

EFFECTIVE MANAGEMENT OF NON-COMMUNICABLE DISEASES IN GHANA:
THE CASE OF HYPERTENSION AND DIABETES MELLITUS

A thesis

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Abstract

Non-communicable diseases (NCDs) are now a public health threat in Ghana. Hypertension and diabetes mellitus are among the leading conditions of concern, but there is little research that assists policy development for NCDs. Historically, there has been an overemphasis on infectious disease policy research. The few studies of NCD policy focus on the appropriateness of policy content rather than the processes through which they are developed and implemented. The overall purpose of this research, therefore, was to understand the health policy process for the management of hypertension and diabetes in Ghana; particularly policy development and implementation, the use of evidence in the policy process, stakeholder engagement and response.

Using a case study design, three sources of data were used: key informant interviews, focus group discussions, and the analysis of documents. Twenty-six key informant interviews were carried out with policy makers, health service providers, payers, patient association and advocacy group representatives. Two focus groups were held, involving a total of 18 community members diagnosed with and undergoing treatment for hypertension and diabetes. A review of 19 policy and health services documents was also undertaken. An adaptation of the framework method for analysing qualitative data in multidisciplinary health research through the identification of themes and patterns was used, with data entered into NVivo 11 software for analysis.

The findings of the study show that, with the support of international agencies and despite problems such as limited data and the variable engagement of stakeholders, the Ghana health sector has developed policies and strategies for managing hypertension and diabetes, other NCDs, and risk factors such as nutrition, tobacco and alcohol. Implementation of these policies however is challenged by inadequate resources, a lack of intersectoral effort, and an overemphasis on both infectious diseases and treatment rather than prevention. Apart from surveys and global burden of disease data, the main source of evidence for NCD policy process in Ghana was from routine morbidity and mortality statistics collected from health facilities, with quality and availability of data a concern. Service providers and other stakeholders understand the hypertension and diabetes challenge, and are responding through the provision of education, advocacy, screening services, and programmes in NCD control and regenerative health. Some important factors reported as hindering management of hypertension and diabetes include an overall lack of resources, a lack of political will, corruption, poverty, under-supply of trained health professionals, traditional superstitious beliefs and poor compliance.

Contributing to NCD management discussions in Ghana, the study found that policies and strategies to manage hypertension and diabetes are in place, but there are significant implementation issues. Adopting an implementation science approach where barriers to and enablers of policy implementation are identified, could ensure more effective management of these NCDs.

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Date: 27.07.2019

LIST OF ABBREVIATIONS

BDI	Buddy Doctor Initiative
BOP	Base of the Pyramid
CHIM	Centre for Health Information Management
CHPS	Community-based Health Planning and Services
CMA	Common Management Arrangement
DHIMS	District Health Information Management System
HICs	High Income countries
GHS	Ghana Health Service
MOH	Ministry of Health
LMICs	Low and Middle Income countries
NCDCP	Non-communicable Disease Control Programme
RHNP	Regenerative Health and Nutrition Programme

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Dedication

To my mother, Adwoa Afriyie, for her selflessness and dedication to my wellbeing...

CHAPTER ONE

Introduction and Background

1.1 Introduction

In this research, the prevention and control of hypertension (HTN) and diabetes mellitus (DM) in Ghana is examined from a policy perspective. The purpose of this chapter is to provide background to non-communicable diseases (NCDs) globally, with an emphasis on lower and middle-income countries (LMICs), Africa and Ghana. The chapter highlights the change in disease patterns from infectious diseases to NCDs, general trends in mortality and disease burden around the world, the cost of NCDs, and implications for individuals, communities and health systems. The chapter then specifically focuses on the country of Ghana, with emphasis on HTN and DM, and explains the relevance of international and national policies in controlling NCDs. The chapter sets out a conceptual approach to NCD policy, and concludes with a summary of the purpose and objectives of the thesis.

1.1.1 Mark's motivation for a PhD.

My interest in teaching started after my bachelor's degree programme. As part of the compulsory one-year post-study national service programme, I was posted to the Northern Region of Ghana to teach at the high school level. This ignited my passion for teaching but I was persuaded by my senior brother to pursue a career that fitted what I studied in school, marketing. Consequently, I joined Kojach Pharma Limited, a pharmaceutical company based in Kumasi with branches nationwide, as a marketing executive. My job entailed making presentations in leading hospitals, health centres and clinics about our products and encouraging medical professionals to patronize them. This gave me first-hand knowledge of the health care system in Ghana. After four years of working in this role, my penchant for health increased to the extent that I decided to pursue further studies in health services management at the University of Ghana.

After my master's degree programme, I was retained by the Department of Public Administration and Health Services Management at the University of Ghana Business School as a teaching and research assistant, and later as an assistant lecturer. As I already had interest in teaching, this was particularly fulfilling to me. However, a new directive from the university was announced a few months later. This required assistant lecturers (usually master's degree holders) to pursue doctoral

studies within three years of their appointment. This meant that if I wanted to continue in my academic role, I had no option but to pursue doctoral studies. Initially, this was particularly worrying because when I discussed this with some senior lecturers in our department, the basic notion was that people spend between five and seven years to finish PhD studies in Ghana and I was not mentally prepared to go through this journey. Upon careful consideration however, I decided to pursue doctoral studies abroad and seek better resources to support my studies.

The next issue was which area in health to research. This took me back to my time with Kojach Pharma Limited where I had to study and do many presentations on hypertensive and diabetic drugs. At that time, I came to terms with the enormity of these diseases and how emphasis continue to be on malaria, TB and HIV/AIDS. It reminded me of the many people suffering from these conditions in health facilities and the need to prevent and control them. These experiences, coupled with family considerations, as my own mother is hypertensive, made me decide to research into the management of hypertension and diabetes in Ghana.

1.1.2 Background to the study. There have been dramatic changes in global health over the second half of the twentieth century. Progress in public health has contributed to an increase in global life expectancy at birth from 48 years between 1950 and 1955, to 68 years between 2005 and 2010 (United Nations, 2012). The rise in life expectancy has occurred alongside a transition to new disease patterns, especially in LMICs. There is a marked change from highly fatal infectious diseases in children and epidemics affecting both infants and adults (such as HIV/AIDS, diarrheal diseases and malaria), to predominantly degenerative, non-communicable conditions in adults (Omran, 2005).

Modernization, globalization, and urbanization have been implicated in the shift from infectious diseases to NCDs. Improvements in social, economic and environmental conditions mean that circumstances which were previously fertile ground for infectious diseases have been replaced by good sanitation, improved medication and a generally better standard of living (Yusuf et al., 2001). This ultimately leads to a reduced risk of acquiring infectious diseases and increased risk of experiencing NCDs as people now grow into the middle and older ages where their risk of dying from degenerative diseases increases (Popkin, 1993). This shift in the pattern of disease arising from socio-economic advancement has been referred to as the epidemiologic transition, a phenomenon that is sweeping across many LMICs (Omran, 2005).

According to the World Health Organization (WHO), “NCDs, also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors” (WHO, 2018a, p.1). Although these conditions are of different types, the leading ones are cardiovascular diseases (CVDs), chronic respiratory diseases, cancers and diabetes (WHO, 2015; Naik & Kaneda, 2015). NCDs are often the result of risk factors including low physical activity, use of tobacco products, harmful use of alcohol, and poor diet that can be at least partially modified through health and social interventions (WHO, 2015). These factors, regarded as lifestyle or behavioural factors, can also trigger such metabolic risk factors as raised blood pressure, overweight and obesity, hyperglycaemia (high blood glucose levels), and dyslipidaemia (high cholesterol) (WHO, 2015; Marquez & Farrington, 2013). Apart from the modifiable risk factors, there are other factors (non-modifiable) which predispose people to NCDs and which cannot be controlled by health interventions. These include age, sex, race, geographical location, ethnicity and family history (WHO, 2015). Although NCDs are generally associated with older age groups, current evidence shows that most deaths resulting from NCDs occur among people below 70 years and mostly in LMICs (Naik & Kaneda, 2015).

1.1.3 The global NCD situation. Current global trends show that NCDs constitute a significant percentage of the overall disease burden. In 1990, communicable, nutritional, and neonatal conditions accounted for 47% of global burden of disease (GBD) with NCDs responsible for 43% of disease burden and the remaining 10% attributable to injuries (Murray et al., 2012). By 2010, the global NCD burden had increased to 54%, with communicable, neonatal, nutritional, and maternal conditions reducing to 35% of the burden (Murray et al., 2012). This trend has been consistent in subsequent burden of disease analyses, with the burden of several communicable diseases falling while that of NCDs increased as shown in the 2013 (Naghavi et al., 2015) and 2016 (Vos et al., 2017) GBD studies. In addition, GBD analyses also revealed that a significant proportion of global disabilities are attributable to NCDs as Years Lived with Disability (YLD) estimates have increased with rising NCD trends, from 537.6 million in 1990 to 764.8 million in 2013 (Vos et al., 2017).

A significant portion of global mortality stems from NCDs. The leading NCDs were responsible for about 63% of global deaths in 2008 (36 million), CVDs accounting for 48% of NCD deaths and chronic respiratory diseases, cancers and diabetes important contributors to the total (Naik & Kaneda, 2015; Marquez & Farrington, 2013). Currently, it is estimated that NCDs cause 41 million global deaths annually, which corresponds to 71% of all deaths each year (WHO, 2018a). The leading causes of mortality include CVDs (17.9 million), with hypertensive heart disease particularly prominent (WHO, 2016a), cancers (9.0 million), respiratory diseases (3.9 million) and diabetes (1.6 million) (WHO, 2018a). Table 1.1 details some NCD trends in various parts of the world and shows that the challenge of NCDs transcends national and regional boundaries. The

table shows that all continents face the challenge of controlling NCDs, with projections for Africa suggesting that there is much to be done to keep NCDs under control.

Table 1.1.
Key global NCD trends

Region	Key highlights	Sources
Africa	Over 2,446,000 NCD related deaths recorded in 2005 in Africa;	WHO Africa, 2005
	10 million diabetes cases estimated in Africa, expected to rise to 20 million in 2020;	IDF, 2006
	NCD burden rose 45% between 1990 and 2010 in Africa;	Marquez & Farrington, 2013
USA & Canada	Over 80% of all US deaths due to NCDs;	WHO, 2018c
	Chronic conditions in US children rose from 12.8 % to 26.6% in 2006;	Van Cleave et al., 2010
	CVD death occurs every seven minutes in Canada; CVDs account for 16.9% of all hospitalizations in Canada;	Thériault, Stonebridge, & Browarski, 2010;
	Costs Canada 20.9 billion dollars annually	Statistics Canada, 2011;
Europe	NCDs costs the EU economy 192 million Euros annually.	EPHAC, 2013;
	European region has the highest smoking rates in the world; Estimated 22% of Children aged 5-9 are overweight;	Besneir & Dyakova, 2017
Asia and the Pacific	Asia accounts for 54% of global NCD deaths; 22% likelihood of dying from NCDs in LMICs in Asia;	Hou et al., 2016
	Seven of top 10 diabetes-prevalent countries in the Pacific region; Pacific NCD premature deaths higher than global LMIC averages	Naik & Kaneda, 2016
Latin America & the Caribbean (LAC)	Diabetes to increase by more than 50% by 2030 in the LAC region;	Webber et al., 2012
	Highest lifetime likelihood of developing HTN in the Caribbean; Obesity to increase across Latin America	Pan American Health Organization, 2008

1.2 Non-communicable Diseases in Lower and Middle Income Countries

With growing populations in LMICs, global statistics show that increasing numbers of NCD deaths occur in these countries (Naik & Kaneda, 2015; Marquez & Farrington, 2013). According to the WHO Global Status Report on NCDs 2014 (WHO, 2014), although NCDs were responsible for 68% of the 56 million global deaths in 2012, close to three-quarters of these were in LMICs. This is hardly surprising considering that the incidence of the leading NCDs such as diabetes has risen faster in LMICs than in high-income countries (HICs) in the last decade (WHO, 2016a). Research shows that the impact of premature mortality from NCDs has been felt severely in LMICs, across several regions: Latin America and the Caribbean (Perel et al., 2006), Asia (Naik & Kaneda, 2015), the Pacific (Hou, Anderson, & Burton-Mckenzie, 2016), and Africa (Marquez & Farrington, 2013; Naik & Kaneda, 2016).

Although the NCD situation is alarming in LMICs around the world, the African situation is unusual as 80% of countries in this region are in the LMIC category (Nyaaba et al., 2017). The GBD study of 2010 reported a remarkable rise in NCD burden in Africa and confirmed recent discussions of the epidemiologic transition from infectious diseases to NCDs, underscoring the ‘double-burden’ or ‘double jeopardy’ of communicable and NCDs (Agyei-Mensah & Aikins, 2010; Aikins et al., 2014). Available data show the African region experienced over 2 million NCD deaths in 2010 (Naghavi et al., 2015). In countries such as Seychelles and Mauritius and in population groups over the age of 45 years, NCDs have already replaced communicable disease as the leading cause of mortality (Marquez & Farrington, 2013). In North Africa, NCDs account for over three-quarters of all mortalities and nearly half the population of sub-Saharan Africa already suffers from HTN (Naik & Kaneda, 2015). In general, HTN and DM are among the leading NCDs in Africa and therefore the focus of this study (Marquez & Farrington, 2013; Naik & Kaneda, 2015).

The NCD situation in Africa could become worse as the presence of risk factors among the young could be interpreted as a harbinger of future rise in NCDs. According to the Global Youth Surveys conducted by WHO and the Centre for Disease Control and Prevention (CDC), in Zambia, a quarter of boys and girls (aged 13-15 years) already use tobacco (WHO/CDC, 2011d). In South Africa, 24% of boys and 19% of girls (aged 13-15 years) are users of tobacco, with 17% of non-smokers indicating their willingness to smoke in the coming years (WHO/CDC, 2011c). In Namibia, 26% of boys and 21% of girls (aged 13-15 years) are users of alcohol (WHO/CDC,

2013), while 21% of boys and 14% of girls (aged 13-15) in Mauritius have experienced being drunk (WHO/CDC, 2011b). In Sierra Leone, 22% of girls between the ages of 15-19 years are overweight (Statistics Sierra Leone, 2008), while in Egypt, 38% of boys and 41% of girls are overweight (WHO/CDC, 2011a), with only 11% of boys and girls being physically active in Sudan (WHO/CDC, 2012). In view of the prevalence of NCDs and risk factors, researchers have called for urgent policy action in Africa (Aikins et al., 2007; Nyaaba et al., 2017).

1.2.1 The NCD situation in Ghana.

Ghana: country and health characteristics. Ghana is a West African country bordered by Burkina Faso in the north, Cote d'Ivoire in the west, Togo in the east, and the Atlantic Ocean and Gulf of Guinea in the south (see figure 1.1), with a total land area of 238,537 square kilometres (Ghana Statistical Service [GSS], 2015). With geographical coordinates of 800N, 200W, Ghana is generally a lowland country with three ecological zones: the sandy coastal plains, the middle belt and the northern Savannah (GSS, 2015). Ghana's climate is tropical with variations. The coastal areas are generally dry, the south-western corner is humid, and the northern areas are generally hot and dry with average annual temperature of about 26 degrees Celsius (*ibid*).

Ghana obtained independence from British hegemony in 1957 and is currently a democratic state. In the Greater Accra Region of Ghana is its capital, Accra.



Figure 1.1. A map of West Africa.

Source: <http://bonusbag.info/wp-content/uploads/2018/03/map-west-contemporary-states-western-african-countries.jpg>

In January 2019, the national population for Ghana was estimated to be 30 million (World Population Review, 2019). Ghana's population has increased steadily since the first census was conducted in 1960 (see table 1.2), as population density has risen from 29 persons/km² in 1960 to 103 persons/km² in 2010 (GSS, 2012a). The population is predominantly youthful, with 40% still below 15 years of age. The urban population has increased dramatically since the first census, rising from 23% in 1960 to 51% in 2010 (Table 1.2).

Table 1.2.
Population (Popn) and population density 1960-2010

Census	Popn (million)	Popn (km ²)	Density	Percent urban	Popn under 15(%)
1960	6.7	29		23	45
1970	8.6	36		29	48
1984	12.3	52		32	46
2000	18.9	79		44	42
2010	24.7	103		51	40

Source: Ghana Statistical Service, 2015

Ghana is a decentralized state with sixteen administrative regions. The administrative structures comprise a three-tier system involving Regional Co-ordinating Councils, Metropolitan/Municipal/District Assemblies and Urban/Town/zonal or Area Councils/Unit Committees. District assemblies are either metropolitan (with a population of 250,000 or more), municipal (population of 95,000 or more), or district (population of 75,000 or more) (Owusu, 2004). The District Assembly is the basis of Ghana's administrative decentralization policy and is seen as the basic unit of government around which administrative planning and developmental decision making revolves.

Economically, many Ghanaians live below the national poverty line, with the majority having unstable incomes due to their engagement in small-scale subsistence farming. The International Labour Organization (ILO) through its Decent Work Pilot programme stated that for every ten Ghanaians, four may be classified as poor, adding that close to 30% of people who work in the informal sector are poor due to their low and unstable incomes (ILO, 2006). Recently, the country has made steady economic progress with an average yearly growth rate of about 7% since 2005 (Cooke, Hague, & McKay, 2016). Experts believe that following the attainment of middle-income

status in 2010 and the discovery of oil, Ghana's economy has improved significantly although inequality is still a major challenge (Cooke et al., 2016).

Ghana's health indicators have improved over the years. Life expectancy at birth has improved from 54 years in 1988 to 60 in 2008, infant mortality has reduced from 77 per 1000 live births in 1988 to 41 in 2014 (Ghana Health Service [GHS], 2017). Overall death rate (crude) has also reduced over the years (GHS, 2017). Although general health indicators have improved, NCDs have emerged as a public health challenge. At the time of Ghana's independence in 1957, infectious, perinatal, maternal, nutritional and environmental conditions were the predominant health problems (Aikins & Koram, 2017). Epidemiological patterns, however, have changed over the years to include a mix of communicable, reproductive and NCDs. For example, according to the GBD 2010 results, the 25 leading causes of premature deaths in Ghana included seven NCDs between 1990 and 2010 (Murray et al., 2012). Eleven of the top twenty-five leading causes of disease burden were NCDs (Murray et al., 2012). NCDs disproportionately affect the elderly and populations in the reproductive age in Ghana (Aikins & Koram, 2017). There are, however, some identifiable nuances in NCD patterns in Ghana. Whereas musculoskeletal conditions and neuro-degenerative conditions affect the elderly, cancers, HTN and DM affect young adults in their active work life (Aikins & Koram, 2017).

The health care delivery system in Ghana is organized under four main divisions namely public, private-for-profit, private not-for-profit and traditional systems (Salisu & Prinz, 2009). Since 1995, there have been a large-scale effort to integrate traditional systems into health care delivery in Ghana (Aseweh, Abekah-Nkrumah & Abor 2008). Administratively, the health system operates at three levels; national, regional and district levels although functionally it is divided into five levels which include national, regional, district, sub-district and community levels (Salisu & Prinz, 2009). At the national level, the Ministry of Health (MOH) is responsible for overall direction, policy and determination of priorities for the health sector, with support from partners and other ministries, departments, and agencies (Aseweh et al., 2008; GSS, GHS, & Macro International., 2009). The partners are mainly donor agencies, NGOs and civil society organizations (GSS, GHS, & Macro International Inc., 2009). The Ministry is also responsible for the regulation and coordination of all stakeholders in the health sector (*ibid*). Policies are implemented through the public, traditional and private sectors, with the Ghana Health Service (GHS), Teaching Hospital Board (THB), and Quasi Government Institution Board (QGIB) agencies of implementation for the Ministry. The GHS is, however, responsible for implementing government's policies and the

regulation of health institutions run by the state such as government hospitals, polyclinics, and health centres. Figure 1.2 shows the main players in the health sector of Ghana with the MOH providing the dominant overview and the GHS responsible for oversight of the significant public-sector services.

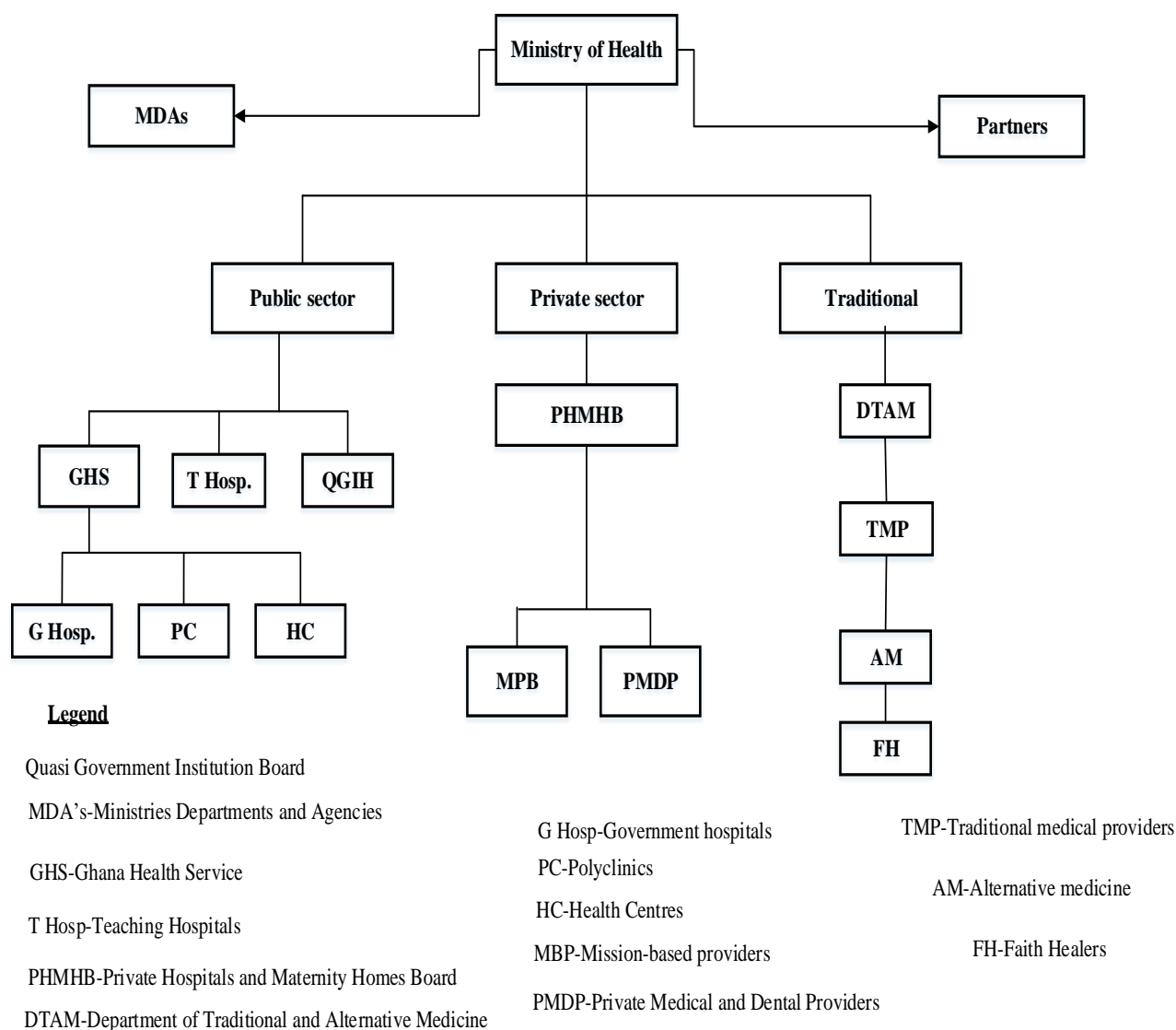


Figure 1.2. Structure of the Ghanaian Health System

Source: Aseweh et al., 2008

Health financing in Ghana has seen considerable changes over the years, from a free health care system following independence to a user fee system in the 1970s and 1980s (Aikins & Koram, 2017). From the mid-1990s, significant health reforms took place, the most important of which included a reorientation of health financing mechanisms. Following a successful pilot, the National

Health Insurance Scheme (NHIS) was introduced in 2003 with the aim of providing financial protection against the costs of health care services for Ghanaians (Salisu & Prinz, 2009). The NHIS is financed through contributions or premiums from the informal sector as well as payroll deductions from formal sector workers to Social Security and National Insurance Trust (SSNIT). The introduction of social health insurance paved the way for private insurance entities to spring up. In general, the NHIS accounts for some 30 percent of public health expenditure but 16 percent of total health spending while private health insurance and other pooling mechanisms account for 10 percent of total health funding (Schieber, Cashin, Saleh, & Lavado, 2012)

Although health insurance was to be the main financing mechanism, other sources of funding have remained in the Ghanaian health system. Taxes constitute an important source of funding in the health system of Ghana. This includes direct and indirect taxes. Direct taxes come in the form of personal income tax and corporate tax. Workers in Ghana contribute 5 percent of their income toward retirement and this is kept by SSNIT. Personal taxes are responsible for 5.2 percent of total health expenditure, with rates ranging from 0 percent for income below GH¢180 to 28 percent for income over GH¢720 (Adisah-Atta, 2017). Although corporate taxes constitute an important source of health funding, there are concerns about whether this would result in higher prices, lower wages or lower retail earnings (Adisah-Atta, 2017). Some have suggested an equal share of burden for both consumers and shareholders, with others advocating for a 10 percent and 90 percent burden for consumers and shareholders of corporate bodies respectively (Akazili, 2010). Corporate taxes contribute 7.1 percent of total health funding in Ghana (Adisah-Atta, 2017).

