _____ from _____

We are doing a research to explore the factors which determine how prevention of non-communicable diseases like Hypertension and diabetes are done through primary health care activities in the Area Council of FCT as part of the health services government has said should be given in Health centres. **We will like to discuss your feelings and suggestions about diabetes and hypertension.**

This Informed Consent Form has two parts:

- **Information Sheet (to share information about the study with you)**
- **Certificate of Consent (for signatures if you choose to participate)**

You will be given a copy of the full Informed Consent Form. Your Participation is Voluntary.

Part I: Information Sheet

Purpose of the research:

Our team is interested in finding what you know and think about plans that government has to prevent Non Communicable diseases like hypertension and diabetes are being carried out. We also want to know what you think and know about the causes of non-communicable diseases

Type of Research Intervention and procedures:

We are going to be doing a group discussion with some members of the Ward Development Committee (WDC) which you are a member of. You have been selected to be part of the group discussion which will be guided by 2 members of our research team. We shall have 9 other WDC members present in the group discussion making a total of 10 persons plus yourself. The group discussion will be tape recorded and some notes written down. This is to ensure that we take note of what you and others have said accurately. No one will be identified by names in the records and the recordings and notes are only available to members of the research team who will analyse it. These records will be kept in a secured place and destroyed after analysis has been done. All such records will be destroyed in not more than 24 months after the research has been concluded.

We are also having interviews and discussions with some Community Health workers and some government health officials on similar topics for this research.

Reason for Selection: You have been selected to take part in this study because we believe you can give useful information from your experience as a member of this community that will be of importance in understanding the issues we are trying to study.

Voluntary Participation: You have the freedom to participate or not. Your decision will not affect you in any way. You also have the freedom to discontinue participation at any stage of the process.

Potential Risks/ discomforts: Some questions may be sensitive to you and you may not be comfortable with some of the topics. You do not have to answer every question and you do not owe us any explanation if you choose to do so. We will also take some of your time in the group discussions that will last about an hour. You may also spend some time in coming to the venue of the interview or group discussion. None of the information we obtain from you will be identified with you.

Benefits: The discussions in the group may give you opportunity to know about the views of other people as it concerns the topics to be discussed. Your contribution to the study by participating may also help us in suggesting ways to government on how to prevent these kinds of diseases.

Confidentiality: Information about you will be kept private and only members of the research team will have access to them. They will be coded with numbers and your name will not be part of it. The tape records and written notes will be kept safely before destruction. We will request that you and others in the group do not disclose what was discussed to other persons outside the group. As we cannot guarantee 100% confidentiality, we advise you not to give too much detail of personal experiences.

Who to Contact: If you have any questions now, they can be answered right away. If you have questions later, you can contact the address below or phone the numbers below:

Name: Emmanuel Okpetu or Emenike Azie **Address:** Kuje Area Council Primary Health Care Department

Telephone: 08038319671 (Emmanuel), 08035804595 (Emenike)

This proposal has been reviewed and approved by Federal Capital Territory Health Research committee, which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find out more about them, their contact is -

Name: Mrs. I. Adem (Seceretary) **Address:** FCDA Area II, Garki, Abuja. **Telephone:** 08071427099

Part II: Certificate of Consent (This section is mandatory please)

I _____ have been invited to participate in a study on Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of the Federal Capital Territory Primary Health Care

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Print Name of Participant _____

Signature of Participant _____ Date _____

If participant cannot read in English

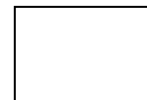
I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness (selected by participant) _____

Signature of witness _____

Date _____

Thumb print of participant



Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands the details of the study and his/her involvement.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent _____

Signature of Researcher /person taking the consent _____

Date _____

Annex B8: Informed Consent Form B

Informed Consent Form (ICF) for Community Health Extension Workers (CHEWs) from 6 Area Councils of the Federal Capital Territory (FCT) Nigeria

Good day Sir/Ma,

My name is _____ from _____

We are doing a research to explore the factors which determine how prevention of non-communicable diseases like Hypertension and diabetes are done through primary health care activities in the Area Council of FCT as part of the health services government has said should be given in Health centres. We will like to know what you know about non-communicable diseases (NCDs) especially hypertension & Diabetes and what causes them and the procedures and guideline to prevent them that you know.