Indirect taxes include Value Added Tax (VAT) of at a level of 15 percent. This consist of a 10-percent VAT component and 2.5 percent each for the Ghana Education Trust Fund (GETFund) and the National Health Insurance Levy (NHIL) (Akazili, 2010). The NHIL was introduced in 2004 by an Act of Parliament to be collected separately but on the same goods and services covered by VAT (Price Water House Coopers, 2018). In addition, import duties constitute an important funding source for health in Ghana. Apart from VAT and income tax, import duty is the third largest contributor of taxes in Ghana accounting for 8 percent of total health spending (Adisah – Atta, 2017).

The economic recession in the 1980s and the introduction of the Structural Adjustment Programme (SAP) and Economic Recovery Programme (ERP) by the World Bank and International Monetary Fund encouraged fiscal discipline and cost sharing (Nyonator & Kutzin, 1999). Consequently, out-

of-pocket payments, which came to be known as the ‘cash-and-carry system’, became the main source of health funding in Ghana. It was to limit the effects of this system that the NHIS was introduced. However, out-of-pocket payments remain a key aspect of health funding in Ghana. According to Owusu-Sekyere and Bagah (2014), out-of-pocket payments account for some 48 percent of total health expenditure. However, experts have called for better information on the percentage of health funding attributable to out-of pocket payments in Ghana (Schieber, Cashin, Saleh, & Lavado, 2012). In general, the Ghanaian health system is under-financed with the percentage of GDP for health hovering between 3% in 2000 to 5.4 % in 2013 (Aikins & Koram, 2017).

Although cancers and mental health problems are on the rise in Ghana (Agyepong & Adjei, 2008; Omar et al., 2010), the leading NCD is HTN. Several studies and reviews have confirmed the public health significance of HTN and the need for urgent policy action (Amoah, 2003; Agyemang, 2006; Addo, Amoah, & Koram, 2006; Bosu, 2010; Aikins et al., 2007), with some researchers already declaring that it has reached epidemic proportions (Bosu, 2010). Evidence from cross-sectional studies in urban areas reveals prevalence of HTN to be between 19% and 48% (Bosu, 2010). In rural areas, prevalence often reaches 35% (Cook-Huynh et al., 2012).

At the national level, there is no data on standardized prevalence of HTN. However, plotting available estimates from the GBD database shows an increasing/upward trend in its prevalence (Figure 1.3).

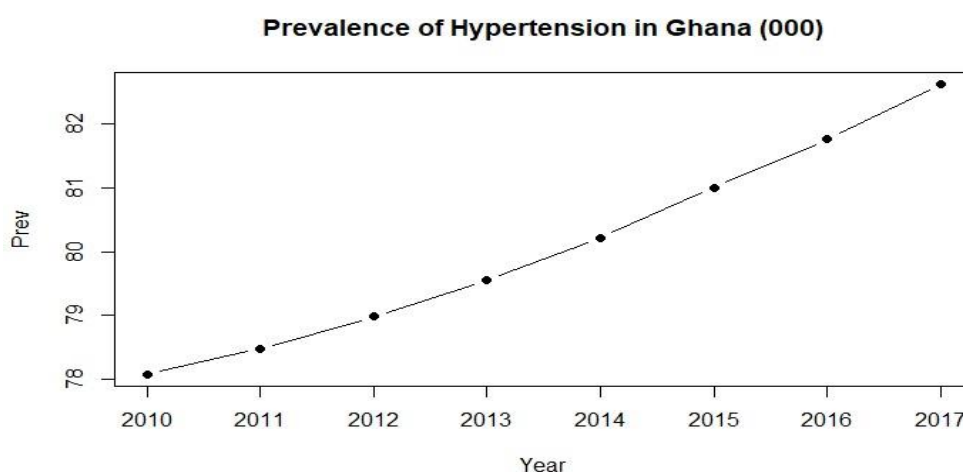


Figure 1.3. Prevalence of hypertension in Ghana
Source: Based on data from Global Burden of Disease Database

Just as HTN, data on national prevalence of DM is limited but estimates from the GBD database shows an upward trend in prevalence (Figure 1.4).

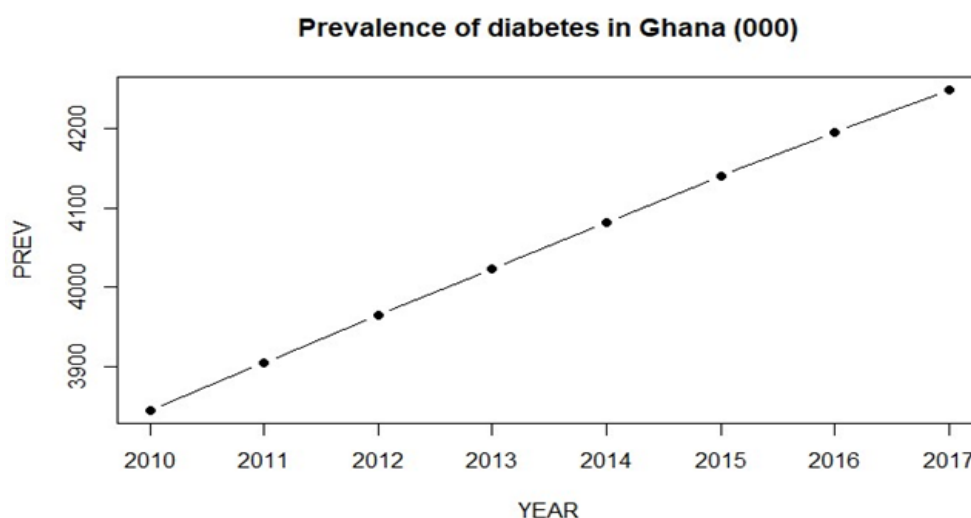


Figure 1.4. Prevalence of diabetes in Ghana

Source: Based on data from Global Burden of Disease Database

Not only do cross-sectional studies identify HTN as the most prevalent NCD in Ghana, institutional data confirms HTN as the leading NCD in Ghana. According to the Ghana National NCD Policy document (MOH, 2012a), HTN has been increasing in absolute and relative terms, with reported ambulatory cases in health facilities (excluding the well-patronized teaching hospitals) rising from 60,000 cases in 1990 to 700,000 in 2010. The document further reveals that HTN has ranked on the top five outpatient conditions for over fifteen years and is the third most common newly diagnosed condition, ranking higher than a number of common communicable diseases. Apart from being among the most common conditions reported in health facilities, institutional in-patient data collected from regional and district hospitals (excluding the well patronized teaching hospitals) reveals that HTN is among the leading causes of admission (Table 1.3), thus confirming its status as a disease of public health significance.

Table 1.3.

Top 10 causes of hospital admission in Ghana-All ages 2016

Rank	Cause of admission	Total cases seen	Proportional morbidity rate
1	Malaria	136063	25.1
2	Anaemia	23134	4.3
3	<i>Hypertension*</i>	<i>21927</i>	<i>4.0</i>
4	Pneumonia	20518	3.0
5	Infection of Urinary Tract	13008	2.4
6	Spontaneous delivery	12904	2.4
7	<i>Diabetes*</i>	<i>8979</i>	<i>1.7</i>
8	Septicaemia	7832	1.4
9	Gastritis	7242	1.3
10	Cellulitis	6480	1.2
	All others	284837	52.5
	Total	542,924	100.0

Source: Ghana Health Service (GHS) in-patient facts and figures, 2017

Diabetes had a prevalence of only 2% in the early 1960s in Ghana (Dodu & De Heer, 1964). Since then it has emerged as an important clinical condition (Amoah, Owusu, & Adjei, 2002; Cook-Huynh et al., 2012; Aikins, Owusu-Dabo, & Agyemang, 2013) with a prevalence of 9.26% recorded in some urban centres in 2008 (Owiredu et al., 2008). In 2016, it was estimated that about 4 million people in Ghana may be affected by Type 1 and Type II DM (Europa Source, 2016). In-patient data from the Ghana Health Service (GHS) (excluding teaching hospitals) also shows that DM is among the leading causes of death in Ghana. Thus, apart from HTN, DM is the next most common NCD leading to death (Table 1.4) or requiring hospital admission (Table 1.3). Due to the increasing public health significance of HTN/DM, researchers have called for urgent policy action to address these conditions (Aikins et al., 2007; Bosu, 2012; Aikins et al., 2010).

Table 1.4.

Top 10 causes of death in Ghana-All ages 2016

Rank	Cause of death	Total cases seen	Proportional mortality rate
1	Malaria	926	7.2
2	Pneumonia	903	7.0
3	Asphyxia	842	6.5
4	HIV/AIDS	828	6.4
5	Anaemia	747	5.8
6	<i>Hypertension*</i>	588	4.6
7	Cerebrovascular accident	489	3.8
8	<i>Diabetes*</i>	331	2.6
9	Gastroenteritis	300	2.3
10	Septicaemia	211	1.6
	All others	6724	52.2
Total		12889	100.0

Source: GHS in-patient facts and figures, 2017

1.3 The Impact of Non-communicable Diseases

NCD prevention and control requires a substantial amount of investment and resources due to the prolonged duration of these conditions. The impacts, which are often life-threatening, deplete human, financial, and material resources. As a result, unmanaged NCDs have far-reaching repercussions on households (individuals and families), societies and health systems.

People with NCDs have complex health needs and may require more health services than those who do not suffer from such conditions. In situations where people suffer from multiple NCDs, the cost of health care to families can be catastrophic. NCDs push more people into poverty because of the significant expenditure that households incur in treating them as in most LMIC settings these expenditures are borne out-of-pocket by households (Xu et al., 2007). Consequently, research has shown a cyclical relationship between NCDs and poverty. NCDs lead to poverty and poverty maintains NCDs. This is because those suffering from these conditions may not be able to work to earn income, thus remaining in poverty (Peters et al., 2008). Additionally, NCDs lead to excessive borrowing, which research has shown to be a major feature of families suffering from NCDs in LMICs (Kruk, Goldmann, & Galea, 2009). Besides, the physical pain and suffering for

individuals can be debilitating. This becomes even more serious in complicated NCD situations such as strokes and lower limb amputations which ultimately affect the quality of life of individuals (Azevedo & Alla, 2008). Additionally, financial challenges associated with NCD treatment exacerbate the psychosocial burdens especially in LMICs, where families who exhaust their financial resources on individuals suffering from NCDs often abandon them. Consequently, NCDs have been found to result in social isolation in some LMICs (Aikins et al., 2010; Aikins et al., 2007). Research in some LMICs also shows that some NCDs such as cancers and diabetes are stigmatized. In Ghana for example, evidence shows that women living with cancer and diabetes may be abandoned by their partners, with rural women suffering from uncontrolled diabetes (usually characterized by extreme weight loss) facing stigma similar to that of those with HIV/AIDS (Aikins, 2006; Aikins et al., 2007).

Not only do households suffer from deep impoverishment, NCDs affect societies as a whole. In the US, 35 % of health expenditure is for the 8.7 % of people with five or more NCDs and in 2010, 86 % of expenditure on health was for people with one or more NCDs (Gerteis et al., 2014). In Europe, it is estimated the 550,000 active and working people who die annually from NCDs cost the European Union economy EUR 115 billion or 0.8% of GDP, excluding additional losses associated with lower employment and productivity of people suffering from one or more NCDs (OECD/EU, 2016). In India, research has shown that, but for NCDs, GDP would have been between 4-10% higher in 2004 (Mahal, Karan, & Engelgau, 2010). Not only this, NCDs have been found to decrease wages and increase absenteeism (Kraut, Walld, Tate, & Mustard, 2001), affect labour supply (Gannon et al., 2004), reduce retirement ages (Suhrcke et al., 2007), and may fuel unemployment and economic inactivity (Lindholm, Burström & Diderichsen, 2001). The far-reaching repercussions of NCDs may include lowered return on human capital investments, a slow economic system resulting from reduced domestic consumption, reduced tax revenues and a rise in general health and social welfare expenditures (Wang, Marquez, & Langenbrunner, 2011). Thus in low resource settings such as those in most African countries, uncontrolled NCDs could further deepen underdevelopment, as scarce resources may be used to treat people with one or more NCDs. For example, the cost of health care estimated in 2001 attributed to HTN in sub-Saharan Africa was US\$ 2 billion (Gaziano et al., 2009).

There are strong indications that effective NCD control can lead to better health systems (Lopez et al., 2006). Analysis of changes in disease patterns could have implications for efficiency in the health system. In the context of LMICs, health resources are in short supply. To get the most out of the resources available to health planners and policy makers, there is the need for health systems to direct resources to diseases or risks with high disease burden. This implies that more resources would be preserved for health systems if NCDs and their risk factors were reduced to the barest minimum and tackled according to disease control priorities (Lopez et al., 2006). Besides,

controlling NCDs would reduce or postpone the use of medical resources which would open up financial opportunities for other purposes (Hou et al., 2016). The burden of care costs associated with NCDs can have a crippling effect on the health system. For example, one study found that a patient (insulin-dependent) in Vanuatu requires the equivalent drug resource allocation of over 76 other citizens on average, a serious burden on a health system that can provide insulin treatment for only 1.31% of the whole population (Anderson, 2013). Managing NCDs puts additional strain on human resources for health systems. With evidence showing that utilising the services of specialists leads to better outcomes (Greenfield, 1995), health systems are under considerable pressure to produce high numbers of diabetes educators, cytologists, physician specialists, and podiatrists to better manage the mounting NCDs in LMICs. These impacts coupled with the complex policy and health system considerations that come with effective NCD control imply that a concerted effort is needed from all stakeholders to keep NCD treatment demand under control. Thus, considering the impact on households, economies and health systems, the consequence of unattended NCDs on Africa could be devastating, and particularly worrying given the increasing burden of these diseases there.

1.3.1 A policy approach to non-communicable diseases: the role of national and international policies. Addressing NCDs in LMICs such as Ghana calls for the adoption and implementation of both national and international policies, strategies and interventions since these can make important impact on public health if correctly applied. National policies establish the broad context within which key actions and decisions on NCD control are taken. According to Mendis (2010), NCD policies help to catalyse and integrate legislative, regulatory and multi-sectoral actions across health and other sectors in a coherent manner. Such a policy would therefore improve and address actions across several issues that affect a range of NCDs (e.g. social determinants of health, population wide public health strategies, health system strengthening, etc.). This integration is central to the creation of a conducive atmosphere to support the health behaviours necessary for effective NCD management. National NCD policies also symbolize political commitment towards providing an overall roadmap for policy actions that prioritize NCD prevention. Additionally, in LMICs where political and administrative turnover in health departments is high, a national NCD policy and its implementation plan, although not guaranteeing continuity, would at least improve the chances of continuity of NCD actions over the long term. Thus, the role of policy in NCD prevention and control cannot be overemphasized. However, developing and implementing NCD policies has been a daunting challenge in many LMICs. This has been attributed to inadequate financial resources, a history of overemphasis on communicable conditions, limited capacity to manage NCDs, and low political commitment to NCDs (Aikins, Boynton, & Atanga, 2010; Nyaaba et al., 2017; Juma et al., 2018b).

Recognizing the limited policy action in LMICs, there is a large-scale international effort to encourage, provide legitimacy, evidence and support to develop the requisite policies for NCD prevention. The importance of international policy leadership for NCDs was recognized by two landmark events in 2011. The WHO Moscow Conference (28/29 April), and the UN High-level Meeting of the General Assembly, where NCDs were couched as a “challenge of epidemic proportions” with specific emphasis on Africa (UN, 2011), and were major events in global NCD management. At the end of these events, the critical role of national and subnational policies and health systems in mediating successful NCD control was emphasized with the adoption of a resolution (the Political Declaration of the High-level Meeting on the Prevention and Control of NCDs) by member countries (UN, 2011).

Prior to these landmark events, a number of international frameworks, conventions, and action plans had been introduced by the WHO to provide policy guidance to member countries in their effort to control NCDs and their risk factors. A Global Strategy for the Prevention and Control of NCDs was established at the 53rd World Health Assembly in 2001 (WHO, 2000), the Framework Convention on Tobacco Control (FCTC) was introduced in 2003 (WHO, 2003c) and at the 57th World Health Assembly, a Global Strategy on Diet, Physical Activity and Health (DPAS) was endorsed (Waxman, 2004). An implementation framework for DPAS (Resolution WHA 60.23) was introduced in 2008 (WHO, 2008) after which a Global Strategy for the Harmful Use of Alcohol came to force in 2010 (WHO, 2010a).

Two main action plans have also been developed. The first (for the period 2008-2013) was introduced at the 61st World Health Assembly in 2008 (WHA 60.23), and was based on the vision of the 2000 Global Strategy for the Prevention and Control of NCDs (WHO, 2008). The current Action Plan (WHA 66.10) is for the period 2013-2020. The Plan aims to build on the achievements of the 2008-2013 Action Plan and to operationalize the commitments made at the UN High-level meeting in 2011 (WHO, 2013). In general, these resolutions, frameworks and strategies are intended to provide a guide for the establishment of national policies and guidelines for controlling NCDs.

Although NCD policy action has been recognized as crucial for Africa with the holding of regional events such as the Brazzaville Conference (WHO Africa, 2011), and ratification of global conventions and resolutions by African countries, researchers have decried the slow policy action on NCDs in Africa (Mendis, 2010; Nyaaba et al., 2017; Juma et al., 2018a). Several countries there are yet to establish overarching national NCD policies and policies to manage individual risk factors (Nyaaba et al., 2017; Oladepo, Oluwasanu, & Abiona, 2018), and in countries where policies have been introduced, implementation is a big challenge. As Mendis (2010) has stated, how exactly gaps in NCD policy development and implementation can be addressed amidst severe

human resource challenges, financial resource constraints and competing health priorities in LMICs remains an unsolved puzzle. Nevertheless, research in specific contexts can make a substantial contribution in addressing formulation and implementation problems in NCD policy since policy development and implementation is influenced by political and socio-cultural realities. Although there have been a few studies analyzing country performances with regards to NCD targets and achievements (Nyaaba et al., 2017; Mwagomba et al., 2018), not many studies have investigated the processes involved in developing and implementing NCD policies in Africa, although this is crucial to policy success.

1.4 The Development of a Conceptual Framework for Hypertension and Diabetes Management in Ghana

1.4.1 The relevance of a conceptual framework. A conceptual framework has been defined by Jabareen (2009 p.51) “as a network, or ‘a plane’ of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena”. Apart from laying out the key factors, variables or concepts and indicating the relationship among them (Miles & Huberman, 1994), conceptual frameworks are also the starting points for research to guide researchers in designing studies and interpreting findings (Guba & Lincoln, 1989). The goal of HTN/DM control is to reduce the burden of these conditions in communities in Ghana. In the present study, a conceptual framework will help provide a broad structure for understanding important elements of HTN/DM policy and its relationships. The framework will help define a setting for this research and guide the interpretation of results. Above all, it will provide a vivid connection between the policy literature and HTN/DM, and contribute insights to the methodology, data analysis and discussion of the results of the study.

1.4.2 A policy framework for management of hypertension and diabetes in LMICs. In section 1.3.1, the role of national policies in the prevention of NCDs was stressed. However, to understand how policies can be used to address HTN/DM and other NCDs, the concept of health policy as it applies to NCDs must be understood. Health policy has been defined by Palmer and Short (1994 p.23) as “courses of action that affect that set of institutions, organizations, services and funding arrangement of the health care system in a country”. Thus according to this definition, health policy encapsulates actions or desired actions taken by public, private or voluntary organizations that impinge on the health of a population via the workings of the health system. This definition, however, appears to be narrow as it focuses only on the health subsystem and may not reflect the requirement for a broader scope for policy if it is to effect genuine change in both health and social environments. Milio (2001) captured this concept by coining the phrase ‘Healthy Public Policy’ to characterize policies that generally improve the conditions under which people live, encompassing the determinants of health and creating more healthy environments. Stahl et al.

(2006 p.18) stretched ‘Healthy Public Policies’ to ‘Health in All Policies’, as a way of inviting policy makers to highlight ‘the effects on health across all policies such as agriculture, education, the environment, fiscal policies, housing, and transport... to improve health and at the same time contribute to the wellbeing and the wealth of the nations through structures, mechanisms and actions planned and managed mainly by sectors other than health’. Considering that controlling NCDs calls for efforts that go beyond the health sector to include other sectors such as education, agriculture, trade and industry, sports, etc. (Nyaaba et al., 2017; Juma et al., 2018a), a systems approach is needed to understand the impact and linkages between other sectors and health as this has been found to be crucial in effective HTN/DM control (Butland et al., 2007; Birkland, 2015).

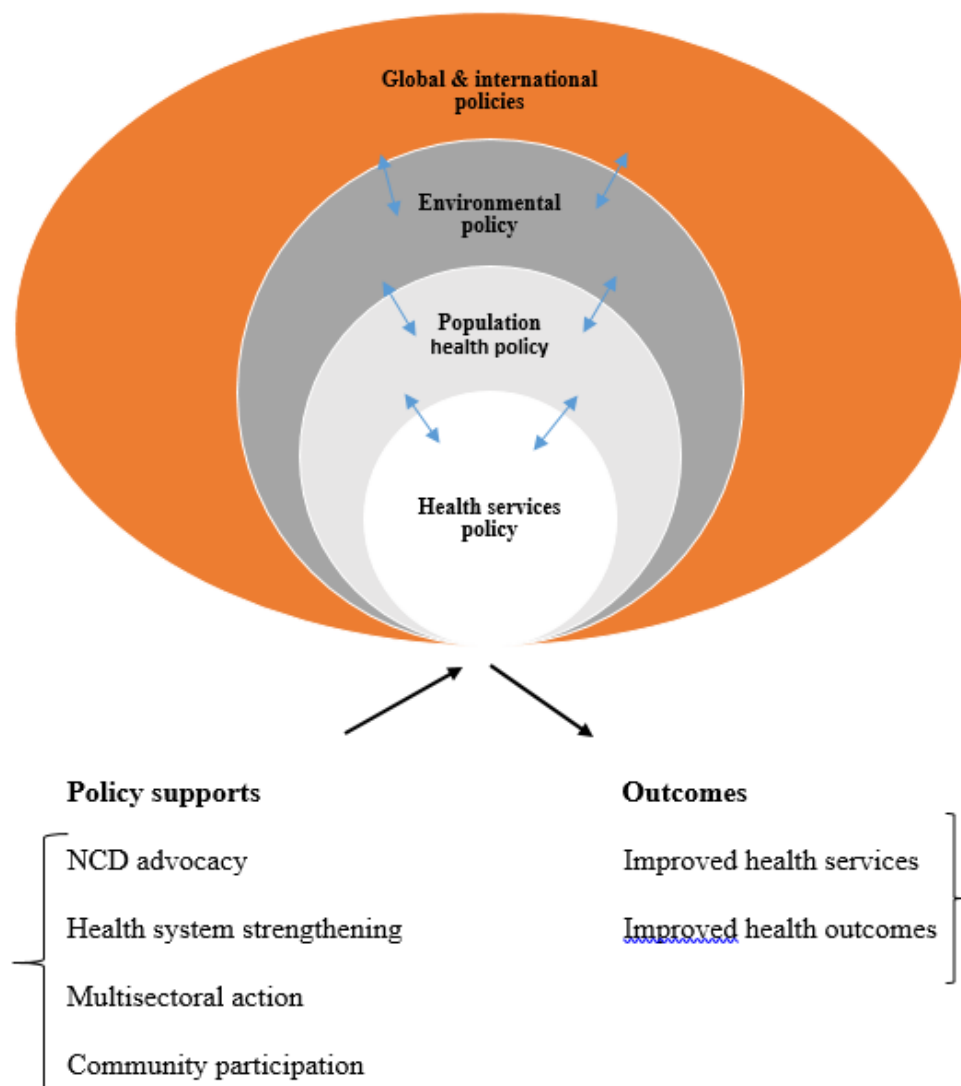


Figure 1.5. A policy framework for non-communicable disease control

Figure 1.5 represents a broad policy approach to the prevention and control of NCDs. Health services effort, being a crucial element of NCD management, has nevertheless been traditionally directed towards managers or at specific health care professionals such as doctors or nurses (Robles, 2004). However, for effective NCD control, there is a need for policies with emphasis on responsive health services that address demand and empower patients to make critical and informed decisions, rather than an emphasis on partial interventions that fail to address systems behaviour. This is because it is the systems behaviour that effects the needed changes in NCDs and not partial interventions (Robles, 2004). Health services policies for NCDs must also address the needs of individuals at risk or suffering from one or more NCDs, communities (e.g. ensuring participation in health education initiatives) and population-based services which have been found to be poor in many LMICs (PAHO, 2002).

The next level of the policy framework is population-wide NCD policies (Figure 1.5). Health services policies must be nested into population-wide NCD policies as shown in Figure 1.5. Population-wide NCD policies represent policies that usually target risk factors. Such policies detail key interventions for reduction of sodium intake, tobacco cessation, physical inactivity, and reduction of trans-fatty acids in food and other risk factors (Gaziano & Pagidipati, 2013). Population-wide NCD policies also address system-wide issues that impinge on NCD prevention such as human resources, financing, drug availability and information systems for NCDs (Nyaaba et al., 2017). Recent studies in sub-Saharan Africa indicate that many countries there are developing such policies. However, implementation of these policies has been difficult due to financial constraints (Nyaaba et al., 2017; Juma et al., 2018a; Mwagomba et al., 2018; Ndinda et al., 2018).

Although the social determinants of health are the underlying causes of ill health, these are hardly addressed in LMICs (Frieden, 2010; Canadian Public Health Association, 2016). As a result, environmental policies that address these determinants of health present a formidable approach to NCD prevention. Environmental policies are those that do not address NCDs directly, but have an impact on the overall health of populations and thus have the propensity to cause a change or control the elements in the physical or social environment. These measures could help address the availability of certain substances or products, their accessibility, or social norms that could have implications for health (Frieden, 2010). For example, good street designs, community recreation centres, and streetlights could improve physical activity. Addressing the social determinants of health implies the development and implementation of policies that tackle socioeconomic issues such as poverty reduction, improved education, access to water, electricity and other general factors that are known to be major health determinants and form basic foundation of successful human societies (Mackenback, 2008). For example, evidence shows that educational status, income levels and occupation are correlated with CVD risk factors (Winkleby, 1992). Thus, there

is a need for a whole of society approach that addresses challenges in education, poverty, underdevelopment and deprivation. This usually means investing in sectors other than health such as education, employment, trade, social development, agriculture and urban development. In effect, making alterations in the physical environment through access to life-enhancing opportunities and reducing life-threatening products, services and activities could improve NCD outcomes. For effective control of NCDs, population-wide NCD policies must be integrated into environmental policies that address the social determinants (Figure 1.5).

The policy framework for the management of NCDs must recognize the role of international policies in complementing national policy efforts (Figure 1.5). Several global agreements, conventions, regulations, action plans and declarations have been established by the WHO, UN and other bodies to support policy action at the country level. For example, the UN High-level Meeting on NCDs, Global Action Plans (2008-2013, 2013-2020), the WHO Framework Convention on Tobacco Control are examples of global commitments, action plans and conventions aimed at providing policy support in NCD management. Although these affect the system as a whole, they have often been separated from other policies which are usually national or sub-national in scope (Figure 1.5).

With specific regard to NCD policy effort, certain policy support mechanisms (Figure 1.5) may be necessary for effective management. A continuous programme of NCD advocacy (WHO, 1998) has been suggested as part of ongoing effort since this goes a long way to influence lifestyle changes necessary for risk factor control (Mendis, 2010; Shilton et al., 2013). According to the WHO (2019b), intersectoral action is not only relevant in NCD policy development and implementation but also in an effort to manage the social determinants of health. Recent studies in Africa suggest that although intersectoral action in NCD policy development has been high, this is not the case during implementation (Juma et al., 2018a; Mapa-Tassou et al., 2018), making it difficult for NCD targets to be achieved in many countries there (Nyaaba et al., 2017). Community participation must underpin NCD policy effort (Figure 1.5). Although many health systems in LMICs remain decentralized, public health decisions have remained centralized in national or provincial governments, a situation attributed to the fact that public health issues have not been integrated into reform efforts or local capacities have been limited (Robles, 2004). For effective support, there is a need to build local public health capacity and to bring to the fore evidence of the public health effects of various strategies, by participating in the design, monitoring, and evaluation of health initiatives (Robles, 2004). To overcome these challenges and provide efficient services, a total health system strengthening is needed especially in LMICs with weak systems. Attention should be given to activities and strategies designed to improve country health system

performance in a sustainable manner. Key components of the health system that need strengthening include human resources, governance, financing, information systems, health services delivery, the supply of quality medicines and basic technologies (USAID, 2015). To ensure that people do not suffer from complications of HTN/DM, health systems must be structured in such a way as to ensure equitable access to preventive, curative and rehabilitative services (USAID, 2015). Figure 1.5 shows that the implementation of national and international policies and the policy supports has the potential to lead to improved health services and outcomes.

1.5 Summary, Aims and Objectives of the Study

This chapter has shown that NCDs are an important public health problem internationally, in Africa and in Ghana, with significant costs to health systems and communities. The chapter has demonstrated also that HTN/DM are among the leading NCDs (Section 1.2.1) and underscored the crucial role of health policies in management of these conditions (Section 1.3.1). With regards to NCD policy, researchers in Africa have paid considerable attention to the content of policies and their impact on societies, but little research has addressed the process of policy development and implementation (Omar et al., 2010). While the technical suitability or appropriateness of the content of health policies is important, it is also essential to consider health policy processes themselves as these affect health programme choice and implementation (Agyepong & Adjei, 2008; Robles, 2004). To some researchers, the policy process is as crucial as the content of policies since this affects subsequent decision making and actions, and may determine the effectiveness of policies once introduced (Robles, 2004; Barker, 1996).

Historically, policy research in Africa and Ghana has focused on communicable diseases (Aikins, Boynton, & Atanga, 2010). This is not surprising given the historical prevalence of malaria, HIV/AIDS and diarrheal conditions (Korenromp et al., 2003). Although the increasing incidence of HTN/DM (Aikins et al., 2007; Bosu, 2010) has led stakeholders to call for the development of policies to address these, other reasons inform the necessity for research and policy action on these two conditions. Apart from being the two most prevalent NCDs in Ghana, HTN and DM share common risk factors and are themselves risk factors for other NCDs. Consequently, addressing HTN/DM is a good step to preventing other comorbidities. Additionally, policy guidance suggests that prevention is critical for both, recommended lifestyle interventions are similar for both conditions and both need careful clinical monitoring as a primary response (Beaglehole et al., 2008). Therefore, this study provides an opportunity to examine how the current policy process is

dealing with both established (HTN) and emerging (DM) conditions that have much in common in terms of lifestyle risks and possible responses.

There is little research evidence in Ghana that assists with policy development for NCDs, with the few studies available focusing on mental health issues (Omar et al 2010; Bird et al., 2010). Epidemiological studies and health services research on HTN and DM have been largely in the form of cross-sectional surveys of small and geographically diverse populations. In the absence of epidemiological data based on a nationally representative sample, the effectiveness of policy development may be limited, but the process through which policies themselves are developed and implemented, and how various stakeholders respond to this may have important positive or negative impacts (Robles, 2004). Consequently, there is a strong case for investigating how Ghana is managing the policy scenario for HTN and DM, and the likely consequences of this process.

1.5.1 Purpose and objectives of the study. The overall approach of this research is based on the role of health policy in the prevention and control of HTN/DM, as set out in the conceptual framework (section 1.4.2) and a review of the literature (in Chapter 2). Although, ultimately, a whole systems approach is needed to address HTN/DM, the broad scope that this implies was assessed as beyond the scope of this study. This study focuses on *health policy* within that broad system. As already noted, national health policies have a crucial role to play in mediating effective NCD control efforts. The review of the international literature (Chapter 2) demonstrates that while studies concentrate on the content of policies and their impact, there has been little research in Africa and Ghana on the process of NCD policy and implementation. This study, therefore, uses a case study approach and multiple data sources (key informant interviews with stakeholders in health services delivery, documents and focus group discussions with community members with HTN/DM) to obtain an empirical insight into how the policy process is being used to respond to HTN/DM in Ghana. Consequently, the overall purpose of the study is to understand the health policy process for the prevention and control of HTN/DM in Ghana. The specific research objectives are;

- To assess how policies for controlling hypertension and diabetes are developed and implemented in Ghana.
- To assess the way in which evidence is incorporated in hypertension and diabetes policy development and implementation.

- To examine how stakeholders understand and respond to the problem of hypertension and diabetes in Ghana.
- To identify the factors hindering the management of hypertension and diabetes in Ghana

1.6 Structure of the Thesis

This thesis is divided into eight chapters. As stated at the beginning of the current chapter, the first, provides an introduction and background to the study. An outline of the subsequent chapters follows.

Chapter 2 contains the literature review for the study. This examines the policy process including agenda setting, policy development and implementation process and the role of evidence, with an emphasis on NCD management and empirical examples, particularly from LMICs. The chapter examines specific NCD country examples and concludes with an insight into the challenges of the NCD policy process in LMICs.

Chapter 3 details the underlying methodology and specific methods used to achieve the objectives of the study. This includes a justification for the chosen research design and a discussion of steps used for obtaining, managing and analysing data for the study. The chapter also give details of ethical issues and the criteria used to ensure study rigor.

Chapter 4 presents the findings on how policies are developed and implemented for HTN/DM management in Ghana. Findings on how evidence is accessed and incorporated in HTN/DM policy development and implementation are also presented.

Chapter 5 presents findings on how stakeholders understand and respond to HTN/DM and the development of relevant policy in Ghana.

Chapter 6 presents findings on the key barriers to HTN/DM control.

Chapter 7 discusses the findings of the study in the light of international research, drawing out key experiences for HTN/DM management in Ghana and Africa.

Chapter 8 concludes the research in this thesis. It considers the strengths and weaknesses of the study, HTN/DM policy making and suggests areas for future research and action.

CHAPTER TWO

Literature Review

This chapter provides an overview and critical analysis of the literature on health policy making, particularly as it pertains to NCDs, especially DM and HTN, in LMIC generally and African countries, including Ghana in particular. The chapter begins by explaining how literature was collected for the review (Section 2.1). Then a brief overview of the concept of public policy, the context of contemporary health policy and the policy cycle are presented (section 2.2). Section 2.3 presents an overview and summary of recent studies of the NCD policy process in Africa. Key issues in the NCD agenda setting process in LMICs and policy development as it relates to NCDs have been outlined in section 2.4 and 2.5 respectively. A discussion of decision making in the policy process is presented in section 2.6. Section 2.7 focuses on NCD policy implementation with emphasis on the evolution of thinking on implementation and how this has influenced NCD policies. The remaining sections include a discussion of monitoring and evaluation (section 2.8), an analytical overview of the chapter (2.9) and conclusion (2.10).

2.1 Literature Search

2.1.1 Criteria for literature search. Four main criteria were used to guide the literature search process. These were: the relevance of the content to the study; the appropriateness of the context or setting; the types of research undertaken; and the language of the reporting documents. Table 2.1 describes this in detail.

Table 2.1.

Inclusion and exclusion criteria for literature search focus

	Criteria for inclusion	Criteria for Exclusion
Relevance	The document explicitly describes the policy process in general or as applied to health.	The document focuses specifically on other aspects of the policy scenario other than the policy process.
	The document is focused on NCD services delivery and especially on hypertension/diabetes services.	The document is not focused on health services delivery

Context	Although a few documents from HICs were included based on their relevance to the global NCD situation, the review focused mainly on documents relating to LMICs.	HICs with little relevance to LMICs
Study types	Evaluative, descriptive, epidemiological, case studies and reviews	Opinion pieces
Language	English	Languages other than English

2.1.2 Strategy for literature search. The electronic databases used in the literature search were Google Scholar, Google, PubMed database and ‘MultiSearch’ (University of Canterbury electronic database). Additionally, other articles not indexed in these databases were sought through Medline and Web of Science. A key strategy used in the literature search was the snowball approach, using sourced documents to identify and locate additional literature (Wohlin, 2014). In searching for relevant documents, key terms and phrases were used independently or combined using “Boolean logic”. In addition, free hand searches of reference lists in documents of key organizations including the West African Health Organization (WAHO), WHO, the Ghanaian Ministry of Health, and WHO African Region were used. To guide the search, literature were categorized into policy and interventions literature, literature on study setting (health services for NCDs) and geographical location (LMICs, Africa, Ghana). In most cases, key terms were combined from these categories to form phrases to restrict the search (e.g. chronic disease policy development in LMICs). Table 2.2 details key words, terms or phrases used in the literature search and how these were guided by the categories.

Table 2.2.

Search terms used for searching electronic databases

Policy	Setting	Location
Policy, public policy, policy process, policy development, policy implementation, stakeholders and policy, health policy, chronic disease policies, non-communicable disease policies, policy context, policy-making, policy-making process, policy formulation, chronic disease policy, policy challenges, policy response. Policy implementation, implementation, agenda-setting, policy agenda-setting, policy evaluation, policy monitoring, policy cycle stages, public policy-making, policy decision-making, making health policies	Health services, health services delivery, primary care services, chronic disease services, chronic disease care, health system, community health services, health delivery for chronic diseases, chronic disease interventions, health systems, health care delivery, chronic disease management, Non-communicable disease services, hypertension care, diabetes care	High-income countries, developed countries, LMICs, Africa, sub-Saharan Africa, West Africa, Asia, Europe, Ghana

During the literature search, the relevance of documents were informed by their abstracts or titles based on the criteria for inclusion/exclusion already detailed in Table 2.1. To keep track of relevant literature, documents and papers were imported and stored using ‘Zotero’, (<https://www.zotero.org/>) and where documents were specifically recommended by supervisors, they were kept in Slack (<https://slack.com/>), a platform for sharing and reading documents. After reading relevant articles, citations and bibliographies were organized in Latex using ‘Bibtex’ (<http://www.bibtex.org/>) for referencing. The literature included in the research were peer reviewed journal publications as well as documents from grey literature judged as authoritative sources by the researcher (Government of Ghana documents, research reports, WHO documents, university theses).

2.2 Public Policy: Conceptual Overview

The concept of ‘policy’ does not lend itself to easy interpretation. Cunningham (1963 p.229) for example, stated that “policy is rather like the elephant, you recognize it when you see it but cannot

easily define it". Consequently, different thinkers have given different definitions of the concept. Thomas Dye (Dye, 1972) offered a definition that focused on the actions of government and defined policy as anything a government chooses to do or not to do. Thus to Dye, public policy involved a choice or decision on the part of government to act on a particular issue or not to act, a position which was emphasized by Smith (1976 p.13) who saw policy as "a choice of action or inaction, rather than the effect of interrelating forces". Smith's conceptualization puts emphasis on governmental decisions rather than the interrelating processes leading to these actions or decisions, and how relevant these decisions are in addressing public problems.

Easton (1953 p.130) on the other hand saw policy as a web of decisions and actions, a point buttressed by Heclo (1972 p.85) who defined policy "as a course of action or inaction rather than specific decisions or actions". These thinkers conceptualized public policy as being about the various processes, phases, and milestones in arriving at peculiar decisions or choices. This position has been forcefully brought home by other thinkers such as Jenkins (1978 p.15), who saw policy as a "set of interrelated decisions regarding the selection of goals and the means of achieving them within a specified situation". From Jenkins' conceptualization, policy is about varying and competing goals and problems where an aspect catches the attention of policy makers, after which they determine which options or alternatives help in resolving the problem so identified. Essentially, it involves how policy choices are made as well as means for addressing them.

From the conceptualizations above, it is clear that although the early thinkers focused on 'government' in their understanding of policy, they were not oblivious to the broader processes that were taking place. Two streams of thought on public policy are therefore worth noting; the first stream focuses on actions whilst the second examines the processes of decision making. Both include considering the extent to which they best reconcile the identified problems with how effectively and efficiently the policy will help address these. These streams form the basis of modern conceptualizations of policy although the focus on government has diminished in recent times to a broader understanding of 'governance' as policy has come to involve a number of actors outside of government (Hill & Varone, 2014).

2.2.1 The context of contemporary health policies. As noted in section 1.4.2, health policy, a subset of public policy, deals with actions that affect the health system. Broadly, ideas on health policy analysis have been derived from developed country settings (Walt et al., 2008). Even though there are implications for policy making across different settings, health sectors themselves have specific characteristics that affect public policy. These include the organization of health services and other institutional arrangements, the availability of robust evidence, the nature of health interventions, and professional cultures that present peculiar challenges to policy makers, regardless of stage of development. Considering that context is the milieu within which interventions are mediated (Exworthy, 2008), an understanding of the health policy environment is essential for appreciating the challenges that confront policy makers. Health policy makers in LMICs formulate policies amidst weak regulatory systems, over-reliance on donor inflows, and weak purchasing power environments and monitoring systems as shown in empirical studies in Malawi, Nigeria, and Kenya (Juma et al., 2018a; Mwangombwa et al., 2018). These considerations make the context of health policy making important in understanding the policy process.

The alternative contexts for health policy making also have implications for policy analysis and the management of health conditions. Traditionally, policy analysis and formulation rested with actors in the public and governance sector such as politicians and bureaucrats (Grindle & Thomas, 1991). However, the past few decades have witnessed, even in LMIC in Africa (Juma et al., 2018a), the inclusion of a kaleidoscope of stakeholders such as non-governmental organizations, advocacy groups and private for-profit organizations in policy discussions. This trend has not negated the role of the state and government actors in the policy endeavour, and so while the process of healthcare governance provides inclusiveness in the policy process, dealing with such varied interests makes the process a complex one (Mendis, 2010). Examples of this have been noted in South Africa and Malawi during the development of NCD policies where it was difficult to reach agreement on policy issues due to divergent interests and views (Juma et al., 2018b; Mwangombwa et al., 2018). To manage this process effectively, a guide or structure that streamlines processes and addresses complex relationships among policy actors may be required. The policy cycle becomes important in this regard and is crucial in helping to understand the complex issues that affect health policy (Barker, 1996).

2.2.2. The policy cycle. The policy cycle conceptualizes the policy process as a series of steps and gives a rational framework for thinking about it in a systematic way (Howlett & Ramesh, 1995). According to Bridgman and Davis (2003), apart from the fact that the policy cycle helps to

make sense of the policy process, it is instrumental in setting out a sequence of steps necessary to turn ideas into recommendations in an otherwise dizzying milieu of policy making. Although the policy cycle offers a flexible framework for understanding public health policy, failure to see the cycle other than a first step in the policy framework could be a costly mistake (Bridgman & Davis, 2003). It must be stated that although the policy cycle is a generally accepted framework for populating ideas on the policy process, there is not a universally accepted model of the cycle. The main idea or principle is to attempt a demystification of the complex policy making procedure by breaking the process down into a number of stages.

A plethora of ‘policy cycles’ have been put forward to suit contextual factors and local exigencies. For example, whereas Barker (1996) gave a broad outline of the policy cycle as involving issue definition, setting objectives, priority setting, defining options, appraising options, implementation and evaluation, Bridgman and Davies (2003) put forward a more specific ‘Australian policy cycle.’ According to Howlett and Ramesh (1995), it is important to avoid the debate on which model of the policy cycle works best, but to keep focus instead on the problem-solving logic behind the policy cycle which ensures relevance to a range of contexts, including LMICs. Consequently, Howlett and Ramesh (1995) put forward a juxtaposition of the phases in applied problem-solving and the stages in the policy cycle, which is summarised in Figure 2.1.

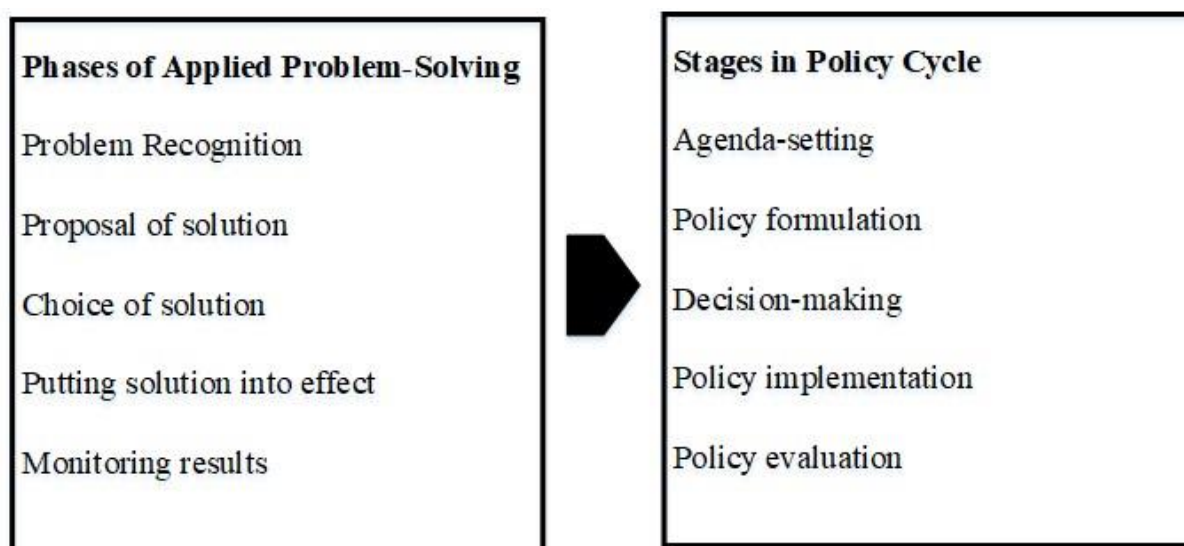


Figure 2.1. *Stages of the Policy Cycle and their relationship to applied problem solving.*

Source: Howlett and Ramesh, 1995

According to Howlett and Ramesh (1995), this is a useful model for understanding the logic behind the policy cycle as a problem solving model. They explain that in this model, agenda setting is a process for bringing problems to the attention of decision makers; policy formulation refers to how policy options are developed or formulated; decision making refers to how governments adopt a particular course of action (or non-action); and policy implementation involves putting actions into effect; Policy evaluation refers to the process of monitoring policy results by actors of state and society after which a redefinition of the problem and solutions may begin.

As noted by Howlett and Ramesh (1995), the main advantage of this model is the simplification of the complex policy making process into a limited number of steps, each of which can be tackled alone or in terms of how it relates to the other steps or stages in the cycle. The model also allows an examination of the role performed by different actors and institutions (such as government and private entities) at various stages of the policy procedure. The drawback in such a model is its workability in real life situations, as the model assumes that problems are solved in a simplistic and linear way (Stone, 1988). Additionally, although the logic behind the model may be plausible, in practice, the stages may be compressed or skipped, hence, may not represent an exact order as set forth by applied problem-solving logic (Stone, 1988; Howlett and Ramesh, 1995). Although the policy cycle depicted here has inherent weaknesses inherited from the complexities of the policy process, the model offers a useful guide in identifying the key issues, stages and how each step relates or influences the whole policy process; thus, giving decision makers, whether in HICs or LMICs, a useful basis for planning how to go about their work.

2.3 Recent Research into the NCD Policy Process in SSA

Non-communicable disease policy process is a relatively new area of research in SSA. Nevertheless, a few studies have been conducted on NCD policy processes in recent times with most studies focusing on the development of policies for alcohol, tobacco and nutrition. It is therefore imperative to recognise the few studies conducted on the policy process and provide details.

In a comprehensive multi-country case study involving Cameroon, Malawi, South Africa, Nigeria and Kenya with each country as a separate case study, Juma et al (2018a) used key informant interviews with national policy makers in various sectors and document reviews to describe the policy process for the development of NCD policies. The study also examined the extent of inclusion of the WHO 'best buy' interventions in NCD policies in these countries. The study found that policy processes in these countries have been uneven, with tobacco and alcohol receiving more

attention, and the policies only addressing the WHO 'best buy' interventions to some extent. South Africa was the only country that was found to have made positive strides in the policy process for nutrition policies. It was concluded that implementation of policies is a major challenge in these countries with low political support, resource allocation challenges, and availability of local information for monitoring impacts the main issues of concern.

In a related study, Juma et al. (2018b) examined NCD policy development in five African countries (Kenya, South Africa, Nigeria, Cameroon and Malawi), with emphasis on the application of multisectoral action (MSA) in risk factor policies. The authors collected data through key informant interviews with policy makers and implementers as well as document reviews in a multiple case study approach. A higher MSA was found in the development of tobacco policies in all the countries, followed by alcohol policies. In addition, MSA was coordinated through parliamentary committees and inter-ministerial institutions. Key barriers included complexity in coordinating sectoral engagements, inadequate resources, a lack of awareness about the contribution of various sectors in the NCD policy process, and weak political will. The study concluded that stronger coordination mechanisms and clear guidelines are needed for effective MSA in Africa, with emphasis on capacity building approaches and resource generation in NCD policy processes.

Ndinda and colleagues (2018) examined the evolution of NCD policies after apartheid in South Africa, the extent of MSA in NCD policy development, and the rationale for the inclusion of the WHO 'best buy' interventions in the policy process. The authors used a case study design to assess NCD risk factor policies, with data collected through document reviews and interviews with 44 key informants from public and private institutions. They report that NCD policies for the major risk factors had been developed in the 1990's following the abolition of apartheid even before the global urge for countries to develop such policies. However, more effort is needed in implementation as even after the development of these policies, prevalence of risk factors continue to rise with about 30% and 60% of men and women being overweight after the development of these policies. The authors add that while MSA is applied in policy development, the same could not be said during policy implementation.