This Informed Consent Form has two parts:

- Information Sheet (to share information about the study with you)
- Certificate of Consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form. Your Participation is Voluntary.

Part I: Information Sheet

Purpose of the research:

Our team is interested in finding out how the plans that government has to prevent Non Communicable diseases like hypertension and diabetes are being carried out. We would also be discussing about the policies and guidelines that help you in your work to prevent NCDs. other topics that will be discussed are related to the equipment and tools that are available for screening for these diseases and how they help you in your work.

Type of Research Intervention and procedures:

We are going to be doing a group discussion with you and other Community Health Extension Workers (CHEWs). You have been selected to be part of the group discussion which will be guided by 2 members of our research team. We shall have 11 other CHEWs present in the group discussion making a total of 12 persons plus yourself.

The group discussions will be tape recorded and some notes written down. This is to ensure that we take note of what you and others have said accurately. No one will be identified by names in the records and the recordings and notes are only available to members of the research team who will analyse it. These records will be kept in a secured place and destroyed after analysis has been done. . All such records will be destroyed in not more than 24 months after the research has been concluded.

We are also having interview and discussions with some community members of Ward development committees and some government health officials on similar topics for this research.

Reason for Selection: You have been selected to take part in this study because we believe you can give useful information from your experience as a CHEW which will be important to understanding the issues we are studying.

Voluntary Participation: You have the freedom to participate or not. Your decision will not affect you in any way. You also have the freedom to discontinue participation at any stage of the process.

Potential Risks/ discomforts: Some questions may be sensitive to you and you may not be comfortable with some of the topics. You do not have to answer every question and you do not owe us any explanation if you choose to do so. We will also take some of your time in the group discussions that will last about an hour. You may also spend some time in coming to the venue of the interview or group discussion. None of the information we obtain from you will be identified with you.

Benefits: The discussions in the group may give you opportunity to know about the views of other people as it concerns the topics to be discussed. Your contribution to the study by participating may also help us in suggesting ways to government on how to prevent these kinds of diseases.

Confidentiality: Information about you will be kept private and only members of the research team will have access to them. They will be coded with numbers and your name will not be part of it. The tape records and written notes will be kept safely before destruction. We will request that you and others in the group do not disclose what was discussed to other persons outside the group. As we cannot guarantee 100% confidentiality, we advise you not to give too much detail of personal experiences.

Who to Contact: If you have any questions now, they can be answered right away. If you have questions later, you can contact the address below or phone the numbers below:

Name: Emmanuel Okpetu or Emenike Azie Address: Kuje Area Council Primary Health Care Department

Telephone: 080388319671 (Emmanuel), 08035804595 (Emenike)

This proposal has been reviewed and approved by Federal Capital Territory Health Research committee, which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find out more about them, their contact is-

Name: Mrs. I. Adem (Seceretary) **Address:** FCDA Area II, Garki, Abuja. **Telephone:** 08071427099

Part II: Certificate of Consent (This section is mandatory please)

I _____ have been invited to participate in a study on Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of the Federal Capital Territory Primary Health Care

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Print Name of Participant _____

Signature of Participant _____ Date _____

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands the details of the study and his/her involvement.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent _____

Signature of Researcher /person taking the consent _____

Date _____

Annex B9: Informed Consent Form C

Informed Consent Form (ICF) for Key informants (Policy makers, Health planners & Managers) in the Federal Capital Territory (FCT) Nigeria

Good day Sir/Ma,

My name is _____ from _____

We are doing a research to explore the factors which determine the implementation of NCDs prevention plans and strategies in Nigeria's Essential Health Package at the Primary Health Care level in the Federal Capital Territory in order to make appropriate recommendations to policy makers, health planners and health program implementers.