Oladebo, Oluwasanu and Abiona (2018) studied the evolution of tobacco policies in Nigeria with specific consideration for the inclusion of the WHO 'best-buy' intervention and MSA. Using a

descriptive case study approach, the authors reviewed 18 policy documents and interviewed 44 key informants. The authors found that although efforts to establish tobacco policy started in the 1950's, a comprehensive tobacco policy was finally developed in 2015. The overarching tobacco policy was influenced by strong MSA action and covered all WHO 'best buy' interventions although other policies on tobacco were found to have limited MSA and WHO 'best buy' strategies. The main barriers to the policy process were inadequate funding and conflict of interest (regarding the protection of people from tobacco smoke in relation to the economic contribution of the industry).

In Cameroon, Mapa-Tassou et al. (2018) examined two decades of tobacco policies utilizing interviews with stakeholders and policy documents in a case study approach. The purpose of the study was to explore the development and implementation of tobacco policies and the extent to which these policies aligned with the 'best buy' interventions. The study concluded that twelve out of the nineteen tobacco policies address the WHO 'best buy' interventions, adding that tobacco policies have been driven by the local context to address NCDs, and internationally by the WHO FCTC. The study indicated that the main barriers to implementation have been inadequate funds and a lack of synergy between sectors.

Studies on alcohol policies in Africa appear to be focused on Malawi. Mwangomba et al. (2018) applied a qualitative case study design to study the development of alcohol policies in Malawi and the use of MSA in the policy process. The study involved interviews with 32 key informants as well as review of 12 policy documents. The study detailed successful development of alcohol policies with emphasis on the role played by NGOs (such as Drug Fight Malawi), but found that MSA has been hampered by resource constraints, human resource challenges, and coordinating the views of different stakeholders in the policy process.

Ferreira-Borges et al. (2014) also studied the alcohol policy process in Malawi. The study aimed to describe the historical development of alcohol policies with emphasis on stakeholder involvement, changes in the policy development process, and examination of the impact of vested interest in the policy process. The authors adopted a case study approach. Data were collected through observation, media analysis, review of documents and interviews. The study underscored the role of civil society organizations in the development of alcohol policies in Malawi and showed that the policy formulation process involved three main activities namely; setting up policy

development structures and establishing a lead agency, capacity building and data gathering, and consultations and developing policy documents (including drafts).

Hoffman and Lee (2012) detailed successful sodium legislation in South Africa and indicated that the development of the policy involved collaboration between government, academia and the food industry. The study underscored the crucial role played by international and local evidence in the use of mandatory sodium regulatory mechanisms. The study revealed that a key challenge in South Africa was health promotion in the area of nutrition, and that a strong commitment is needed from government and stakeholders to ensure effective implementation. The study involved literature reviews using key words to search the 'PubMed' database for research papers on sodium consumption and HTN in South Africa. This was supplemented with analysis of policy documents in the government Gazette and proceedings of documented stakeholder deliberations.

Omar et al. (2010) studied mental health policy processes in Ghana, South Africa, Zambia and Uganda with the aim of comparing policy development and implementation of mental health policies in these countries. Adopting a comparative analytical approach, the authors collected data through interviews and review of policy documents. The authors found mental health policies in these countries to be weak, adding that policies were either in draft forms or completely non-existent. The main influencing factors affecting mental health policies in these countries included inadequate mental health data to monitor outcomes, stigma attached to mental health conditions and low prioritization by country governments and the donor community. The authors concluded that these factors have contributed to poor mental health services in these countries and added that civil society organizations and media groups must be supported to help bring mental health issues to policy makers and governments in these countries.

In a similar study, Draper et al. (2009) focused on mental health policy development in South Africa using quantitative and qualitative approaches. The authors used the WHO assessment tool for mental health systems to collect data on mental health system, and semi-structured interviews with key informants in mental health policy development and implementation. The study concluded that mental conditions, like other NCDs, are of low priority in South Africa and that there should be more stakeholder involvement through effective dissemination of policy and improved communication between various levels of the health systems once policies are approved.

Although researchers in SSA have started investigating NCD policy processes, only a handful of studies have been carried out thus far. Focusing predominantly on alcohol, tobacco, nutrition, and mental health, these limited studies concentrate mostly on South Africa, Malawi, Cameroon and a few other countries, with main emphasis on MSA and the inclusion of the ‘WHO best buy’ interventions. Nevertheless, these studies have proved important to the understanding of the various stages of the policy process, and it is to these stages that the researcher now turns.

2.4 Agenda setting

An agenda has been defined as a “set of issues that are communicated in a hierarchy of importance at a point in time” (Dearing & Rogers, 1996 p.2). In particular, agendas are usually issues of concern or problems that affect a number of people. According to Hill and Varone (2014), these are usually social or political issues that needs attention and denote a collective construction related to the interests and values of those concerned. This is in contrast to issues that may be seen as private or affect specific individuals. To put this discussion in perspective, Gusfield (1984) made a distinction between ‘social’ and ‘public’ problems by stating that social issues do not necessarily become public issues although they may be issues of political controversy. As a result, public problems are extensions of those social problems seen as issues in civil society, and these problems become public by their inclusion in political discussions. Thus, an explanation of public problems usually has political connotations (Hill & Varone, 2014). So for HTN/DM to be considered as agenda items, they need to be seen not only as civil society (or social) issues but must also attract political attention. The process by which these problems or issues come to attract governmental attention is referred to as agenda setting (Howlett & Ramesh, 1995). In health, agenda setting may help explain why information regarding particular issues are available and not others, and why certain health problems, such as HTN/DM, come to be addressed through policy actions and while others receive more or less attention.

2.4.1 Health policy agenda setting and NCDs. According to Dearing and Rogers (1996), three main features of the agenda setting process can be identified: the media agenda, the public agenda and the policy agenda, with emphasis on the relationships among these components. Dearing and Rogers (1996 p.8) connect these components to the concept of ‘salience’, “the degree to which an issue on the agenda is perceived as relatively important”. They argue that the focus of agenda setting is when the salience of an issue changes from the perspective of the media, the public or policy makers. Research evidence on NCDs supports this as in countries such as Bolivia

and Peru, the lack of ‘salience’ for external resource provision and civil society action negatively influenced political agenda setting on nutrition (Pelletier et al., 2011).

The role of the mass media in influencing the agenda setting process is prominent in many countries. Media activists and institutions engage in NCD advocacy and can positively or negatively influence the agenda setting process, as shown in research from South Africa. There, Ndinda et al. (2018) found that the influence of the South African Broadcasting Corporation was very strong in an attempt to block tobacco regulations from getting on the policy agenda. This became even more serious when prominent media houses went to parliament to block proposed tobacco regulations, citing loss of advertising revenues and jobs. The authors also found that journalists were threatening not to publish pro-tobacco legislation in their newspapers as they had different interests.

The relevance of public opinion in shaping the agenda setting process in LMICs is well recognised. Studies have shown that in African countries such as Ghana, Uganda and Kenya, the limited interest in NCDs by the public has ensured limited impact of these diseases on the health agenda (Omar et al., 2010, Bird et al., 2010). The weak impact of Civil Society Organizations (CSOs) on public agenda in South Africa has relegated certain NCDs such as mental health problems to low priority, with this being identified as particularly absent on the health agenda due to ‘poor understanding and value by the public’ (Omar et al., 2010 p.5).

On the other hand, CSOs and non-governmental organization (NGOs) have been able to affect the public agenda on behalf of NCDs in several LMICs. In South Africa, for example, Ndinda et al. (2018) found that CSOs such as Left and Tobacco Action Group, the Heart Foundation, the Cancer Association of South Africa and the Council against Smoking, were instrumental in stimulating public support for getting the tobacco control issues on the policy agenda. In Uganda, the Uganda NCD Alliance has worked on building a strong civil society base for NCD activism (Schwartz, Guwatudde, Nugent, & Kiiza, 2014). Other studies have confirmed the role of NGOs and CSOs as important influencers of public opinion for NCD agenda (Juma et al., 2018b; Mwagomba et al., 2018).

According to Dearing and Rogers (1996), relative salience of an issue on the media agenda determines how the public agenda is formed, which also influences the key issues policy makers consider on the health agenda. Hence, the mass media and public opinion have a significant role

to play in shaping up the agenda setting process in LMICs as empirical studies have shown (Omar, 2010; Mwagomba et al, 2018).

2.4.2 Factors influencing NCD presence on the public health agenda in lower and middle income countries. A number of factors influence agenda setting in LMICs. These factors determine whether or not an issue gets on to the NCD agenda. These include political will, economic considerations, data availability, cultural considerations and the role of international agencies.

Throughout Africa and in most LMICs, the most important factor influencing the NCD agenda is political will. Politics has a significant impact on what issues make it onto the health agenda, with those resonating with the interests of governments and higher political actors being given most attention in the agenda setting process. This is supported by evidence in several LMICs as less popular health problems among politicians are neglected although they may be crucial public health problems. In South Africa, Ndinda et al (2018) found that NCDs were high on the political agenda due to the special interest of key political figures such as Dr Aaron Motsoaledi, who, as a physician, appreciated the significance of NCDs and who, after being appointed by the Zuma administration as Vice president, tackled NCDs alongside HIV/AIDS. Conversely, a lack of political will has been seen to prevent certain NCDs from being considered on the agenda in some African countries such as Ghana, Nigeria and Kenya (Omar et al., 2010). In Uganda for example, Bird et al (2010) found that politicians or policy makers with mental health experiences were more likely to take up mental health issues. They also found that mental health issues are low on the health agenda because few events have been held where politicians and other influential people have been invited so that these issues can be brought to their attention. In the Philippines, political considerations were responsible for pushing the tobacco and alcohol measures on to the agenda after health considerations failed to achieve this objective (Rasanathan et al., 2017). In certain African countries such as Uganda and Kenya, particular health problems may be considered in the agenda setting process as a fulfilment of political campaign promises (Omar et al., 2010). Political considerations as a key factor in agenda setting have also been seen to influence agenda setting in other countries such as Guatemala, Peru and Vietnam (Pelletier et al., 2011).

Economic issues are also key factors in the agenda setting process. In many LMICs, lack of resources to push certain problems to the attention of policy makers means they are neglected. Evidence from Nigeria, Malawi and Cameroon indicates that key stakeholders have had to fund their involvement in NCD policy development themselves (Juma et al., 2018b), hence NCDs have not received enough attention on the health agenda since many of these CVOs and NGOs depend on erratic donor funding. In most cases, even when issues have been identified as needing to be on the health agenda, resources to support further action in the policy process have been unavailable,

or diverted to competing priorities. According to Bird et al. (2010) and Omar et al. (2010), lack of resources have negatively affected priority for NCDs such as mental health diseases in Ghana, Uganda and Zambia, even in situations where these conditions are prevalent, as is the case in Ghana, where mental illness is ranked 12th on OPD attendance. In Uganda, it was not until a loan from the African Development Bank was received before health funding for mental illness increased from 1% to 4% , bringing its relevance to the fore (Bird et al., 2010). Economic considerations have negatively affected the NCD agenda in many LMICs as shown in empirical studies in Africa and other LMICs such as Peru and Bolivia (Pelletier Juma, 2017; Mwagomba et al., 2018).

Availability of data is pivotal to agenda setting. In most countries, data on NCDs in general and HTN/DM in particular are lacking. Policy makers therefore find it difficult to frame the problem as it is not well-supported by evidence. In South Africa, it was found that concerns on the availability of panel (longitudinal) data needed to identify NCD patterns and trends and to inform policy on risk factors delayed most policy making on chronic diseases (Ndinda et al., 2018). In a synthesis of WHO country profile reports from 54 African countries, Nyaaba et al. (2017) found that almost all African countries lack the needed infrastructure on NCD surveillance, hence the inadequacy of data on NCDs has affected priority for NCDs.

In certain African countries, cultural issues have been seen to affect the agenda setting process. For example, in South Africa, it was found that the stigmatization of some NCDs among policy makers deterred them from taking up these issues in policy discussions, hence affecting NCD policy development (Omar et al., 2010). In Iran, Maysamie et al. (2010) found that tobacco use was a stigma among women, hence prevalence levels were underreported, affecting its prioritization.

The role of donor agencies on the agenda setting process cannot be discounted. Meessen et al. (2011) found that in countries such as Liberia, international donor agencies and NGOs exerted considerable influence on the health agenda. Donor and international agencies have also influenced agenda setting in Ghana and Burundi. For example, since international donor agencies expressed their preference for free health care in their projects, some African countries (such as Ghana and Burundi) suspended user fees for certain health services, perceiving this as the best way for retaining these financial and technical partners in periods of financial frailty (Meessen et al, 2011).

In Ghana, the few existent studies on the agenda setting process for NCDs have focused on mental health (Omar et al. 2010; Bird et al. 2010) and, although mental health conditions are NCDs, Ghana maintains a separate policy for mental health. There is therefore a paucity of research on the agenda setting process for NCDs generally, including HTN/DM, and how agenda setting influences the wider policy process.

2.5 Policy formulation/development

As an integral part of the policy cycle, policy formulation has been described as the ‘stage in the policy process in which options that might help resolve issues and problems are recognized’ (Howlett, 2010 p.29). Policy formulation is inherent in almost all, if not all, models of policy making and deals with ‘generating options about what to do about a public problem’ (Howlett 2010 p.29). Policy formulation has been seen as a highly complex phenomenon (Howlett & Ramesh., 1995). However, no matter how complex the process might be, the basic conceptualization is that policy formulation starts when governments identify a need and puts forward various options to respond to this. In most situations and as the case has been for NCDs in LMICs, needs are often identified by external agencies, such as CSOs or WHO as international attention has heightened the need for LMICs to develop national policies to manage NCDs. In Malawi for example, it was Drug Fight Malawi, an NGO, which spearheaded the country’s alcohol policy (Mwagomba et al., 2018). Policy formulation involves elimination of less desirable options, until a final or preferred option is confirmed.

2.5.1 Non-communicable disease policy development: key components. The development of national health policies, strategies, and plans is a complex and dynamic exercise characterized by variations in political, historical, and socio-economic influences. As such, there is no single blueprint for developing policies for NCD management. This notwithstanding, research has shown that certain key components are crucial for effective NCD policy development and which have also been buttressed by the WHO (WHO, 2018b). These components include situational analysis, policy leadership, stakeholder involvement and policy integration.

Situational analysis. The WHO (2018b) advises a thorough situational analysis as a crucial component of NCD policy development. The purpose of this exercise is to improve policy makers’ understanding of the current situation. According to Green (2007), the situation analysis offers two main benefits; first, it provides a common reference point for the remaining aspects of the policy process, and second, it gives the background for selecting priority areas of concern for the policy process. In addition, the very basis of assessing the background against which the policy must be overlain may bring new insights into the policy process. This is essentially a public exercise and may initiate the process of getting other participants and stakeholders involved in policy making (Green, 2007). The situation analysis involves an assessment of the current health conditions of the country and a comprehensive description of the NCD situation, epidemiology, demography

and future health issues that will influence decisions on NCDs (WHO, 2018b). According to Mendis (2009), a thorough NCD situation analysis for policy development should include socio-economic and demographic data, data on profile of behavioural risk factors, morbidity statistics related to major NCDs, health resources for curative and preventive services, stakeholder analysis, etc. As a result, a thorough situational analysis calls for availability of data in the health system. To this end, the WHO has tasked governments or health departments to develop institutional capacities to manage cause-specific mortality and morbidity data for NCD policy development (WHO, 2013). However, available evidence shows that although cause-specific data on NCDs is a worldwide challenge in both HIC and LMIC, the situation is more critical in LMICs as these countries are yet to establish and strengthen institutional capacity to address epidemiological trends for policy development and implementation (Mathers et al., 2005). For example, a global study on availability of cause-specific data found that many LMICs had inadequate or no data on cause-specific mortality, and that the problem is more serious in Africa (Mathers et al., 2005).

Country profile research in Africa supports this, as more than half of countries there lack the capacity to track cause-specific mortality on NCDs, a situation revealed by empirical studies to have negatively affected NCD policy development in almost all countries on the continent (Nyaaba et al., 2017). In Ghana, empirical studies on the availability of data for NCD policy action are rare. A few LMICs, however, have recognized the role of epidemiological data to the policy process for NCD policy, and their improved health outcomes have been attributed partly to such institutional strengthening mechanisms. These countries include Thailand (Patcharanarumol et al., 2011) and Rwanda (Binagwaho, 2012). The unavailability of data in many LMICs indicate that NCD policy development is likely to suffer from a poor definition of the problem (WHO, 2018b).

Policy leadership. Following the 2000 World Health Report which stressed the stewardship role of governments, the role of policy leadership has become a critical issue for health systems. This role is critical as it incorporates the leadership expectations of governments and encompasses its responsibility for defining the vision and direction of health policy. The leadership role also empowers government and other key institutions to exert influence through legislation and advocacy as well as collect and use information (WHO, 2000). The WHO expects the Ministries of Health or health departments of member countries to assume leadership in policy development (WHO, 2018b). Research shows that most policies on NCDs in LMICs are spearheaded by the health departments as was the case in Nigeria, Kenya and South Africa in the formulation of tobacco and salt legislations (Juma et al., 2018a; Omar et al., 2010). This

notwithstanding, other bodies have been found to play prominent roles in NCD policy development in various countries in Africa. In Malawi, the first ever stakeholders' meeting on alcohol was the initiative of an NGO, Drug Fight Malawi which was instrumental in developing the alcohol policy (Mwagomba et al., 2018). The same applied to the development of the alcohol policy in Kenya, with a local institution, the National Authority for the Campaign against Alcohol and Drug Abuse providing policy leadership (Juma et al., 2018a). Despite the efforts of other bodies, the ministries of health of various countries should have the capacity to lead NCD policy formulation within the national health development agenda and be accountable for implementation of policies developed (Mendis & Fuster, 2009).

Stakeholder involvement. The idea of active involvement in policy making of different stakeholders has been based on the notion that people or groups affected by a policy have a moral right to contribute to decisions that affect them (Pollock et al., 2018). The stakeholder engagement process ensures shared ownership of policies by key actors in the policy development process. It also makes it possible to include the views of experts from health and other disciplines as well as the concerns and aspirations of different interests groups (Pollock et al., 2018). The WHO identifies engagement with stakeholders within and outside the health sector as a key element of the policy development process (WHO, 2018b). Evidence shows that where stakeholders are not involved in the policy process, there is apathy and lack of support in the implementation of policies (Nyaaba et al., 2017; Juma et al., 2018a; Juma et al., 2018b). Stakeholder engagement must be achieved within a broad programme of consultation and policy dialogue which help to build consensus on the values, directions and overall goals of the policy. According to WHO (2018b), key stakeholders to be invited in the development of NCD policies include government institutions, CSOs, advocacy groups, local government, UN agencies and the WHO, patients, providers, and payers.

In Africa, Juma et al. (2018b) examined MSA in NCD policy development in selected countries and found that several stakeholders are involved in NCD policy development to various degrees. Policy projects have included different government sectors, the private sector, NGOs and international organizations although stakeholder involvement varied according to the policy being developed, with high involvement in tobacco, alcohol, nutrition, physical activity and strategic plans in that order. In South Africa however, some stakeholders in the food industry were not consulted during salt legislation (Juma et al., 2018b). The few studies conducted in Africa on NCD policy development show some challenges in the stakeholder engagement exercise. Stakeholder

consultation has largely involved players at the national level, with little involvement of district level stakeholders (Bird et al., 2010; Omar et al., 2010). Also, the process is pivoted on nominal inclusion of representatives rather than a full collaborative effort as was found in South Africa and Malawi, and a lack of process documentation, making it difficult to track the actual contribution of each stakeholder to the development of policies (Juma et al., 2018a, 2018b).

Policy integration. Horizontal linkages in NCD policy development includes alignment with broad system policies addressing the social determinants of health. These are policies that, although outside ‘health’, have implications for health. The NCD policy must therefore be developed in line with policies in sectors such as economic development, agriculture and nutrition, sports, trade and industry, urban design, etc. This is crucial because of the influence of the social determinants of health (improved education, access to health services, poverty reduction etc.) on NCD management (Frieden, 2010). Evidence points to the impact of these determinants on health in both HICs and LMICs (Mackenbach et al., 2008). However, with specific regard to NCD management, these social determinants are yet to be fully addressed in most LMICs (Frieden, 2010; Canadian Public Health Association, 2016; Robles, 2004). This implies that health policies on their own may not be enough in HTN/DM management in LMICs such as Ghana, as health is only one subsystem within the whole systems approach needed for this. Nevertheless, the policy process must anticipate these linkages and where possible, integrate them for effective NCD management to occur (Birkland, 2015). In Africa, research shows weak alignment of health and other policies for NCD management due to poor intersectoral coordination in policy development (Juma et al., 2018a; Ndinda et al., 2018).

Studies in Africa reveals key challenges in policy development. The policy development process is dependent on political will which has generally been low for NCDs in LMICs. Many LMICs have been slow in developing policies to control NCDs although there is evidence in LMICs of improvements in NCD control following support and commitment from able political leadership such as Meles Zenawi in Ethiopia (Balabanova et al., 2013) and the Royal Family in Thailand (Patcharanarumol et al., 2011). Studies have attributed the low commitment for NCDs to the overemphasis on communicable diseases (Aikins, 2007; Bosu, 2012; Mendis, 2010). This also has a link with financial resources for policy development as international donor agencies that account for a substantial investment in health in LMICs have focused on communicable diseases with very limited funding for NCDs (Nugent & Feigl, 2010; Ravishankar et al., 2009). Empirical studies in Africa confirm that a major challenge to NCD policy development is funding, with studies

indicating that resources for policy meetings and discussions were inadequate in Nigeria (Oladepo et al., 2018), Malawi (Mwagomba et al., 2018), Cameroon (Mapa-Tasou et al., 2018), and South Africa, Kenya and Zambia (Juma et al., 2018a, 2018b, Ndinda et al., 2018).

2.5.2 Scope of NCD services. Caring for people with NCDs such as HTN and DM requires the policy process to address health services, both preventive and curative. With people suffering from NCDs using more services, as for example, 80% of general practice consultations in England are attributed to people suffering from NCDs (Wilson, Buck, & Ham, 2005), considerable pressure lie on LMICs to provide the needed health services (PAHO 2002; Robles, 2004). The NCD policy process must therefore integrate health service mechanisms to address the needs of individuals at risk or already suffering from one or more NCDs. Of special relevance to NCD policy and management is the role of primary care services and health promotion (Beaglehole et al., 2008).

It is important to understand the role of different components of a health system in relation to NCDs, but particularly HTN and DM. Broadly these components are: the population and health promotion strategies that work to prevent the occurrence of the conditions and minimise severity; the primary care sector which seeks to identify these conditions early and then manage them from day-to-day in the community; and specialist services, usually hospital-based, that address assessment and treatment planning, and complications.

Population and health promotion strategies. Population and health promotion enable people to gain control over, and improve their health. The application of health promotion interventions in public health policies received more emphasis following the Ottawa Charter for Health Promotion, which put emphasis on societal change rather than individual responsibility, with the public playing an active role in setting priorities, strategic planning and implementation of programmes for better population health (WHO, 1998). Health promotion services target prevention, and support the population through education to focus on things that affect their wellbeing in their everyday lives. Among the settings that have been proven to be effective for health promotion, and which the policy process can focus on, are communities, health facilities, schools and work sites (Tones & Tilford, 2001). Typical examples include school-based health education programmes, with family engagement components that educate pupils on nutrition, physical activity and harmful substance use; and sports programmes that offer people avenues to stay physically active (Kaneda & Naik, 2016).

Effective health promotion emphasizes the social, economic and cultural determinants of health in a collaborative approach to avert illness before it occurs (Barr et al., 2003), stressing the need for intersectoral collaboration. According to WHO (2019a), health promotion requires policy makers across all government departments to make health a focus of all government policy, although studies have shown weak intersectoral collaboration in policy development in LMICs. Juma et al (2018b) for example found that in countries such as Kenya, Malawi and Cameroon, the inclusion of other sectors in the policy process was hampered by a lack of awareness by sectors about their potential contribution, inadequate resources, a lack of political will and complexities in sectorial coordination. Oladepo et al. (2018) found that although the inclusion of other sectors in the policy process in Nigeria was high during the development of the tobacco policies in 2015, intersectoral collaboration was low in the development of the NCD policies because of financial challenges. While the health sector cannot undertake this task alone, it can lead a broad policy dialogue and act as a collaborator in this endeavour in order to provide such services to the population.

Brazil is an example of a country that has pursued population and community NCD health promotion, with positive outcomes especially related to physical activity (Matsudo et al., 2002). Some Arab countries are also using a similar strategy to control obesity (Musaiger et al., 2011). In Africa, studies show that health promotion initiatives to reduce risk factors of NCDs need to improve as for example, physical activity at leisure times have been shown to be consistently low in all regions of the continent (Guthold et al., 2011). Other studies have found a failure of the policy process to arrest unhealthy diet, tobacco use and excessive alcohol intake, with a major challenge being the lack of data to inform effective service planning (Nyaaba et al., 2017).

Advocacy services have also been seen to be central to effective risk factor control at the population level (Yach et al., 2005). The WHO advocates for programmes of health education on making healthy choices, social mobilization, public outreach services, research, communication on NCD risks and advocacy for policy change that fit specific contexts (WHO, 2005). Ministries of Health have crucial roles to play to ensure that social marketing principles are adopted to stress healthy lifestyle choices. In many LMICs, advocacy services are provided by international agencies (Shilton et al., 2013). In Africa, Nyaaba et al (2017) in their analysis of country profiles found advocacy services to be low, a situation that is contributing to Africa's inability to achieve NCD goals and targets. The study revealed that although more funding is needed for advocacy services, institutions such as the African Union, West African Health Organization, African

Ministries of Health and Country Offices could still play pivotal roles in spearheading NCD policy interventions and advocacy issues in Africa.

Primary care and preventive services. The role of primary care in controlling communicable diseases in many countries has ensured that its relevance has been stressed in NCD management, with researchers advocating for a similar approach for NCDs (Maher, Ford, & Unwin, 2012; Beaglehole et al., 2011). The WHO expects member countries to strengthen primary care systems particularly for NCD management and has included this in its action plans (WHO, 2008) since this is the first point of contact with the health system and, when well structured, can help prevent many NCDs from degenerating into complicated conditions. In Africa, there is evidence of weak and fragmented primary care systems (Maher, Smeeth, & Sekajugo, 2010; Maher et al, 2012), a clear indication that the policy process has failed to recognize primary care as the focus of service delivery. For example, a recent study found that less than 5% of African countries have guidelines for NCD management through a primary care approach contrary to the WHO targets (Nyaaba et al., 2017). In Ghana, studies have shown that the primary care system through the Community-based Health Planning and Services (CHPS) has contributed greatly to reducing infectious diseases although its application to NCDs is yet to receive attention in research or policy development (Ampiah, 2017; Nyonator, Dovlo, & Sagoe, 2005).

The weak emphasis on primary care in LMICs is an indication of weak preventive services. Health services in many LMICs have been focused on treatment of NCDs and its complications rather than on early detection and prevention (Mendis, 2010). Azevedo and Alla, (2008) studied diabetes care in Kenya, Mali, Nigeria, Mozambique, South Africa and found that patients with risk factors for HTN/DM stood to benefit immensely from screening services. Apart from the main aim of early detection and prompt treatment to avoid complications of HTN/DM, evidence shows that systematic screening and testing have long term benefits such as cost savings (Driskell et al., 2014). In Africa, research indicates a large proportion of HTN/DM patients are not screened. A study that investigated whether diagnostic testing tools were available in some African countries revealed that in Mali, urine glucose strips were available in 54% of health facilities, Ketone testing strips in 43% and blood glucometers in 13% of health facilities while in Mozambique only 18%, 8% and 21% of health facilities had urine glucose strips, ketone testing strips, and blood glucose meters respectively (Beran, Yudkin, & De Courten, 2005). The challenge in Africa and Ghana is that the policy process has not integrated procedures for early detection into mainstream service delivery, as screening services are mainly opportunistic and are provided by philanthropic

organizations and individuals, resulting in people presenting to hospitals with complicated conditions (Azevedo & Alla, 2008; Hegazi et al., 2015).

Specialist and hospital services. In Ghana, as in the rest of Africa, poor risk factor control and dysfunctional primary care systems have contributed to a rise in complications of HTN/DM (Bosu, 2007). Emphasis has been put on treatment rather than prevention. However, treatment has not been particularly effective and has resulted in high rates of complications in many African countries. Rising cases of diabetic retinopathy, cataracts, strokes, open-angle glaucoma, neuropathy and foot ulcers as well as diabetic ketoacidosis have been reported in studies in Africa (Azevedo & Alla, 2008; Fasanmade & Dagogo-Jack, 2015). The main challenge in Africa is that these complications are not handled effectively. Mbugua et al. (2005) report that in Kenya, the main causes of diabetic ketoacidosis were infections and missed insulin injections and that almost 30% of patients died within two days after hospitalization. In general, lack of expertise, including few stroke and diabetic centres, as well as lack of modern equipment to handle these complications in many African countries contribute to this challenge (Fasanmade & Dagogo-Jack, 2015).

There are a number of barriers to effective treatment responses to NCDs in LMICs. For example, drug availability and affordability continue to undermine NCD control efforts. A study that analysed access to NCD medication in Nepal, Bangladesh, Malawi, Brazil, Sri Lanka and Pakistan, revealed low availability of CVD medications in the public sector; a situation which meant patients had to resort to the more expensive private suppliers or abandon treatment altogether (Mendis et al., 2007). Another study conducted across forty LMICs on the availability of acute and chronic medications showed that generic medications were significantly less available in the public sector (Cameron et al., 2011). In most African countries, poverty has been implicated in the unavailability of medicines for NCD treatment, especially in the rural areas, with many impoverished patients unable to afford the out-of-pocket cost of drugs (Fasanmade & Dagogo-Jack, 2015; Azevedo & Alla, 2008; Baldé et al., 2007). The policy process must therefore include cost effective interventions to enable patients have access to affordable NCD medications.

Another notable challenge to treatment services for NCD management is the use of herbal treatment alternatives. In many LMICs, although herbal treatment is very common, there are no clear policy guidelines as to how this must be used for controlling HTN/DM. In Ghana, studies have found that herbal treatment was utilized mostly by rural people and the urban poor (Aikins, 2005). Key challenges associated with the use of herbal treatment has been the fact that these

medications have very limited information on drug action, dosage and side effects (Chijioke & Makusidi, 2011). In most cases, patients who use these treatments develop complications before reporting to hospitals (Azevedo & Alla, 2008).

Studies have shown that compliance to treatment is key to managing NCDs (Cramer et al., 2008). Since NCDs have a longer duration and a complete cure is rarely achieved, the need to continue treatment is paramount. However, compliance is a major challenge in both HIC and LMICs. In Egypt, Hegazi et al. (2015) found that poor education services means that people consider DM as a natural part of life and are not keen to comply with treatment. This challenge has also been seen in other African countries such as Nigeria, Guinea and Mozambique (Azevedo & Alla, 2008; Fasanmade & Dagogo-Jack, 2015). A few studies in Ghana identifies compliance and herbal treatment as major issues in HTN/DM management (Aikins, 2006; 2007). In Ghana, the policy process must anticipate these challenges and detail interventions to address deficiencies in health services.

2.6 Decision making

According to Hill and Varone (2014), historically all writing on management and administration has provided guidance on how to make good decisions. This notion was pivotal in the minds of the early thinkers of public policy. At the heart of this has been the idea of problem-solving and the view that best solutions are required to effectively address a problem, hence the relevance of decision making in the policy process (Hill & Varone, 2014). As a central stage of the policy cycle, decision making has been described as making a choice among alternatives that have been identified and how they are likely to impact on the problem (Brewer & Leon, 1983). It has been explained as ‘the process by which governments adopt a particular course of action or non-action’ (Howlett & Ramesh, 1995 p.11).

Although these explanations are helpful in understanding decision making, they do not explain the complexities of the decision making stage of the policy process. For example, the above explanations are silent on desirability, and scope or direction of decision making. Decision making models have therefore been used to provide insights into these issues. There are two classical models of decision making: the rational model which is built on the premise that decision making is purposive if it is influenced by goals (Ham & Hill, 1993); and the incrementalist model which states that policy decisions can either maintain the status quo or create only minimal (incremental)

changes as this helps to avoid the uncertainties that come with new arrangements (Hill & Verone, 2014). These are the best known models of decision making (Howlett & Ramesh, 1995) with other models such as mixed scanning and the garbage can models derived from and containing elements of rational and incrementalist approaches (Ham & Hill, 1993; Howlett & Ramesh, 1995).

Decision making is dependent, to a large extent, on the early stages of the policy process where the problem has been identified and alternative choices to address the problem analysed. It therefore links up with the agenda setting and formulation stage of the process. In practice, decision making is concerned about making a choice among a number of alternative options identified at the policy formulation stage of the policy process.

2.6.1 Decision making tools. During the policy process, decision makers are confronted with choices and trade-offs between public demands and aspirations, and the technical and financial resources to address them. To handle some of the complexities and challenges, policy experts have suggested the use of decision making tools (Howlett, 2010). Simple tools include checklists, questionnaires, impact tables and other techniques for assisting expert judgment, whereas more complex (scenario techniques, risk assessment and multi-criteria analysis) and advanced tools (involving computer-based simulation techniques) require greater expertise and resources within the policy process. Dunn (2010) classified these into tools for forecasting and exploring future challenges (through the use of scenarios) and tools for the identification and recommendation of policy options (e.g. cost-benefit). The application of these tools in LMICs for the development of NCD policies is yet to receive attention in research. Moreover, fundamental to the use of such tools is the availability of good data, which has been found to be unreliable for NCD policy development in Africa (Nyaaba et al., 2017).

2.6.2 Determinants of NCD decision making in LMICs. In Africa, the few studies conducted on NCD policy development fail to provide details on the decision making stage as a distinct part of the policy process, providing no details on how this was done (Juma et al., 2018a, Mwagomba et al., 2018; Ndinda et al., 2018). Nevertheless, some empirical studies in Africa give insights into key influences on policy decision making. The role of champions and advocates at ministerial level was found to be instrumental particularly in tobacco and alcohol decisions in sub-Saharan Africa. For example, in Malawi, South Africa, Cameroon and Nigeria, Juma et al. (2018a) found that influential individuals built coalitions at ministerial levels to champion and expedite specific action on development of alcohol and tobacco legislations.

In addition, NGOs and CSOs influenced decision making in different ways. In Malawi, Juma et al (2018a) found that an NGO (Drug Fight Malawi) organized the first ever alcohol stakeholders meeting in the country and was influential in the decision to adopt an alcohol policy. Mwagomba et al (2018 p.105) reports that this initiative was supported by For Utvitling/Development (FORUT), a Norwegian international development organization.

The decision making process is highly influenced by availability of local and international data. South Africa's decision to use mandatory regulation approach to control salt in food was informed by international data from Portugal (Nainggolan, 2013) and Australia (Cobiac et al., 2010). Locally, available data indicated that 25-40% of average intake of sodium in South Africa came from bread. According to Hoffman and Lee (2013), local data indicated that the average intake of sodium per person was 1600 mg Na/day due to the high content of sodium in South African bread, with further research showing that a reduction to 350 mg Na/100g would decrease daily sodium consumption by 730 mg Na/day. Resultant analysis revealed that if this happened, 11% of CVD cases, approximately 7% of ischaemic heart disease and 8% of strokes could be prevented, a situation that could prevent about 7400 deaths from CVDs and 4300 strokes with its accompanying cost savings. This data informed the decision to adopt mandatory sodium regulation in South Africa (Hoffman & Lee, 2013).

However, the biggest influence on NCD decision making in LMICs are the international organizations. The influence of international organizations on NCD decision making in Africa stems from the fact that these organizations fund substantial portions of NCD budgets and the policy process, hence are able to influence decision making on key NCD priorities and interventions. In Uganda, Schwartz et al. (2014) found that although the Programme for the Prevention and Control of NCDs was established within the MOH to manage NCDs, it only receives 0.01% of the total budget of the MOH, approximately USD 27000. They also found that Government of Uganda provides only 8.3% of the NCD budget compared to 91.7% from external sources. Consequently, decision making on which interventions to pursue is largely influenced by these external financiers. In Nigeria, the Campaign for Tobacco Free Kids was influential in determining the direction of tobacco policies (Juma et al., 2018a). However, among international organizations, the WHO remains a strong force in decision making as it has global standing in health. The WHO offers technical advice on policy issues and participates in the policy process as a key stakeholder in many countries through regional or in-country representatives (Ndinda et al., 2018; Oladepo et al. 2018).

2.7 Policy Implementation

Implementation has been defined as the process by which governments put policies into effect (Howlett and Ramesh, 1995 p.11). Translating complex health programmes into practice (implementation) needs to take into account the nature of the health problem, the service context, the administrative mechanisms available to undertake the task, resources available, political circumstances and technological issues (Brownson et al., 2003; Sabatier & Mazmanian, 1980).

2.7.1 Approaches to implementation. There have been considerable changes over the years in the evolution of thinking on policy implementation. This has included consideration of top-down, bottom-up and mixed approaches, and the exploration of implementation science techniques.

Top-down approach. The top-down approach to implementation is characterized by the centralization of policy making with direction for implementation made from higher to lower levels (Sabatier, 1986). A strength of this approach is its focus on stated goals, central allocation of resources, and clear directives to implementers regarding how goals are to be achieved. This level of control limits the extent to which local context affects implementation and reduces the flexibility, on the one hand, to improve or, on the other hand, to undermine details of the policy (Matland, 1995). Another strength of this approach is that it limits the number of officials involved, thereby enhancing accountability and evaluation (Sabatier & Mazmanian, 1980).

There is evidence from Ghana showing the effectiveness of top-down implementation of HTN/DM programmes. Amoah et al. (2000) reports on a top-down approach to diabetes care and education that involved high-level international collaboration between two medical schools, the health industry and health care institutions in Ghana. As part of the programme, diabetes teams consisting of physicians, nurses and health educators were trained in two teaching hospitals. These teams, in turn, trained other physicians, diet therapy nurses, dietitians and nurse educators at the regional and district levels to offer diabetes care and education to patients. The programme was successful as trained health workers became available in regional hospitals and in a number of district hospitals. The top-down approach ensured that resources were well-distributed locally, with patient travel minimised, and that patients received a high-quality consistent service.

This top-down approach has however, attracted criticism. It has been criticized for seeing the framers of policies as key actors when in fact it may be more reasonable to see local officials and those affected by the policy as better able to determine the detail of the policy (Matland, 1995). Critics have suggested that complex policy ‘may only emerge through an elaborate process that is

likely to include those stages that are conventionally described as implementation' (Hill, 2014, p.210). These criticisms and others led to the emergence of the bottom-up approach to implementation (Hjern, 1982).

The bottom-up approach. The bottom-up approach is based on the involvement of public and private actors in implementation and “examines their goals, strategies and the network of contacts they have built and ... works its way upwards to discover the goals, strategies and contacts” of those who designed, financed and executed the programmes (Howlett and Ramesh., 1995p.157). Elmore (1981 p.1) calls this ‘backward mapping’ as this approach takes into account the likely barriers to implementation and seeks ways of influencing change at lower community or service levels that might ensure the achievement of policy goals. Bottom-up implementation can be represented by enhanced roles for community or service level decision makers, but can also include a community engagement dimension in policy implementation. Thus the main thrust of this approach is the empowerment of local communities to make decisions regarding implementation of policies.

Bottom-up implementation can be helpful in NCD policy because of the importance of community involvement to the success of service change. Research shows that the success or failure of much health policy depends to a large extent, on the commitment, experience, and knowledge of local actors who are directly involved in carrying out health programmes or receiving services (Brownson et al., 2003). The bottom-up approach has been particularly successful in NCD management. The Family Education Diabetes Series (FEDS) project typifies how researchers and a Native American community in the mid-western United States collaborated to go beyond conventional top-down approaches to showcase the effectiveness of bottom-up approaches to diabetes care (Mendenhall et al., 2010). The FEDS was a programme designed for diabetes care that utilized community-based approaches, with community leaders making key decisions on the creation of the strong partnerships that were central to the success of the programme. Community leaders engaged with providers and clinical researchers on the importance of building trust among the Native American population. This ensured that providers ultimately learned and understood indigenous culture, mannerisms and belief systems while community members gained an orientation to western medicine as well as providers’ perspectives on service delivery. The result was a much-improved diabetes care for the local population.

Although bottom-up implementation has been widely adopted in advanced countries, there is evidence that some LMICs are gradually making the transition to more bottom-up implementation

of NCD programmes. In Pakistan for example, the Control of Blood Pressure and Risk Attenuation (COBRA) study (Jafar et al., 2011) demonstrated the usefulness of bottom-up approaches. Community decision makers opted for increased training for community health education workers and GPs as well as household screening in community clusters. The approach not only showed the effectiveness of bottom-up approaches to HTN control but also demonstrated that such programmes can be cost effective. In Nigeria, Adeyemo et al. (2013) found that bottom-up community-based nurse-led programmes improved medication adherence as both community leaders and members were drawn into the ‘ownership’ of HTN programmes. Considering the impact of the bottom-up approaches to effective NCD management, there have been calls to make such programmes an integral focus of health services in NCD policies (Robles, 2004; Mashru & Lant, 1997; Morenoff et al., 2007).

Although community-led bottom-up programmes have been seen to be key in NCD management, these have failed to receive enough attention in global policy discussions and frameworks. For example, evidence from studies conducted in LMICs reveals the effect of socio-cultural considerations in mediating lifestyle and health behaviours. After a critical review of NCD management in LMICs, Aikins et al. (2012) stressed the need for the introduction of cost-effective interventions that reflects the peculiar needs, decisions and health systems of LMICs with emphasis on the social participation of community members. In particular, they stress the role of the lay perspective in shaping understanding of NCD interventions and programmes in LMICs, adding that this perspective has often been overlooked at the global level. It is worth noting, therefore, that there is a likelihood that global NCD and public health discussions will perceive health beliefs in the Western part of the world as rational and those in LMICs as irrational or faulty (especially the rural poor). The challenge is that this perception, which influences the design of global interventions, may not be universally successful in changing behaviours in LMICs as they are unlikely to fit the NCD contexts. Thus in designing NCD behavioural interventions for LMICs, there is a need to understand the role of lay influences such as community groups, schools and the mass media since these are crucial in understanding health risk, prevention and intervention strategies in these countries (Aikins et al., 2012).

Integrated implementation approaches. Implementation experts believe that following an exclusively top-down or bottom-up approach to implementation may not always lead to the best outcomes (Hill & Varone, 2014). There are challenges inherent in each approach. For example, although the bottom up approach may have benefits in particular circumstances, it requires the

cooperation of communities and individuals to be successful. According to Sabatier (1986), the adoption of an approach will depend on the policy situation, with the top-down approach being appropriate where;

- There is a dominant public programme in the policy area under consideration
- The analyst is solely interested in the effectiveness of a programme
- A single public agency clearly dominates the field
- There is a dominant piece of legislation structuring the situation

On the other hand, the bottom-up approach may be more useful when;

- There is no dominant piece of legislation but rather large numbers of actors without power dependency.
- There are likely to be variable local situations.
- Policy areas involve a large number of public and private actors

To maximise the usefulness of these approaches, implementation experts recommend an integrated approach, a mixed system that includes utilization of both the top-down and bottom-up approaches, insisting that these methods may offer desirable triangulations (Hill & Varone, 2014). The purpose of integrating these approaches is to tap into the strengths of each, while counteracting the drawbacks of using each approach independently.

A well-known historical example of the use of an integrated approach is the North Karelia Project in Finland, where the top-down and bottom-up approaches were integrated to manage HTN in the community (McAlister et al., 1982). The project was based on the premise that a reorganization of preventive HTN services was more desirable than the continued reliance on treatment services. This programme was designed in such a way that a top-down approach ensured that routine screening was integrated into the public health system with public health nurses trained to assess and refer patients and undertake long-term surveillance of patients with high BP through regular follow ups. In the meantime, using a more bottom-up approach, media and flexible community organisations were used to educate people on the need to control BP and to cooperate with the public health nurses.

There are examples of the success of this approach in LMICs. In Vietnam, the top-down and bottom up policy designs were used together to implement HTN programmes (Nguyen et al., 2011). Regarding the top-down approach, health authorities supervise screening activities to ensure clinically appropriate services and understand the community HTN situation. During implementation, local leaders chair information, education and communication campaigns and get access to hypertensive medication. Health care personnel build local hypertensive teams using established guidelines and manuals, and stock essential drugs. The Vietnam National Health Institute (VNHI) doctors then train local teams on prescription of drugs and health education, and help upgrade cardiac care services in the districts and provinces. The bottom-up approach involves broadcasting repeated messages to improve local awareness and to urge a positive response to screening and treatment activities. The local hypertensive teams then tailor the programme to respond to emerging community demands, reducing the role of the VNHI until the local staff can operate the programme themselves. Community members have witnessed changes in their blood pressure and improved treatment compliance.

While research shows that the application of integrated implementation approaches are useful in both HICs and LMICs, the success of this approach will depend on local considerations. With specific regard to the implementation of NCD policy, the adoption of the integrated approach may require more emphasis on health literacy (WHO, 2013). Effective management of HTN/DM requires people to make good personal decisions, implying that they have the capacity to acquire, process and understand basic health information about their conditions to enable them make such decisions. This means that in an integrated approach, both the state actors and community actors must have a good understanding and information about desired policies and programmes in order for effective implementation to take place. This is a major public health issue for LMICs as even in more developed countries, such as New Zealand, lack of health literacy has been implicated in poor nutrition decisions (Witt & Barnett, 2012). Health literacy is complex, but is central to NCD management, with studies confirming it as a priority area particularly in NCD policy development and implementation (Poureslami et al., 2017). In Africa, health literacy is a major challenge as studies have shown that the capacity to acquire, process and understand basic information on HTN/DM and other chronic diseases has been inadequate among both health workers and community members (Hegazi et al., 2015; Fasanmade & Dagogo-Jack, 2015). This suggests that some priority should be given in policy implementation to ensuring that a foundation for health literacy is part of community programmes.

Implementation science approach: A paradigm shift. Some of the principles of evidence-based practice (EBP) have been applied to the science of implementation in health and other disciplines (Halle, Metz, & Martinez-Beck, 2013). This involves the use of randomized controlled trials in community contexts to demonstrate, for example, the effectiveness of programme dissemination to ensure that implementation has occurred as planned, prior to outcome assessment. Thus, implementation science represents a paradigm shift from the pragmatic, even hopeful, approaches adopted for traditional programming and has been explained as the scientific investigation of factors that influence effective implementation (Halle et al., 2013). The implementation science process typically involves training and monitoring for fidelity (implementing the programme model as intended) to the programme model, provision of support services, data-based decision making, on-going coaching for practice improvement, and systemic policies that underpin implementation sustainability (Sung et al., 2003).

Although the field of implementation science is relatively new in the literature, there is already some level of consensus on the core themes of successful implementation programmes. For example, after a comprehensive literature review of existing studies, Fixsen et al. (2009) identified variables that lead to quality implementation, positive programme outcomes and sustainability, insisting that the literature agrees that exploration for suitable programme models, installation, initial implementation, full implementation, innovation and sustainability are key stages. They add, however, that these activities are non-linear and may therefore be iterative, allowing for feedback for programme improvement, including strategic learning at the individual or system levels in order to encourage policy changes that better support effective implementation over time. Halle et al. (2013) lists seven key areas that provides a foundational understanding of implementation science: assessment of readiness and capacity; structure of the implementation process; engagement and buy-in; programme installation; outcome evaluation and fidelity monitoring; feedback and quality improvement; and innovation and adaptation.

The challenges of implementation science include developing a new theoretical base and recognising the non-suitability of some implementation frameworks for particular circumstances (Halle et al., 2013). A further problem has been that programmes have not always been implemented in communities in accordance with the original evidence base used to design the programme and may not have the same outcomes as expected from research or pilot study trials (Durlak & DuPre, 2008). If a programme has not been implemented as intended and does not produce the desired results, this situation is known as Type III error, an error resulting from a

programme whose outcomes have been evaluated from wrongful or unintended implementation (Halle et al., 2013).

Implementation science techniques have been employed mainly in advanced countries. For example, implementation science models for diabetes management and education have been incorporated into US national recommendations such as the American Diabetes Association Standards of Care and Society of Hospital Medicine Best Practices (Rodriguez et al., 2014). Empirical studies in advanced settings have shown positive application of implementation science methods in NCD management. For example, in a non-randomized pilot study in the US, Magee et al. (2014) provided evidence of a successful implementation framework for diabetes education.

In Africa, the application of implementation science for NCD programmes is rare. However, the few studies conducted on NCD policy development and implementation show that techniques of this approach may be needed as implementation of NCD policies continue to be a problem. For example, in Cameroon, Mapa-Tassou et al. (2018) found that although tobacco policies had been developed, implementation was only partially done. Implementation of bans on tobacco advertisement, promotion and sponsorship were not effective. The creation of anti-smoking clubs was also not effective. In Kenya, South Africa, Cameroon, Nigeria and Malawi, Juma et al. (2018b) found that although NCD policies provide for the involvement of multiple sectors in NCD policy implementation, this did not take place, leading to challenges in application of policies. Oladepo et al. (2018) also found in Nigeria that there are serious challenges in the implementation of the tobacco legislation in Nigeria. It is possible that modern implementation science techniques could contribute to effective implementation of NCD policies in Africa. However, there is limited research on implementation science in general, and on NCD policy implementation in particular. In Ghana, there are no empirical studies on NCD policy development and implementation, hence the application of implementation science methods remains unexplored.