This Informed Consent Form has two parts:

- Information Sheet (to share information about the study with you)
- Certificate of Consent (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form. Your Participation is Voluntary.

Part I: Information Sheet

Purpose of the research:

Our team is interested in finding out factors which determine the implementation of NCDs prevention in Nigeria's Essential Health Package at the Primary Health Care level in the Federal Capital Territory. We would like to hear your views about the current policies and plans for NCDs prevention. We would also want to get insights on present and future plans as well as challenges and constraints faced in implementation of plans.

Type of Research Intervention and procedures:

We are going to be doing a one on one interview with you which will be tape recorded and some notes written down. This is to ensure that we take note of what you have said accurately. You will not be identified by name in the records and the recordings and notes are only available to members of the research team who will analyse it. These records will be kept in a secured place and destroyed after analysis has been done. The records will be kept securely for not more than 24 months after the research.

We are also having discussions with some community members of Ward development committees and some Community Health Extension Workers on similar topics for this research. Some other senior health officials in FCT Primary Health Care level like you will be interviewed.

Reason for Selection: You have been selected to take part in this study because we believe you can give useful information from your experience as a stakeholder in policy formulation and implementation in the FCT Primary Health Care level of Nigeria.

Voluntary Participation: You have the freedom to participate or not. Your decision will not affect you in any way. You also have the freedom to discontinue participation at any stage of the process.

Potential Risks/ discomforts: Some questions may be sensitive to you and you may not be comfortable with some of the topics. You do not have to answer every question and you do not owe us any explanation if you choose to do so. We will also take some of your time in the group discussions that will last about an hour. You may also spend some time in coming to the venue of the interview or group discussion. None of the information we obtain from you will be identified with you.

Benefits: The discussions during the interview may give you opportunity to know about the views of other people as it concerns the topics to be discussed. Your contribution to the study by participating may also help us in suggesting ways to government on how to prevent these kinds of diseases.

Confidentiality: Information about you will be kept private and only members of the research team will have access to them. They will be coded with numbers and your name will not be part of it. The tape records and written notes will be kept safely before destruction.

Who to Contact: If you have any questions now, they can be answered right away. If you have questions later, you can contact the address below or phone the number below:

Name: Emmanuel Okpetu or Emenike Azie Address: Kuje Area Council Primary Health Care Department

Telephone: 08038319671 (Emmanuel), 08035804595 (Emenike)

This proposal has been reviewed and approved by Federal Capital Territory Health Research committee, which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find about more about them, their contact is -

Name: Mrs. I. Adem (Seceretary) **Address:** FCDA Area II, Garki, Abuja. **Telephone:** 08071427099

Part II: Certificate of Consent (This section is mandatory please)

I _____ have been invited to participate in a study on Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of the Federal Capital Territory Primary Health Care

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Print Name of Participant _____

Signature of Participant _____ Date _____

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands the details of the study and his/her involvement.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent _____

Signature of Researcher /person taking the consent _____

Date _____

Annex C: Ethical approval from FCT Health Research Ethics Committee



FEDERAL CAPITAL TERRITORY HEALTH RESEARCH ETHICS COMMITTEE

Research Unit, Room 10, Block A Annex, HHSS
FCT Secretarial No. 1 Kapital Street Area II, Garki, Abuja - Nigeria

Name of Principal Investigator: Dr. Okpetu. I. Emmanuel
Address of Principal Investigator: PHC Department, Kuje Area Council
Date of receipt of valid application: 6/05/2013

NOTICE OF APPROVAL AFTER COMMITTEE REVIEW

Protocol Approval Number: FHREC/2013/01/15/05-06-13

TITLE: Preventing Non – Communicable Diseases in the Essential Health Package of Nigeria: The Case of Primary Health Care in the Federal Capital Territory.

The research described in the submitted protocol has been reviewed.