As in other aspects of the policy process, availability of data and financial resources continue to obstruct implementation of NCD policies in Africa (Nyaaba et al., 2017; Ndinda et al., 2018). Additionally, competing interests, strong industry influence and poor intersectoral support have obstructed implementation of salt and tobacco legislation in countries such as South Africa, Nigeria and Cameroon (Oladepo et al., 2018; Ndinda et al., 2018; Mapa-Tasou et al., 2018). Another challenge in NCD policy implementation is human resources for health. Studies have identified a shortage of skilled personnel such as diabetes educators, podiatrists, cytologists, and physicians in most LMICs for delivery of key health services and programmes (Fasanmade &

Dagogo-Jack, 2015; Hegazi et al., 2015). The WHO, in a bid to mitigate the impact of the human resource challenge has encouraged LMICs to resort to task shifting and delegate responsibilities to less qualified staff where necessary. Even though this is possible especially in uncomplicated cases as was the case in Cameroon (Fezeu et al., 2010), there is limited evidence that less qualified staff can manage complex NCD cases effectively, as evidence show that the provision of specialized health services is essential for effective NCD management (Greenfield et al., 1995). In Africa and Ghana, the generally inadequate levels of health personnel has been compounded by unavailability of specialized HTN/DM services provided by physiotherapists, podiatrists, and diabetes educators (Aikins et al., 2010; Fasanmade & Dagogo-Jack, 2015).

2.8 Policy Monitoring and Evaluation

Policy monitoring and evaluation are the final aspects of the policy cycle, after which the whole cycle may begin again. Policy monitoring has been defined by Cloete (2009 p.4) as “the regular, systematic collection of data on the basis of specified indicators to determine levels of progress and achievement of goals and objectives”. Thus monitoring ensures that policy implementers are focused on the purpose for which a policy was developed. Usually, monitoring has been integral to the implementation of policy although it has over the years become linked to the concept of evaluation, which includes a systematic assessment of the outcomes of policy programmes (Cloete, 2009). In most cases, policy evaluation involves a comprehensive assessment of the resources (human, financial, material etc.) and institutional processes used to convert these resources into policy outputs, and the measurement of actual outcomes against envisaged goals.

For NCD policy monitoring, the WHO recommends systematic surveillance activities as the foundation of public health policy making and action (WHO, 2003a). Surveillance involves the continuous and systematic collection, analysis, evaluation and dissemination of epidemiologic data for planning, implementation, and assessment of disease control. Public health surveillance is crucial for managing NCDs through the provision of data for health services planning, determination of priority areas for action and for monitoring the effectiveness of disease prevention activities (WHO, 2003a). For effective surveillance of HTN/DM programmes, the WHO, while recognizing that this may not be possible for all countries, recommends a dedicated unit for this purpose in the Ministries of Health of member countries nevertheless (WHO, 2003a).

To control the burden of HTN/DM, surveillance activities should be centred on risk factors rather than diseases to ensure that primary prevention remains the focus (WHO, 2008; Nyaaba et al., 2017). The WHO encourages member states to use surveys such as the WHO STEPS (NCD risk factor survey) and the world tobacco surveys to track and monitor risk factors (WHO, 2003b). In most African countries, however, surveillance activities are inadequate as there is limited local data to track risk factors to inform policies and programmes (Nyaaba et al., 2017). Consequently, most surveys for NCD policy action have been conducted under the auspices of international bodies such as the WHO or CDC due to a lack of local data. Juma et al. (2018a) for example, found that in many African countries, since local data to track risk factors to inform policy were lacking, the WHO's Global Youth Tobacco Surveys and the Global Adult Tobacco Surveys were used in tobacco legislation. In another study, Juma et al. (2018b) studied NCD prevention policies in Kenya, South Africa, Nigeria, Malawi and South Africa and concluded that in all these countries, local data for monitoring impacts is inadequate. In Ghana, the STEPS Survey of 2006 provided baseline figures that were used to track the prevalence of obesogenic risk factors for the development of the NCD policy (GHS, 2006).

A few empirical studies have been conducted in Africa to evaluate the impact of NCD policies. Draper et al. (2014) evaluated the Adult Chronic Disease Management Policy developed by the Provincial government of the Western Cape in South Africa and concluded that the goals of the policy are yet to be achieved due to gaps in implementation. In a comprehensive evaluative study of NCD targets in Africa, Nyaaba et al. (2017) found that all regions in Africa were off track in the achievement of NCD indicators specified in the WHO Global Action Plan 2013-2020. In Ghana, however, studies that evaluate the impact of NCD policies empirically are rare, although a few reviews on programmatic response to NCDs have been done (Aikins, 2007; Bosu, 2012). These reviews concluded that effort has been made through the establishment of a few programmes particularly the Regenerative Health and Nutrition Programme and the Non-communicable Disease Control Programme, although financial constraints obstruct the effectiveness of these programmes.

2.9 Critical Overview

This review has provided useful insights into the policy process in LMICs on NCDs and highlighted some of the limitations of policy research in sub-Saharan Africa. Key issues and challenges relating to the various stages of the policy process as they relate to NCDs in general and HTN and DM in particular have been discussed particularly in the context of LMICs and

Africa. At the agenda setting stage of the process, although there are a few examples in Africa of political commitment to take up NCDs as was the case in South Africa (Ndinda et al., 2018) and Ethiopia (Balabanova et al., 2011), efforts to get NCDs on the agenda have come from international organizations and donor agencies. Although international involvement and support is needed, the negative aspect of this support is that national policy actors who may have a better understanding of the socio-cultural composition of their populations and local contextual factors may not be able to exercise influence on which particular NCD issues get on to the agenda or how the agenda is shaped due to the fact that the policy process is often largely funded by these external partners. In addition, political considerations in the agenda setting process have economic undertones. For example, although NGOs, media houses and other social actors have a crucial role in the agenda setting process, resources to help ensure NCD issues reach the attention of policy makers are not well developed. In Africa, other problems affecting the agenda setting process are the unavailability of data on NCDs, cultural issues and gaps in routine health services (Maysamie et al., 2010; Omar et al. 2010). Studies on the NCD policy process in Africa often combine the agenda setting stage with the policy formulation stage of the policy process (Juma et al., 2018a; Hoffman & Lee, 2013).

Policy development itself also appears to be spearheaded to a large extent by NGOs and CSOs in some countries in Africa although the roles of Ministries/Departments of Health officially remained paramount (Mwagomba et al., 2018; Ndinda et al., 2018). The few studies conducted in Africa suggest that stakeholder engagement was of high priority in policy development. However, the actual contribution of each stakeholder to the process is unknown due to a lack of process documentation (Juma et al., 2018b). The policy development stage of the process has been negatively affected by the unavailability of local data, especially during the situation analysis stage where cause-specific mortality and morbidity data are needed to structure and understand the problem (Mathers et al., 2005; Nyaaba et al., 2017). Many countries have therefore relied on global adult and youth surveys to inform policy development. With regards to NCD health services, the evidence supports policies and interventions grounded on primary care. The primary care systems in many LMICs are, however, defective and fragmented (Maher et al., 2012), making it difficult to meet the NCD needs of populations. International bodies, NGOs and CSOs have largely been responsible for health promotion and advocacy services in LMICs. In addition, the policy process has yet to integrate herbal treatments into mainstream health services although many people depend on these to treat HTN and DM.

There is little emphasis on decision making as a distinct stage of the policy process for NCDs in LMICs. It is therefore very difficult to find in Africa and other LMICs a systematic approach to decision making that one might find in developed countries. This notwithstanding, the few studies conducted on NCD policy development in Africa indicate key aspects of decision making, including the powerful role of international development agencies (Mwagomba et al., 2018), problems with availability of data (Hoffman & Lee, 2013) and the contribution of NGOs/CSOs (Schwartz et al., 2017). This suggests that there are many ‘default’ decisions based on guidance from intergovernmental agencies such as WHO, rather than local sources, and that decision making has been largely subsumed into the policy development process. It is likely, therefore, that any future research on policy decision making in LMICs will take this into account.

The literature details a gravitation towards bottom-up decision making and implementation approaches for HTN/DM programmes particularly in HIC (Mendenhall et al., 2010) although some LMICs are gradually designing policies to be implemented in this manner (Jafar et al., 2011). The choice of an implementation approach may, however, be dependent on the goals of the policy process. Where decision making on service design is left to local and community actors, local populations own NCD initiatives and support implementation effort. However, this is not particularly helpful where consistency of programmes are sought, particularly where technical standards are required, throughout a country. Top-down approaches may be useful for example, in some clinical practice areas to maintain standards and protocols across a country thereby making monitoring and evaluation less cumbersome. The evolution of thinking on implementation is, however, moving towards the application of implementation science procedures although its application is yet to receive attention in research in LMICs. Studies have shown that the main challenges to implementation of NCD policies in Africa include unavailability of data, lack of resources, and competing interests among different stakeholder groups (Oladebo et al., 2018; Ndinda et al., 2018; Mapa-tassou et al., 2018).

The literature identifies surveillance activities as pivotal to NCD policy monitoring. Effective surveillance, however, for disease prevention in the whole population must be focused on risk factors rather than diseases. Although data availability is central to surveillance activities, this has been a major challenge in many LMICs. Evaluation studies on NCDs are rare in Africa. This is probably because most countries are yet to develop NCD policies or that these policies have only been developed recently, indicating that it will take some time for policies to be evaluated. However, the few studies conducted did not reveal encouraging outcomes. Nyaaba et al. (2017) in

a comprehensive evaluative study found that all regions of Africa are off-track in the attainment of WHO targets in the 2013-2020 Global Action Plan. Studies on the policy process in Africa have not concentrated on monitoring and evaluation as a distinct stage of the process as this has been part of the implementation stage.

There is limited research on the NCD policy process in Ghana and Africa. A few reviews written on NCD policy in Ghana have examined the content of NCD policies and their appropriateness (Aikins, 2007; Bosu, 2012), with no research on the policy process. This is surprising given the fact that the policy process is as crucial as the content of policies and goes a long way to determine health programme choice and implementation effort (Robles, 2004). Of particular importance to NCD management is the agenda setting process, analysis of the current NCD situation and how this is conducted, which stakeholders are involved and what roles they play in the development of the policy, the extent to which policies are integrated vertically and horizontally etc. (WHO, 2018b). Despite the relevance of these issues to NCD management, only a few studies have been conducted on the NCD policy process in Africa, notably in South Africa, Nigeria, Malawi and Cameroon (Mwagomba et al., 2018; Juma et al., 2018a, 2018b; Ndinda et al., 2018). In Ghana, the few studies on the NCD policy process have focused on mental health (Agyepong and Adjei, 2008; Omar et al., 2010; Bird et al., 2010) which is managed with a separate policy.

The implementation literature indicates a growing emphasis on bottom-up implementation approaches that empowers local communities to make decisions on implementation of HTN/DM programmes (Robles, 2004; Mendanhall et al., 2010; Jafar et al., 2011). However, community involvement and decision making on NCD policy implementation has not received attention in Ghana. Although Amoah (2000) studied implementation of a diabetes programme, this was only centred on national implementation in a top-down approach with no insights on the role of community members in the programme. There have been no studies on how community members perceive NCD policies and services in Ghana.

The review of literature shows that availability of data is central to the entire policy process. In Africa, inadequate data has affected policy formulation, implementation, decision making and surveillance activities (Nyaaba et al., 2017; Juma et al., 2018a; Ndinda et al. 2018). Although studies have indicated inadequate data in the policy process as a challenge, there is a dearth of research in Ghana and other LMICs on the evidential underpinnings of NCD policies, and how this influences the whole policy process. A detailed analysis of this is therefore worth examining in Ghana.

A key aspect of NCD management is how the policy process is used to respond to the needs of those at risk of HTN/DM and those already suffering from these conditions and other NCDs. Since NCD research is a new area of research in Ghana and many African countries, the extent to which the policy process details and implements interventions on for example, primary care services and health promotion and advocacy programmes to manage risk factors and diseases has received little attention in research. An examination of health services within the context of the policy process will help identify areas of policy strengthening in the management of HTN/DM in Ghana.

Within the health system, several stakeholders (advocacy groups, patient organizations, payers etc.) play important roles in the management of HTN/DM and other NCDs. The extent to which these stakeholders understand and respond to the NCD challenge has important consequences for managing these diseases. However, research in Ghana has yet to address stakeholder understanding and roles in HTN/DM management.

2.10 Conclusion

This chapter examined key issues in the policy process for NCD control and the research related to this. The chapter highlighted relevant issues in NCD agenda setting, policy development, implementation, decision making, and monitoring and evaluation. With the policy process being made up of interrelated stages, information or feedback must be sent on the outcomes of policies for improvements to be made. This may require bringing additional or alternative inputs following evaluation of implemented policies after which the whole process begins again. Figure 2.2 shows that the process is a never-ending cycle.

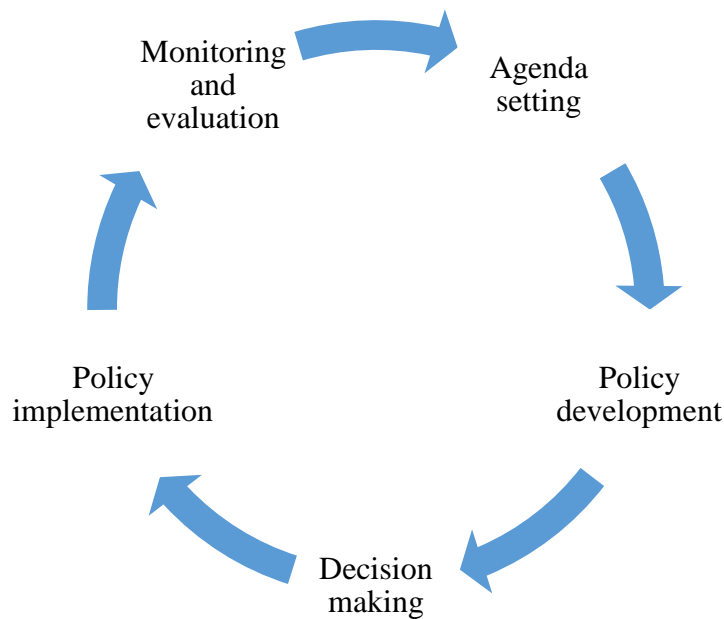


Figure 2.2 Stages of the policy process as a cycle

Source: Adapted from Howlett & Ramesh, 1995

The review revealed that most of the research on the policy process pertains to HICs, with little research on the policy process in Africa and especially Ghana, where the NCD policy process is yet to receive attention in research. There are no studies there on NCD policy development and implementation, or on the use of evidence in the development of policies. The review also revealed that empirically, some of the stages in the policy process are subsumed under other stages of the process. For example, agenda setting and decision making appear to be absorbed in policy formulation. Thus in practice, the policy process does not conform to absolute linearity as put forward by applied problem-solving methods.

From the themes and gaps identified in this review and from the particular Ghanaian study context, a number of specific research objectives relating to NCDs can be developed. These are:

- To assess how policies for controlling hypertension and diabetes are developed and implemented in Ghana.
- To assess the way in which evidence is incorporated in hypertension and diabetes policy development and implementation.
- To examine how stakeholders understand and respond to the problem of hypertension and diabetes in Ghana.
- To identify the factors hindering the management of hypertension and diabetes in Ghana

The methods used to address these objectives are detailed in the next chapter.

CHAPTER THREE

Methodology

This chapter describes the overall approach and methods of this research. It includes the research philosophy, study design, methods used for data collection and analysis, ethics and criteria for case study rigor. The chapter concludes with a summary of the methodology for the study.

3.1 Researcher's Philosophical Position

Ontology, the starting point of all research (Grix, 2002), has been defined as 'the study of being' (Crotty, 1998 p.10) and denotes our belief systems and how we see the world. According to Guba and Lincoln (1989), one ontological position should not be seen as superior to another as this is a mere representation of belief systems that can be neither proved nor disproved. Thus, the ontological position presented here reflects the researcher's beliefs on social reality and the phenomena that have influenced how this research has been conducted. Cresswell (2013) states that although philosophical aspects of research remain hidden, thesis writers should acknowledge their research philosophies and show how their belief systems have shaped their choice of philosophy.

In traditional Ghanaian societies, there is general respect for educated people who work in 'offices'. As this researcher was growing up, he was encouraged to believe that educated people were never wrong. The opinions of the educated people were seen as truth and were never questioned, with lawyers, doctors, accountants, and engineers the most highly regarded. Administrators, managers and other professionals who dressed formally and worked in offices fell into this category as well. Later, a university education revealed to the researcher that this was not entirely true. For example, classmates from some of these professional groups were sometimes wrong in giving answers to questions, and there were instances when the researcher performed better in certain courses than did some of these professionals. What was most revealing was that in several instances, two professionals in the same field presented contrasting views on a particular phenomenon and argued their positions vehemently. These situations and experiences influenced the researcher to lean towards the notion of multiple realities and complexity of views (Creswell, 2013) instead of the notion of objective and absolute truth of knowledge when dealing with the behaviour of human beings (Phillips & Burbules, 2000). Consequently, this study is influenced by

the notion of relativist ontology, which emphasizes deeper perspectives and holds that reality consists of local and specific constructed realities (Annells, 1996). Hence, researchers and respondents may have different understanding of realities. It is this ontological position that underpins this research into understanding the management of HTN and DM in Ghana.

As in other parts of the world, the notion of professionals having knowledge and experience still prevails in Ghana, especially in the health system. Policy makers and other experts draft policies and design programmes which doctors and other health professionals are expected to implement. Doctors are supported by other health professionals to treat patients suffering from HTN/DM. Thus, the perceived identity of the health professional as the one having the knowledge and training to manage the condition of the patient is still paramount in Ghana. In managing HTN/DM, health professionals draw on their knowledge, experience and research evidence. This is a crucial ingredient in managing HTN/DM. However, incorporating stakeholders' (e.g. patients, policy makers) own constructions of what better management of HTN/DM entails will be equally useful. Hence, this study incorporates the views of different stakeholders on how these conditions can be managed. This idea, coupled with the choice of a relativist ontology, informs the conduct of this study within the constructivist epistemology.

Epistemology has been explained as what is required to have rational beliefs and knowledge and, in research terms, how people know what they know (Guba & Lincoln, 1989). A constructivist epistemology states that people seek knowledge and understanding of reality through the development of subjective experiences. These experiences, varied and multiple, lead the researcher to seek complex views rather than confining meanings to a few category of ideas (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Researchers, therefore, use the process of interaction, with the objective of relying on participants' views of the phenomenon under investigation. Therefore, the constructivist epistemology posits that participants and researchers interact in the research process with their perspectives, insights and knowledge and come out of the research process having been influenced to a new knowledge by the experience of that interaction. This study is therefore based on a constructivist perspective and is influenced by the interaction of the researcher and stakeholders in the management of HTN/DM to produce an empirical insight into the prevention and control of these diseases.

3.2 Study Design

This research uses a case study design to examine the management of HTN/DM in Ghana. Yin (2009 p.18) states that a case study is “an empirical inquiry that investigates a contemporary phenomenon in-depth and within its real-life contexts, especially when the boundaries between the phenomenon and context are not clearly evident”. According to this definition, key attributes of case study research include contemporary phenomenon, boundedness, context, and detail of the study. Considering this definition in the context of this study, it can be argued that the management of HTN/DM is a contemporary issue worldwide, especially in LMICs because of the contribution to the burden of disease and the attention these conditions have attracted in the literature in recent times (United Nations, 2010; Stevens et al., 2008; Yusuf et al., 2001; Naik & Kaneda, 2015; Marquez & Farrington, 2013; WHO, 2014; Omran, 2005; WHO, 2016; UN, 2011).

Regarding the boundedness of a case, the three key attributes are location, activity, and time (Merriam, 1998). This study can be regarded as taking place in ‘a bounded system’ as it was conducted in Ghana within a four-month period, focusing specifically on the management and control of HTN and DM. In addition, it has been argued that for better understanding (of case study research) and to be able to measure whether the results and conclusions could be applicable to other contexts, a case must be studied in context (Creswell, 2013). This helps to place research in a wider perspective by examining the milieu within which a study is conducted. Thus, to put this case in perspective by examining the context, an overview of the Ghana health sector, including specific details and characteristics of where data were collected has been provided (Sections 1.2 and 3.4.1). Another important feature of case study research is that it must have multiple sources of data to give detail and credence to conclusions drawn (Yin, 2009). Stake (2013) affirms that case study researchers use a variety of data collection procedures to collect information over a period of time. To this end, data were collected using multiple sources including interviews, focus groups, and documents.

The suitability of case study design for this research was informed by a number of factors. First, case study design is applicable because the research seeks to investigate ‘what is happening’ with regards to the management of HTN/DM in Ghana. Yin (2009) avers that the case study design is suitable when a study seeks to explain what is happening or has happened with regards to a particular phenomenon. Second, the study aims to offer a deeper understanding of HTN/DM management in Ghana. A case study involves selecting a particular phenomenon (or case) and

studying it in detail (Stake, 2013). Therefore, the case study strategy offered a way to gain an in-depth understanding of HTN/DM policy processes in Ghana. The third reason is the relevance of context to the study. A case study design is appropriate where contextual conditions are relevant to the phenomenon under study, and where the boundaries are not clearly delineated between the phenomenon and context (Yin, 2009). In this study, the management of HTN/DM is shaped by the context in which policies are developed and implemented (including international and community influences); hence, the choice of a case study design.

Furthermore, the case study design was deemed appropriate for this study after alternative designs considered proved unsuitable given the purpose and objectives of the study. For example, Walt et al. (2008) states that case studies “are to be distinguished from other research designs such as controlled comparisons, formal modelling, quantitative analyses and randomized-controlled experiments” (p.312). Since the study aimed to obtain an in-depth understanding of the policy and management of HTN/DM, these alternative designs were deemed unsuitable. Although other designs (such as ethnography, narrative design, grounded theory, and phenomenological approaches) offer the opportunity to obtain a detailed understanding of a phenomenon, these approaches proved unsuitable as well. For example, although ethnography offers deeper insights into a phenomenon, it focuses on understanding the cultural underpinnings of a phenomenon and requires the investigator to be part of a community of interest for a long period of time (Creswell, 2013). A narrative design requires the researcher to put together a sequence of events from one or two individuals to form a coherent story and hence was not appropriate in this situation (Creswell & Clark, 2007). A grounded theory approach was deemed unsuitable since it focuses on providing an explanation or theory behind a particular phenomenon (Creswell, 2013). Finally, a phenomenological design was also deemed unsuitable because of its focus on the researcher collecting data from persons who have experienced a phenomenon (usually an object of human experience such as depression, isolation, or grief) and develop a description of the essence of the experience for all the individuals (Creswell et al., 2007).

Health policy experts state that case studies are the most frequent methods used in policy studies whether or not researchers explicitly identify them as such (Gilson & Raphaely, 2008; Walt et al., 2008). For example, policy formulation has been conceived as a “highly diffuse, and complex process which varies by case [...] as nuances in particular instances can be grasped only through empirical case studies” (Howlett and Ramesh., 1995, p. 123). In short, case study research is considered crucial for policy studies.

Additionally, as shown in section 2.3, other policy studies on NCD policy development and implementation have used a case study approach to offer deeper insights into the policy process. For example, Ndinda et al. (2018) employed this approach to conduct an in-depth study on NCD policies and risk factors in South Africa through 44 key informant interviews and documentary analysis. Similarly, Mapa-tassou et al. (2018) adopted a case study design (and conducted 38 stakeholder interviews and reviewed 19 policy documents) to understand tobacco control and prevention policies in Cameroon. Other studies utilizing this design for NCD policy research in Africa to good effect include Oladepo et al. (2018), Mwagomba et al. (2018), and Juma et al. (2018).

Case studies, like other designs, have weaknesses. A common criticism of this design is the non-generalizability of findings (Labaree, 2013). However, it has been stated that findings from case studies can be generalized through analytic generalization, where the logic is not based on a sampled population, but to a phenomenon with wider applicability than the specific case under study (Yin, 2013). Findings from this study can be generalized when the criteria explained in section 3.7 (study rigour/trustworthiness) are followed. Besides generalizability, case study research has also been criticized for not facilitating the assessment of cause and effect relationships; and that the ‘case’ being studied may not be typical of the larger problem being investigated (Labaree, 2013). However, since the aim of this study was not to assess a cause-effect relationship, the approach was deemed appropriate.

3.3 Case and Context in the Study

A case has been explained as a phenomenon occurring in a bounded context informing the unit of analysis for a study (Miles & Huberman, 1994). In this research, the case consists of NCD policy processes for HTN/DM control, which is a complex programme of interventions occurring in Ghana’s health system. It is useful to study this ‘case’ as it has the potential to offer deeper insights into issues that facilitate NCD management in Ghana and beyond. The case is intertwined with the context. In general, the context of the study is the Ghana health system. However, the study was undertaken in a number of specific contexts such as regional and municipal health directorates, and at regional, municipal and district health facility levels. The context also includes existing political, administrative, sociocultural and economic institutions and structures affecting the management of HTN/DM in Ghana.

3.4 Study Sites

The study site is a crucial consideration in research requiring particular attention as it offers the setting for researchers to identify research participants and build consensus (Marshall & Rossman, 2011). Additionally, where a researcher gains familiarity with the study site, it becomes easier to gain access to relevant documents to enhance study credibility. For the present study, the selection of sites was influenced by the following broad considerations;

1. The need to understand how the local context relates to the national context in HTN/DM management effort;
2. The need to understand the relationships linking different stakeholders in HTN/DM management, from the local to the national;
3. The identification of local and national participants deemed to be particularly knowledgeable in HTN/DM management and whose views will help achieve the objectives of the study

Due to these considerations, the study was conducted at national and district levels. The choice of the national level was necessary as policies for managing HTN/DM are formulated at this level. The importance of the national level for data collection is also evident in the significant HTN/DM morbidity and mortality trends and the contribution of these to the burden of disease in Ghana as shown in chapter one. The district level was appropriate as a study site because implementation of policies takes place at this level. Additionally, it is at this level that policy inputs are drawn. For example, for the policy process in Ghana, national mortality and morbidity data are collected from district level. The district level also constitutes the setting for the provision of health services, an important ingredient in the policy process, hence the need to include key informants and community members from the district level in the present study.

3.4.1. District level. At the district level, two municipalities were selected for the study. These were the Ga South Municipality (Greater Accra Region-urban) and Effutu Municipality (Central Region-rural). The selection of the two municipalities were informed by the following factors;

- The need to include providers from both urban and rural settings to gain an insight into how HTN/DM services are being provided in both contexts.

- In many municipalities, HTN is the leading NCD in terms of OPD attendance, admissions and death. The two municipalities were selected because in both municipalities, HTN and DM are diseases of public health significance compared to other municipalities where only HTN (or DM) is the problem.
- Finally, other municipalities that fulfilled the above criteria were geographically wide apart such that selection would have been more costly and time consuming.

The Ga South Municipality. The Ga South Municipality is located at the South-Western part of Accra and shares boundaries with the Awutu, West Akim, Accra Metropolitan Area, and the Ga West municipalities with Weija as its capital. The Municipality occupies a total land surface area of 413.76 sq. km with over twenty major communities (Ga South Municipal Assembly, 2019). Figure 3.1 shows a map of the municipality.

As at September 2018, the population of the municipality was estimated to be 510,145 (<https://www.citypopulation.de/php/ghana-admin.php?adm2id=0301>). According to the 2010 Population and Housing Census (GSS, 2012b), about 36% of the population were under the age of 15 years and 6.5% were over 60 years. Females in the municipality represented 51.1 % in 2010 with almost 9 out of 10 people living in urban neighbourhoods. Of the population 11 years and above in the municipality, close to 88% were literate with a higher proportion of literate males (92.6%) than females (83.6%) (GSS, 2012b). The most dominant ethnic group in the municipality is the Ga although the cosmopolitan nature of the municipality means that other ethnic groups such as the Akans and Ewes are present in great numbers as well.

According to the 2010 Population Census (GSS, 2012b), 34% of the employed population work in sales and services, while 23% and 9% are into craft and related trade and agricultural activities respectively. The informal and private sectors are the largest employers in the Ga South Municipality (<http://gsma.gov.gh/about.html>). In 2010, the informal sector employed about 80% of the working population in the municipality with a high proportion of females (85.5%) than males (GSS, 2012b),

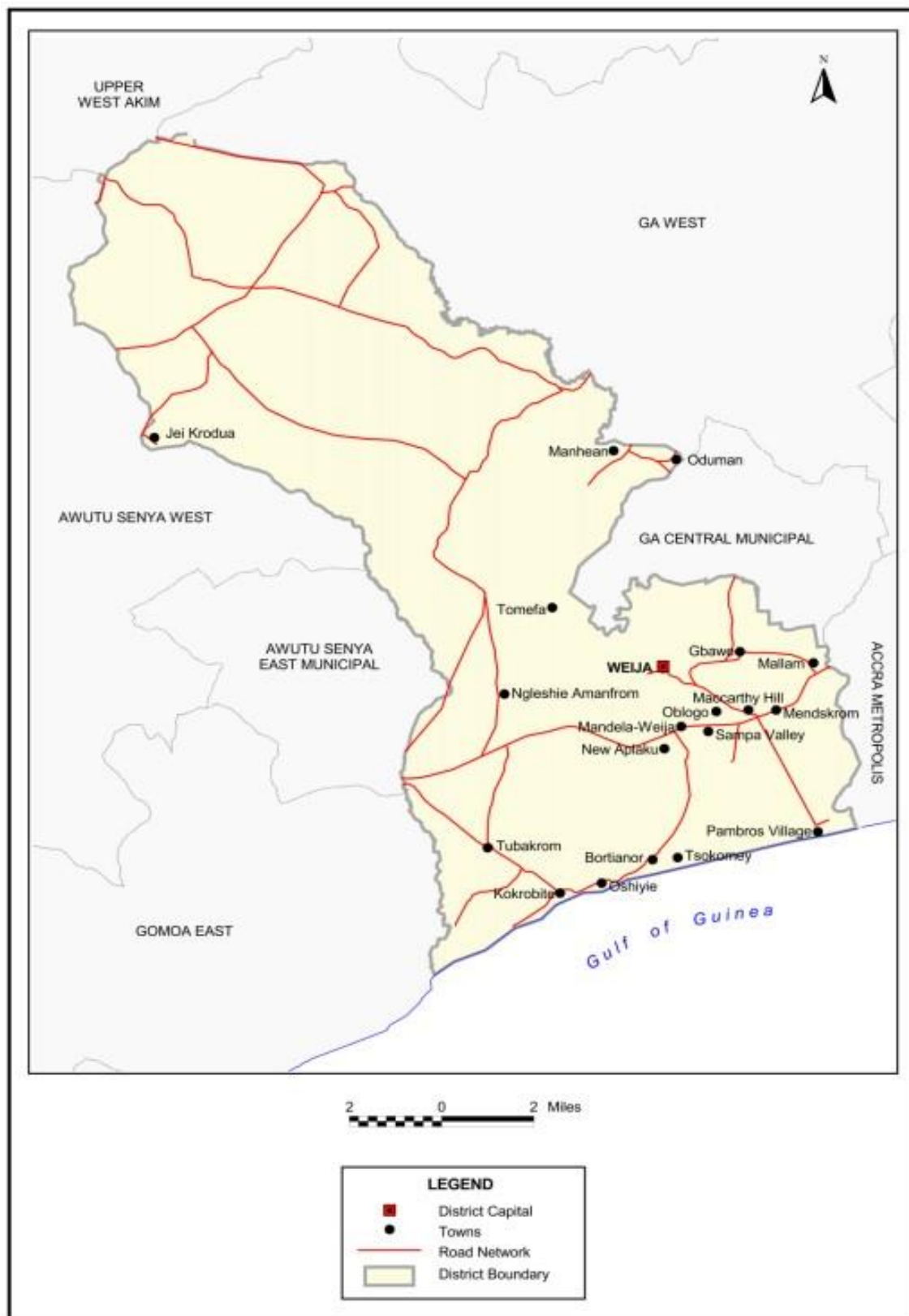


Figure 3.1. A map of the Ga South Municipality
Source: Ghana Statistical Service, 2012

The main health facility for general and referral purposes is the Ga South Municipal Hospital which was used for data collection. Although DM is seen as an emerging clinical condition in this municipality, and was one of five municipalities selected to benefit from the Novo Nordisk Diabetes Programme in Ghana, data is poorly kept. For example, there is no data on prevalence and standardised incidence of HTN/DM in the municipality. However, the GHS requires all municipal health directorates to prepare and submit annual reports on the leading health conditions. Recent figures from municipal annual reports on the diseases of public health relevance indicate that HTN/DM are among the leading NCDs in the municipality.

Hypertension is among the top 10 most reported conditions in the municipality in terms of OPD attendance, inpatient admissions and inpatient mortality. It is a significant contributor to OPD attendance (6%) [Appendix A1] and inpatient admissions (approximately 16%) [Appendix A2]. According to the 2018 mortality figures in the municipality, HTN is now the leading cause of inpatient mortality, with 16% of deaths in the municipality being attributed to the disease (Appendix A3). Diabetes, an emerging clinical condition in the municipality, is among the leading causes of admission with over 12% of all admissions in 2017 attributed to the disease (Appendix A2). Diabetes is also among the leading causes of death in the Ga South Municipality and was responsible for 9% of inpatient mortality in 2018 (Appendix A3). The selection of the Ga South Municipality for the present study was therefore informed by the researcher's decision to find out how the condition is being managed at the district level.

The Effutu Municipality. Located in the Central Region of Ghana, the Effutu Municipality (Figure 3.2) covers a total land area of 95 sq. km and shares borders with Gomoa East District in the Western, Northern and Eastern flanks and on the Southern part is the Gulf of Guinea (Government of Ghana-GoG, 2015b). Its population was estimated at 79,979 in 2014 (MOH, 2017). In 2010, females made up 51% of the population, with one-third of the population below 15 years in 2010 (GSS, 2012a). The municipality is made up of a coastal savannah grassland vegetation with a predominantly clay soil used in cultivating vegetables and salt production (<http://mofa.gov.gh/site/>). The municipality is largely rural as its capital, Winneba, is the only urban settlement although there are other towns such as Sankor, Gyangyanadze, Gyahadze and Nsuekyir (GoG, 2015b).

DISTRICT MAP OF EFUTU MUNICIPAL



LEGEND

District Capital

Towns

Road Network

District Boundary

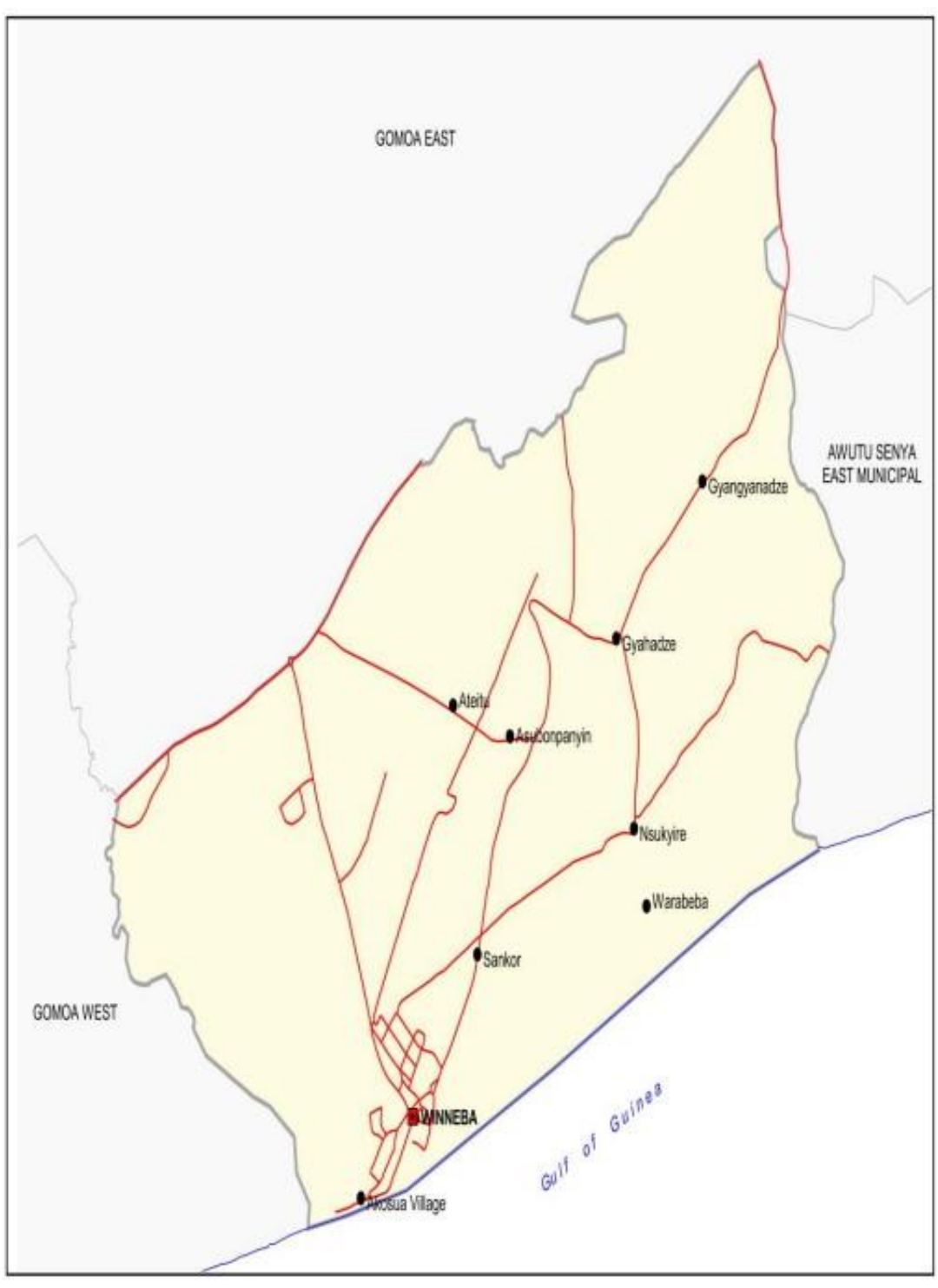


Figure 3.2. A map of the Effutu Municipality
 Source: Ghana Statistical Service, 2014

Of the population 11 years or older, over 80% were literate in 2010 and close to 64% can read and write in both English and Ghanaian languages (GSS, 2012a). In 2010, over 56% of the population aged 15 years and over were economically active, with 52% being males. The proportion of employed and unemployed stood at 92.8% and 7.2% respectively with high proportions of males (92.6%) than females (93.0%) being employed in 2010 (GoG, 2015b).

Although there are a few private hospitals and maternity homes, the main health facility in the municipality for general and referral purposes is the Central Regional Hospital, where data were collected. The hospital, previously called Trauma and Specialist Hospital, was made the regional hospital following the upgrade of the Cape Coast Regional Hospital to a teaching hospital. There are also two Maternity and Child Health/Family Planning Clinics in addition to a number of CHPS compounds in the rural areas of the municipality (GoG, 2015b). Health facilities in the municipality have been seen to be adequate although access to these facilities is impeded by poor roads (GoG, 2015b). The top five prevalent diseases in the municipality are: malaria, upper respiratory tract infections, hypertension and heart disease, typhoid, and gynaecological disorders (GoG, 2015b).

As in the Ga South Municipality, there is no record of standardized incidence/prevalence for HTN and DM in the Effutu Municipality. However, as required by the GHS, municipal annual health reports give insights into the leading diseases of public health relevance. Hypertension and DM rank among the top 10 diseases in terms of outpatient attendance, inpatient admissions and inpatient mortality (Appendix B). Annual reports indicate a rise in the cases of HTN seen in the regional hospital, from 5.4% of overall consultations in 2015 to 10% in 2017 (Appendix B1). Similarly, a percentage rise in inpatient admissions for HTN has been noted, increasing from 7.7% in 2015 to almost 12% in 2017 (Appendix B2). Hypertension is currently the leading cause of inpatient mortality and was responsible for over 15% of inpatient deaths in the municipality (Appendix B3). Similarly, DM is gradually entering on morbidity charts and was among the leading causes of OPD attendance in the municipality in 2017 contributing close to 7% of all inpatient admissions and the third leading cause of mortality in 2017 contributing approximately 10% of inpatient mortalities (Appendices B2 and B3).

3.5 Methods

The qualitative methods used for the study included documentary analysis, interviews and focus groups. These methods were combined in the study using qualitative description, a technique for analyzing data from a small number of respondents. This is the method usually chosen in health research when a thorough description of phenomena is sought (Sandelowski, 2000), information is required from those directly experiencing a phenomenon, and where time and resources are limited (Bradshaw, Atkinson, & Doody, 2017). As a technique, qualitative description offers a thorough summary of events in “everyday terms of those events” (Sandelowski, 2000 p.338). Maxwell (1992) opines that researchers who use qualitative description strive for accuracy of description such that a high proportion of people observing the same event would accept (the description) as accurate (known as descriptive validity). Qualitative description also offer interpretive validity, the accuracy between the meanings attributed to participants and the actual perspectives of participants (Maxwell, 1992).

This qualitative descriptive method was deemed suitable for this study as it “is amenable to obtaining straight and largely unadorned (i.e., minimally theorized or otherwise transformed or spun) answers to questions of special relevance to practitioners and policy makers” (Sandelowski, 2000 p.337). Respondents air their views, experiences and feelings about a phenomenon and a direct description of what happened is provided. It is also very useful to gain knowledge of patients’, relatives’ or professionals’ experiences about a particular phenomenon (Neergaard et al., 2009). Furthermore, qualitative description is a frequently used method in health services research. It has been used to study help-seeking for emotional distress among women and general practitioners in Oman (AlBusaidi, 2010); experiences of middle-aged people living with heart failure (Nordgren, Asp, & Fagerberg, 2007); and patients’ decision on whether to take hypertensive medication (Benson & Britten, 2002). In addition, Tomlin et al. (1999) and Barry et al. (2001) used this methods to study general practitioners’ perspectives on what constitute effective health care. The method has also been deemed to be particularly useful in health policy research especially as such research deals with rapid change and develops a more fully integrated theory base and research agenda (Sofaer, 1999). The method has been criticized as being subjective due to the way data are collected and analysed (Sandelowski, 2000). However, despite this criticism, it is still an accepted and frequently used method, and rigor can be maintained whilst using it (Sofaer, 1999).

3.5.1 Data collection methods. In line with Creswell's (2013) advice that qualitative researchers adopt multiple methods of data collection to facilitate triangulation and enhance credibility of findings, three sources of data were used in the study. These include key informant interviews, focus group discussions and documents.

Key informant interviews. Key informant (KI) interviews offer a platform for a researcher to have a loosely structured conversation with respondents who have a deep understanding of a phenomenon due to their knowledge or experience of, or exposure to that phenomenon. Semi-structured interviews (Dearnley, 2005) were used in this study with the main purpose of acquiring detailed information from participants on HTN/DM management in Ghana. Using KI interviews for data collection offers many benefits to the researcher. KI interviews generate deeply contextual information from participants' experiences (Schultze & Avital, 2011), offer rich and vivid data (Kajornboon, 2005), and provide the opportunity to collect a large amount of data relatively quickly (Marshall & Rossman, 2011). In addition, it helps researchers to further explore and clarify responses from respondents by asking follow-up questions (Doody & Noonan, 2013). However, KI interviews have certain weaknesses. Alshenqeeti (2014) states that;

- Interviews could be time-consuming, producing large volumes of data that makes analysis tedious.
- There is the potential for inconsistencies and respondents may not think deeply about the phenomenon before answering questions.
- Participants in an interview may be evasive about an issue, or may simply not tell the truth about the issue in question.

To address these weaknesses, certain measures were taken. First, it was ensured that interviews did not go beyond one hour and a conscious effort was made to encourage participants to focus on issues pertinent to the study objectives. Second, a convenient date and time was arranged with each participant (with a fair degree of flexibility) to make them feel comfortable with the interview process. Third, the interview guide was given to participants before the interview took place. This enabled participants to prepare for the interview by eliminating any element of surprise and to encourage reflective responses from participants.

Key informant interviews have been a major feature of health research. Barker, Bosco and Oandason (2005) used semi-structured interviews to understand Interprofessional Education

Collaborative Patient-care Practice (IECPCP) in Canada. In the US, interviews were used to investigate patient and provider perceptions of weight gain, physical activity, and nutrition counselling during prenatal care visits (Whitaker, Wilcox, Liu, Blair, & Pate, 2016). Interviews have also been used to identify key issues influencing utilization of HIV services for Africans in Britain (Burns et al., 2007), advanced care plans (Rhee, Zwar, & Kemp, 2012), and in a recent health policy study in Africa, interviews were used to explain how the Government of Botswana is undertaking its stewardship function through its Ministry of Health (Seitio-Kgokgwe, Gauld, Hill, & Barnett, 2016).

Selection of key informants. Key informants were purposively (Guest, Bunce, & Johnson, 2006) identified based on their knowledge and experience in HTN/DM management in Ghana. In general, a key consideration was given to the number of interviews sufficient to achieve data saturation; that is, when similar responses recur in a particular category (Mason, 2010). Saturation is possible because interviewees are usually chosen based on some common attributes. For example, in their study of how women talk about sex and their perceptions of self-report accuracy in Nigeria and Ghana, Guest et al. (2006) reported that data saturation occurred for the most part after analysis of twelve interviews.

For the present study, a total of twenty participants for key informant interviews was initially planned. This was based on an assessment by the researcher of the number of participants in particular categories required to reach theoretical saturation (Bryman, 2016) to cover the scope of the policy and service delivery environment for HTN/DM in Ghana. After initial interviews, recording, transcription, coding, and reflection on how codes mapped study objectives, six more interviews were conducted using the snowball approach (Bryman, 2016) until data saturation occurred. The use of the snowball approach meant that additional informants for interviews were identified through contact with those who had already been interviewed, as they were aware of the study objectives and could therefore suggest suitable informants. Thus, a total of twenty-six interviewees were selected for the study. Key informants were selected based on stakeholder categories. Different stakeholders are involved and play different roles in HTN/DM management in Ghana. Selection for interviews was therefore based on the following roles being performed by stakeholders;

- Personnel in health policy formulation and implementation in Ghana (These were interviewees drawn from national and district levels involved in NCD policy development and implementation in Ghana).
- Member of a patient organization (A respondent from a recognized HTN/DM association in Ghana was selected).
- Payers (Interviewees included personnel involved in claims and reimbursement of hypertension and diabetes services under the health insurance system of Ghana).
- Health providers (Interviewees included doctors and senior nurses managing HTN/DM patients in Outpatient departments of hospitals).
- Health managers or administrators (This comprised managers of hospitals involved in planning and implementation of HTN/DM programmes in communities).
- Advocacy group members (Interviewees were also drawn from a voluntary organization performing advocacy roles on HTN/DM management. This body engages with policy makers and other stakeholders on HTN/DM advocacy).

Based on these roles, participants included national policy makers, national health providers and managers, regional health providers and managers, and other community and sector representatives as shown in Table 3.1.

Table 3.1.
Summary of key informant interviews

Stakeholder category	No. of Interviewees
National policy makers	9
National health providers and managers	6
District health providers and managers	6
Other community & sector representatives	5

Recruitment of key informants. Recruitment of key informants started with drafting and sending letters to the stakeholder institutions involved in the study and asking for support from management of these institutions to identify suitable potential interviewees. Information sheets (Appendix C) detailing the nature of the study and what was required of interviewees were provided to the management to invite potential interviewees to voluntarily participate in the study. After receiving contact details from management, potential interviewees were followed up using phone calls, e-mails, and personal visits. The researcher explained the purpose of the study and

answered questions posed by potential interviewees. Those who were willing to participate were then given consent forms to sign (Appendix D). The inclusion criteria for interviewees were people who fell within the requisite stakeholder categories identified for the study, and who had worked for not less than two years in their current position at the time of data collection. Those who did not fall within this scope were excluded as they were deemed not to be experienced enough to provide the information needed.

Data collection procedure. Data collection for key informant interviews started on 15 June 2017 and ended on 31st October 2017. A semi-structured interview guide (Appendix E) was prepared ahead of data collection for participants who fitted into different categories. Semi-structured interviews were chosen for two reasons: first, to collect detailed information and to seek clarifications by asking follow-up questions; and second, for tailoring interviews to specific stakeholder or informant groups performing different roles, sometimes within the same group. According to Denzin and Lincoln (2003), structured interviews are not suitable where data collection involves respondents with diverse functions, responsibilities, experience and knowledge in different settings or institutions.

Interview guides consisted of a loose frame of open-ended questions based on the objectives of the study and the literature. The interview guides were used to guide interviewees on the key issues and towards the information sought. For policy makers, information was sought on current policies for managing HT/DM, how policies are developed and implemented, how evidence is generated and incorporated into policies, which stakeholders are involved and their roles, and what specific programmes and initiatives are in place for managing HTN/DM. Participants from advocacy and patient organizations were asked about their role in the management of HTN/DM, how they influence policy development and implementation, and the extent to which their roles have impacted on the prevention of these conditions. Providers and health managers were asked to share their views on services available for patients, how policies are being implemented on the ground, how evidence is generated and reported, their relationship with policy makers, their role in HTN/DM policy formulation and implementation, and the challenges hindering the management of HTN/DM in their communities.