Documents Reviewed:

- (i) Application form
- (ii) Curriculum Vitae of the Investigator
- (iii) Research Protocol;
- * Interview Guide
- * FGD Guide
- * Participant Information Sheet
- * Informed Consent Form

On the basis of the review, this research has been approved by the Committee (FHREC). Subsequent changes are not permitted in this research without prior approval by the FHREC.

This approval dates from 05/06/2013 to 04/06/2014. Note that no participant accrual or activity related to this research may be conducted outside of these dates. All informed consent forms used in this study must carry FHREC assigned protocol approval number and duration of FHREC approval of the study.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the code including ensuring that all adverse events are reported promptly. The FHREC reserves the right to conduct compliance visit to your research site without previous notification.

In multiyear research, endeavor to submit your annual report to the FHREC early in order to obtain renewal of your approval and avoid disruption of your research. At the end of the research, a copy of the final report of the research should be forwarded to FHREC for record purposes.

Ikwubiela S. Adem
Secretary, FHREC
June 05, 2013

Annex D: Ethical approval from KIT Research Ethics Committee



Royal Tropical Institute KIT Development Policy & Practice

Contact

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Our reference DEV Education

Amsterdam Wednesday June 19, 2013

Subject Decision Research Ethics Committee on Proposal S44A

Dear Emmanuel Okpetu,

The Research Ethics Committee of the Royal Tropical Institute (REC) has reviewed the revised proposal entitled "*Preventing Non-Communicable Diseases in the Essential Health Package of Nigeria: The Case of Primary Health Care in the Federal Capital Territory*" (S44A) that was resubmitted on June 4th, 2013.

The decision of the Committee is as follows:

The Committee has reviewed this revised version and is pleased to see that you have addressed the requested clarifications and amendments to our full satisfaction.

The Committee is of the opinion that the proposal meets the required ethical standards for research and herewith grants you ethical approval to implement the study as planned in the afore mentioned protocol.

Kind regards,

P. Zwanikken, MD, MScCH.
Acting Chair Research Ethics Committee, KIT

1/6 Lucy Blok.

CC Jaap Koot

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We think. We share. We act.



Source: personal file photo (2013)

Annex F: IEC Posters in PHCCs with messages on MCH, Immunisation, malaria, TB, and HIV.



Source: personal file photo (2013)

Annex G: photo of IEC poster in a PHCC showing the danger of cigarette smoking to the body



Source: personal file photo (2013)

Annex H: photo of a popular fast food chain in Nigeria indicating a section for Pizza (black arrow)



Source: personal file photo (2013)

Annex I: Cost effective interventions for NCDs

Primary prevention of heart attacks and strokes:

- Tobacco cessation (level 1), Regular physical activity 30 minutes a day (level 1), Reduced intake of salt <5 g per day (level 1), Fruits and vegetables at least 400g per day (Level 2)
- Aspirin, statins and antihypertensives for people with 10 year cardiovascular risk >30% (Level 1)
- Antihypertensives for people with blood pressure $\geq 160/100$
- Antihypertensives for people with persistent blood pressure $\geq 140/90$ and 10 year cardiovascular risk >20% unable to lower blood pressure through life style measures (Level 1)

Acute myocardial infarction:

- Aspirin (level 1)

Secondary prevention (post myocardial infarction):

- Tobacco cessation (Level 1), healthy diet and regular physical activity (Level 2).
- Aspirin, angiotensin-converting enzyme inhibitor, beta-blocker, statin (Level 1):

Secondary prevention (post stroke):

- Tobacco cessation, healthy diet and regular physical activity (Level 2).
- Aspirin, antihypertensive (low dose thiazide, angiotensin-converting enzyme inhibitor), and statin (Level 1)

Secondary prevention (Rheumatic heart disease):

- Regular administration of antibiotics to prevent streptococcal pharyngitis and recurrent acute rheumatic fever (Level 1)

Type 1 diabetes:

- Daily insulin injections (Level 1)

Source: WHO PEN (2010)

Annex J: Cost effective interventions for NCDs

Essential Interventions for primary care (category of evidence)*

Type 2 diabetes:

- Oral hypoglycemic agents for type 2 diabetes, if glycemic targets are not achieved with modification of diet, maintenance of a healthy body weight and regular physical activity (Level 1)
- Metformin as initial drug in overweight patients (Level 1) and non overweight (Level 4).
- Other classes of antihyperglycemic agents, added to metformin if glycemic targets are not met (Level 3)
- Reduction of cardiovascular risk for those with diabetes and 10 year cardiovascular risk >20% with aspirin, angiotensin converting enzyme inhibitor and statins (Level 1)

Prevention of foot complications through examination and monitoring (Level 3)

- Regular (3-6 months) visual inspection and examination of patients' feet by trained personnel for the detection of risk factors for ulceration (assessment of foot sensation, palpation of foot pulses inspection for any foot deformity, inspection of footwear) and referral as appropriate

Prevention of onset and delay in progression of chronic kidney disease:

- Optimal glycemic control in people with type 1 or type 2 diabetes (Level 1)
- Angiotensin converting enzyme inhibitor for persistent albuminuria (Level 1)

Prevention of onset and delay of progression of diabetic retinopathy:

- Referral for screening and evaluation for laser treatment for diabetic retinopathy (Level 1)
- Optimal glycemic control (Level 1) and blood pressure control (Level 1)

Prevention of onset and progression of neuropathy:

- Optimal glycemic control (Level 1)

Source: WHO PEN (2010)

Annex K: Cost effective interventions for NCDs.

Bronchial asthma:

- Relief of symptoms: Oral or inhaled short-acting β_2 agonists (Level 1)
- Inhaled steroids for moderate /severe asthma to improve lung function, reduce asthma mortality and frequency and severity of exacerbations (Level 1)

Prevent exacerbation of COPD and disease progression:

- Smoking cessation in COPD patients (Level 1)

Relief of breathlessness and improvement in exercise tolerance

- Short-acting bronchodilators (Level 2)

Improvement of lung function

- Inhaled corticosteroids when FEV1 < 50% predicted (Level 2)
- Long-acting bronchodilators** for patients who remain symptomatic despite treatment with short-acting bronchodilators (Level 1)

Cancer:

- Identify presenting features of cancer and refer to next level for confirmation of diagnosis (Level 3)

* Category of evidence Level 1=meta-analyses or systemic reviews of randomized controlled trials or randomized controlled trials, Level 2= Case control studies or cohort studies or systematic reviews of such studies, Level 3 =Case reports and case series, Level 4 = Expert opinion

** Not in essential medicines list at present

Source: WHO PEN (2010)

Annex L: Cost effectiveness of some Interventions

(HIV/AIDS treatment given for comparison)

Condition	Intervention	Target population	Cost effectiveness
HIV/AIDS	Antiretroviral therapy for primary prevention in clinic	All ages	922 US\$/DALY (Sub Saharan Africa)
Ischemic heart disease stroke and Diabetes	Legislation with public education to reduce salt content policy level intervention	All ages	1937 US\$/DALY
Diabetes	Screening of individuals at increased risk for undiagnosed diabetes in clinic	Adults over 25	3870 US\$/QALY
Diabetes	Annual screening for microalbuminuria and treating those who test positive	Adults	3310 US\$/QALY
Diabetes	Life style intervention for type 2 diabetes	Adults	60 US\$/QALY
Diabetes	Optimal Glycemic control in clinic	Adults	1810 US\$/QALY (SSA)
Diabetes	Cholesterol control in clinic	Adults	3330 US\$/QALY (SSA)
Diabetes	Smoking cessation, counselling and medication in clinic	Adolescents and adults	660 US\$/QALY (SSA)
Diabetes	ACE inhibitor for blood pressure control	Adults	620 US\$/QALY (EAP)
Diabetes	Annual eye examination to detect proliferative diabetic retinopathy and macular odema followed by photocoagulation to prevent blindness	Adults	320 US\$/QALY (SSA)

Source: WHO PEN (2010)