Before interviews, arrangements were made with potential interviewees individually, with the researcher prepared to reschedule times to accommodate their changing commitments. This was particularly common with health providers (doctors and senior nurses) who had to attend to

emergency situations. Interviewees were called over the phone a day before the interview to confirm the place and time of the interview. Most of the interviews were held in interviewees' place of work, except for two interviews (with doctors) that took place in the homes of respondents over the weekend.

Before interviews, a copy of the interview guide was sent to interviewees by e-mail. The act of sending interview guide to interviewees ahead of interview correspond to Gill et al. (2008), who stated that this enables interviewees to give good and detailed information and avoid that element of 'surprise' in the interview questions.

The interviews were conducted along the lines of the questions in the interview guide. Interviews were conducted in an atmosphere of confidentiality, with participants being assured that no information related to their personal identity would be made known. This enabled participants to feel relaxed to air their views on issues. Participants' permission were sought verbally (even after signing consent forms) before interviews were audio recorded.

At the beginning of the interviews, participants were asked background questions on their qualifications and years of experience in the job, as well as their current roles. This put participants at ease for the interview process and helped engender a good rapport between the researcher and participants (Patton, 2002). This was followed by more detailed questions relevant to the objectives of the study. All interviews were conducted in English, the official language of Ghana, and lasted between thirty-five and sixty-five minutes. Questions were framed to avoid yes or no answers. Follow-up questions or probes were used throughout the process to elicit more detail. Probes are useful in interviews as they ensure that clarifications are sought while discussions are ongoing (Rubin & Rubin, 2012). An example of how probes were used during an interview with a health provider, is presented below;

Researcher: You have shown that hypertension is a real challenge in this municipality, but how are you responding to this challenge? Respondent: We provide various services to hypertensive patients who come here.

Researcher: What specific services do you provide?

In the above example, the italicized probe was used to obtain more information from a respondent who went on to explain the range of clinical services provided to members of the municipality.

After interviews, a thank you e-mail was sent to participants in appreciation of their participation in the study.

Focus group discussions. In explaining the usefulness of focus group discussions, Freitas et al. (1998 p.2) stated;

“The answer to the question “How do people consider an experience, idea, or event?” demands the application of some technique or method that concerns each person’s reality. What can be done easily by gathering people into groups, creating environmental conditions for more spontaneous expression of each one, and facilitating the interaction of everybody? The Focus Group (FG) is one of the qualitative research methods to be utilized in the search for answers to such questions”

Focus group discussions have been explained as a group interview used for data collection. According to Denscombe (2010 p.177), “focus groups consist of small groups of people who are brought together by a moderator to explore attitudes and perceptions, feelings and ideas about a topic”. It is a way of providing a platform for a homogeneous group to reflect on questions asked by an interviewer. Focus group discussions offer several benefits to a researcher. It engenders interaction between participants which, if well facilitated, encourages members to think about the issue in more detail, taking into consideration the perspective of other participants. Focus groups give confidence in expressing views and elicits more information and insights compared to a series of interviews. Gill et al. (2008) puts this in perspective and state that focus groups are useful tools in obtaining data on collective views and offer explanation behind those views; and are particularly advantageous in generating understanding of the experiences of participants on a particular phenomenon. For the present study, focus group discussions were used not only for the above-mentioned benefits but also due to its suitability for the study. Of particular relevance to this study were the questions posed by Leung and Savithiri as follows;

“Why do you think it is so difficult for patients with diabetes to follow a specific diet and exercise plan? How do you think diabetes management could be more effective for patients? These questions are complex and without rigid, definable variables. They are answered best by qualitative methods in which the output is rich and textured, so that researchers can learn and confirm the meaning behind the facts. Of the many different qualitative methods, focus group discussions seem suitable, as they can produce useful

data, introduce new theories, and illuminate various perspectives” (Leung & Savithiri, 2009 p.219)

Focus groups are, however, not useful where statistical data is required, where there is no group chemistry and participants feel apprehensive in discussing issues freely. Besides, a few vocal members may hijack and dominate discussions and participants may conform to the views of other members of the group (Dilshad & Latif, 2013). In order to address these issues, a few ground rules were laid before discussion began and these have been explained in the data collection section.

The use of focus groups with patients and consumers in health research is not new. In Germany, Eysenbach and Kohler (2002) used focus groups and other methods to describe appraisal techniques used by consumers in searching for health information on the Internet. Focus groups involving patients have been used to define and identify the domains of the concept of health activation (Hibbard, Stockard, Mahoney, & Tusler, 2004) and in Ghana, Aikins (2005) used focus groups to provide insight into Ghanaian diabetes experiences.

Selection and recruitment of patients. Although focus group discussions were planned at the Ga South Municipal Hospital, permission was not granted for reasons beyond the researcher’s control (previous bad experience). However, permission was granted for the researcher to interact with patients during the weekly held diabetes education programme at the hospital. The researcher had informal communication with patients both individually and in small groups, where questions were asked on the nature of NCD services and patients’ perceptions on management of HTN/DM in the municipality. Although this communication was not directly coded and integrated into study findings, it proved an invaluable asset to the researcher nevertheless. Apart from giving the researcher good insights into the nature of health services for HTN/DM in the municipality, this communication shaped the interview process by influencing the nature of health services questions that were asked during interviews.

Patients for focus group discussions were sampled from the Central Regional Hospital. Although the initial approach was to purposively identify HTN/DM patients, patients were finally identified through the snowball technique (Goodman, 2011) as health workers contacted patients on telephone and invited them for the focus group discussion using hospital records. Patients were identified by health workers at the outpatient services of the hospital after a letter was sent to hospital hierarchy (Medical superintendent) asking for permission and support in the identification

of participants. Patients were then invited individually to participate in the discussion on a specific date that had been determined. The inclusion criteria were patients aged between 18 and 65 years who were already aware of their health situation and were investing time and effort in it through their attendance at the hospital. Patients who were pregnant, children, adolescents, those who could not communicate in English and those incapable of giving consent were excluded from the study. A total of 18 patients were selected for focus group discussions. This included 9 patients who were diagnosed with, and were undergoing treatment for DM (FG1) and nine other patients diagnosed with and undergoing treatment for HTN (FG 2). Some patients had both DM and HTN and were included in both groups. In both focus groups, patients were given information sheets detailing study objectives and information sought (Appendix F). After answering patients' questions, patients voluntarily signed consent forms (Appendix G). A pre-designed recruitment script (Appendix H) was used to recruit patients into the study.

Data collection procedure. Focus group data collection started with the appointment of moderators for each group. According to Krueger (2014), a focus group moderator should be someone with a good knowledge of the topic under discussion. As a result, two senior HTN/DM nurses were appointed, one as a moderator and the other an assistant moderator. Before each focus group, the rationale for the study and the significance of each question was discussed with moderators (Krueger & Casey, 2014). While moderators asked questions and chaired the process, the researcher was present at both focus groups and took notes personally. Two research assistants from the University of Ghana assisted with the logistics (food, water, audio recorder, time, welcoming participants and showing them to their seats, etc.). In both cases, besides taking notes, the researcher monitored proceedings, asked questions and made clarifications where necessary.

Prior to both focus group discussions, the researcher welcomed participants to the exercise and thanked them for attending (Krueger & Casey, 2002). The moderator and assistant moderator were introduced and a brief overview of the topic was provided, asking patients to share their experiences on how their conditions were being managed. Participants were informed that they had been invited because their experiences, perceptions (what they liked or did not like), and how the health system responded to their conditions were important items of information for improving HT/DM services in Ghana. A few guidelines to make the discussions run smoothly were explained (Krueger & Casey, 2002): patients should feel free to air their views as there are no right or wrong answers to questions but only different opinions; discussions would be recorded but purely for research purposes; one person was to speak at a time and others must respectfully listen; everyone

had to switch their phones off or put them on silent mode; any calls were to be answered outside of the room. The first session (FG 1) lasted for 98 minutes while the second (FG 2) lasted for 105 minutes.

Questions were generally reflective in nature as patients were asked to share their experiences. Patients were asked to talk about their experiences of how HT/DM are being managed, what services they receive in health facilities, problems in accessing HT/DM care, and their views on what could be done to improve HT/DM care in Ghana. At the end of each discussion, the researcher gave a summary of the issues discussed and a few minutes of debriefing followed (Krueger & Casey, 2014). Participants were asked to wait for 'Item 13' (the usual term in Ghana for refreshment) after which a token was provided for transportation. Discussions were audio recorded with consent of patients. Those who had put their email addresses on the consent form were assured that results of the study would be sent to them. Participants who provided their phone contacts were telephoned the next day by the researcher to thank them for their time and participation.

Documentary sources. Data were also drawn from documentary sources for the study. As social facts which can be produced, shared and used in socially organized ways (Bowen, 2009), relevant documents were utilized through the process of documentary analysis: a technique for examining and interpreting data for eliciting meaning, gaining understanding and in the development of empirical knowledge (Corbin & Strauss, 2008). Bowen (2009) explains several advantages of using documents in qualitative research;

- Documents are an efficient method as they are less time-consuming compared to other qualitative methods. Using documentary sources require data selection instead of data collection.
- Since official records of relevant public events most likely exist and can be accessed without permission of the authors, documents have become an attractive source of data for qualitative research because of its availability
- Documents are a more stable source of data as the researcher's presence does not alter what is being studied.
- Documents are less costly than other qualitative sources of data

However, using documents also comes with certain disadvantages. Documents may not provide sufficient detail for a study (Bowen, 2009). There may be difficulties with retrievability as access

to documents may be deliberately blocked (Yin, 2009), and bias selectivity may occur due to incomplete selection. To address these difficulties, data from key informants and focus groups were used to supplement documentary data. A concerted effort was made for the utilization of relevant NCD documents without deliberate exclusions. Also, documents used in this research are available either on the Internet or upon request from the appropriate stakeholder institutions.

For the present study, three main reasons informed the use of documentary sources. Firstly, documentary sources were used to confirm information from interviews and focus groups. This is because qualitative researchers are expected to seek convergence and corroboration by drawing from multiple evidential sources (Bowen, 2009; Yin, 2009). Documentary sources therefore offered a means for triangulating (known as data sources triangulation) findings with other data sources used in the study (Yin, 2013). Secondly, documentary sources were used to provide background to the study as documents have been known “to provide data on the context within which research participants operate” (Bowen, 2009 p.29). Thus, relevant documents were beneficial in detailing the environment within which HTN and DM have been managed in Ghana. Thirdly, as a qualitative research method in its own right (Bowen, 2009), documentary sources were beneficial in the achievement of the objectives of the study. Since most activities undertaken in response to HTN and DM management as well as key issues hindering the management of these conditions are documented, relevant documents were important sources of information for achieving study objectives. For purposes of NCD management, documents used in this research can be grouped into 3 main sources;

- WHO and MOH policy documents
- GHS documents
- Miscellaneous documents

WHO and MOH documents included WHO protocols, strategic papers and action plans on NCD that have been ratified by Ghana. This category of documents also included documents drafted by the MOH of Ghana with support from the WHO. Other NCD documents drawn by the MOH without WHO support also fell into this category. These documents included World Health Assembly Reports, NCD policy documents, NCD Strategy, and policy documents on risk factors such as Ghana Nutrition Policy, Alcohol Policy, Tobacco Control Regulations, Standard Treatment Guideline, etc. These documents contributed in understanding policy development, and implementation, as well as on policy response and other activities for the control of HTN/DM.

The second set of documents came from reports of the GHS. Policy makers indicated that reports from the GHS details all activities on NCDs in Ghana. The main reports that were relevant for the study in this category were the GHS annual reports. The annual reports provided information on specific activities on HTN/DM within specific time periods. These reports were very useful as they provided information on key response activities for the control of HTN/DM.

The third set of documents can be categorized as miscellaneous since they came from various sources. These included Common Management Arrangement and municipal and district reports, and Programme of Work (PoW), health financing, regenerative and nutrition programme, and NCD control programme documents. These documents were also useful in understanding response activities, policy implementation and key issues hindering NCD activities in Ghana. In accessing these documents, the researcher obtained a letter of permission from the MOH, the GHS and the Greater Accra Regional Health Directorate. All policy documents were accessed from the Policy, Planning, Monitoring and Evaluation (PPME) Unit of the MOH. Annual reports and programme documents were obtained from the PPME of the GHS. Documents came in different forms—electronic, hardcopy, hand-written or photocopied. Where electronic copies of documents were available, they were downloaded. In other cases, the researcher was given hard copies of documents (e.g. NCD Policy, Strategy, Nutrition Policy, Alcohol Policy etc.) or made photocopies of these documents. A few reports from the provider institutions were handwritten as the researcher was not allowed to print or photocopy them (e.g. top 10 conditions on morbidity, mortality charts, etc.).

Many health researchers have used documentary sources in the past. Robertson et al. (2010) used documentary and other sources to describe and evaluate how electronic health records are being implemented in secondary care in England. Documentary sources have also been used to identify the factors responsible for maternal deaths in a hospital in Ghana (Ansong-Tornui et al., 2007) and in Senegal, documentary data were used with other methods to evaluate the outcomes of Senegal's Free Delivery and Caesarean Policy (Witter et al., 2010). These examples indicate documents have been commonly utilised as an important data source in health and health policy research, and their use was considered similarly valuable in this study.

3.5.2 Data analysis. In analysing data, an adaptation of the framework method (See figure 3.3) for analysis of qualitative data in multidisciplinary health research through the identification of themes and patterns put forward by Gale et al. (2013) was used. Originally developed in the

1980s for largescale policy research studies (Ritchie & Lewis, 2003), this method has been adopted in the analysis of multi-disciplinary health data by various scholars over the last twenty-five years (Gale et al., 2013) and is now recognized as a rigorous way of analyzing qualitative data. Although there is debate on how the quality of analysis of qualitative studies can be assessed, key issues have always included analytical rigor and transparency (Morse et al., 2002). The framework method provides a rigorous and transparent approach to analyzing qualitative data because it puts forward a clear structure that facilitates recognition of patterns in data. It also offers a coherent procedure that is easy to adopt and follow, and allows for inclusion of non-interview data such as field notes and documents (Gale et al., 2013). In addition, the method is amenable to both inductive and deductive thematic analysis and convenient for all data sources (Gale et al., 2013), hence its suitability for this study. According to Gale et al. (2013), a key advantage of the method is its flexibility. With this flexibility of method, the researcher adapted it to suit the nature and complexity of data. For example, since documentary data came in different unstructured forms, a strict application of the original framework became difficult. Thus an adaptation with the following steps was used: Data preparation, importing data into NVivo software, coding data, constructing a framework for analysis, indexing and interpretation (Figure 3.3).

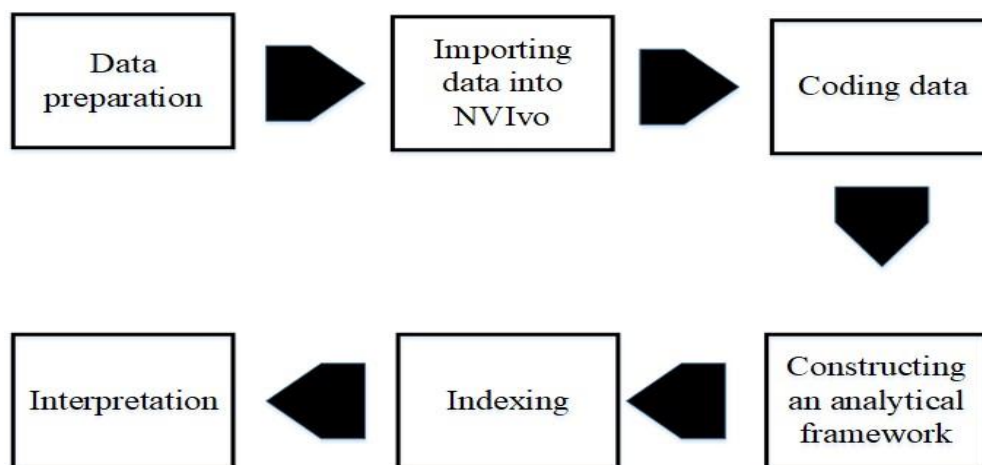


Figure 3.3. An adaptation of the framework method for data analysis for the study

Data preparation. Interviews and focus groups were audio taped. Audio recordings were transcribed verbatim into word processor files. To facilitate data familiarization and avoid mistakes, transcription of all data was undertaken personally by the researcher. This ensured early

immersion in the data through which some initial ideas and patterns in the data became apparent. Based on the advice of Gale et al (2013), wide margins and line spacing on transcripts were left for later coding and making notes. To ensure that initial transcriptions were accurate, audio recordings were played back while the transcripts were re-read. Field notes on transcripts were then added. The researcher familiarized himself with the data by listening to all the audio recordings again and then rereading all transcripts. Familiarization with transcripts helped with a sense of initial patterns. This was helpful in making analytical notes and writing down initial thoughts and impressions in the line spaces. Relevant documents were read and reread as part of the data familiarization process.

Importing and arranging data in NVivo 11 software. All transcripts of interviews and focus groups as well as documents were imported into NVivo 11 Software (QSR International Pty Ltd). Data were organized in the “Sources” folder in the software and were arranged according to the type of data— interviews, focus groups, and documents. A few documents, however, were not imported into the software as they were available in scanned format, hence relevant contents could not be copied into appropriate nodes. These documents were printed, read and relevant portions were manually coded and integrated into study findings.

Coding in NVivo 11 software. The next stage was the coding of interview, focus group and documentary data (Screenshot of Nvivo coding -Appendix I). Basit (2003) explains coding as the process of assigning tags or labels for allocating units of meaning to the descriptive or inferential information compiled during a study. The researcher began the coding process by labelling relevant words, phrases, sentences, and sections in the transcripts. These labels were based on actions, activities, concepts, opinions, and processes that were relevant to the study. An open coding process was used and data were coded when they were repeated in several places, surprising, when respondents clearly emphasized that an idea was important, or when it related to something the researcher had read in a published report. However, coding was also guided by statements that related directly to specific research objectives. To help in the identification of emergent labels or codes, the ‘Word Frequency’ query in NVivo 11 software was run to know the most frequently occurring words in the data (Figure 3.4). Later, other queries in NVivo Groupings (exact matches, with synonyms, with specializations, with generalization) were run which all helped in populating ideas in the data and determining patterns.

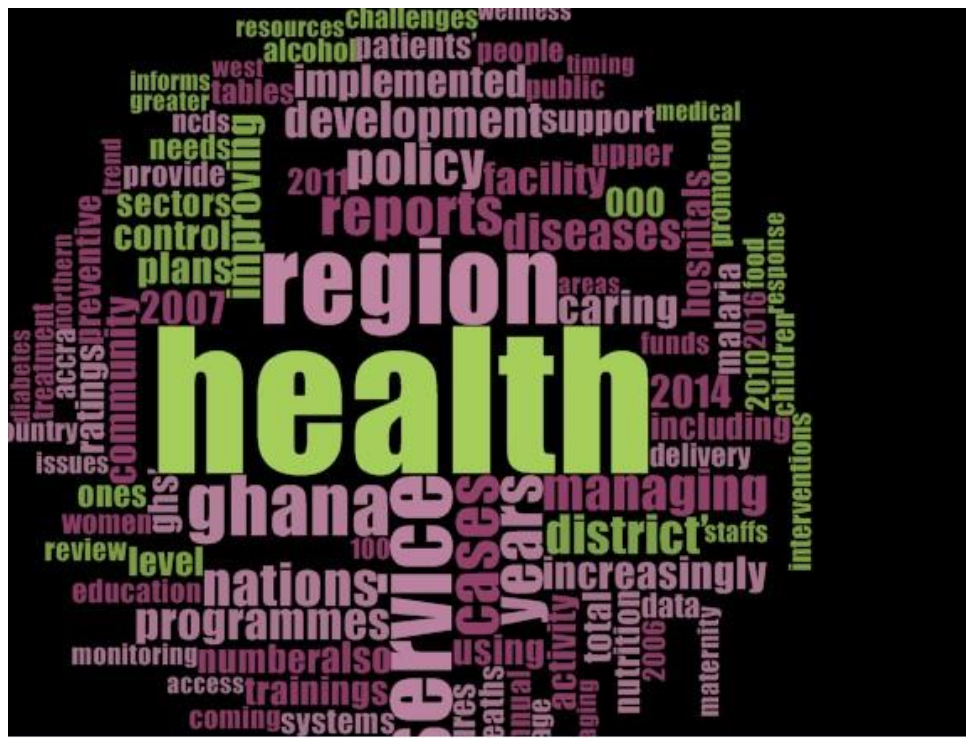


Figure 3.4: Word frequency query in cloud display

Constructing and applying a framework for analysis. The first step in developing an analytical framework for the study was to follow the advice of Thomas (2006) who stated that the broader themes or categories emanate from the objectives of the study; adding that when such categories are derived from the research objectives, this enables specific coded data to be linked to these objectives. Hence, ‘evidence’ as a broad category was taken from the objective “To describe how evidence is incorporated into diabetes and hypertension policy development and implementation” and was coded as a broad theme. This approach provided a guide through which emerging codes were directed and arranged in a logical manner. Secondly, after coding six transcripts, the researcher compared labels and decided on a set of ‘working codes’ to be applied to the remaining transcripts (Gale et al., 2013). This, however, did not mean the researcher became oblivious to any new codes that emerged. An ‘other’ code under each transcript was maintained to avoid ignoring data that did not fit into the working codes already decided. Thus the framework was not finalized until the last transcript was coded.

Next, codes were grouped into higher level categories. The grouping of codes into higher level categories helped to direct the review of content specific to particular research objectives. As an

example, after coding ‘evidence’ as a broad category from the research objective, two themes were coded within this broad category (types/sources of evidence and incorporating evidence) in NVivo 11. Within the theme ‘types/sources of evidence’, five sub-themes – GBD estimates, surveys, epidemiological data, results of monitoring and good practice evidence) were created in Nvivo 11. The categories and themes are called ‘nodes’ in NVivo 11 software. Nodes are ‘containers’ in NVivo 11 software for storing related information in a particular place in order to aid the identification of patterns in data. Within these bigger containers (categories and themes), detailed codes and categories emerging from open coding were placed. A depiction of a hierarchy of nodes relating to one research objective is shown in Figure 3.5.

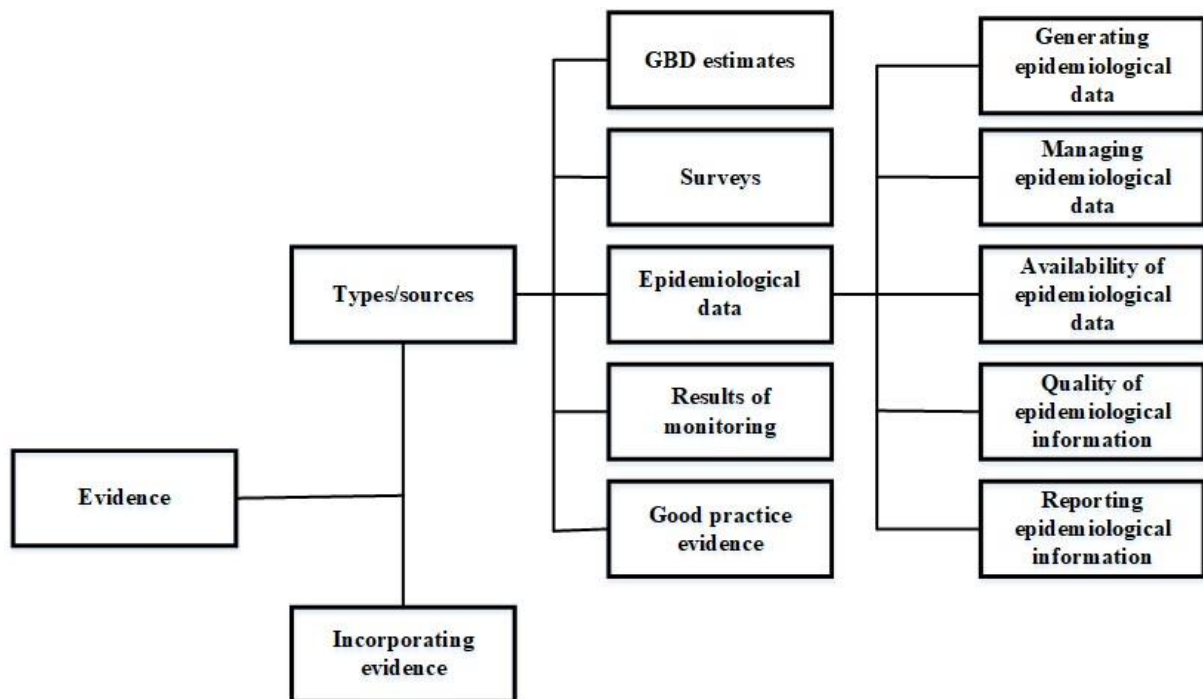


Figure 3.5. A depiction of hierarchy of codes relating to one research objective

Indexing/sorting. The process of sorting became more straightforward when the analytical framework was organized as a hierarchy of nodes in Nvivo 11 software. Through a ‘drag and drop’ process, relevant paragraphs/sections were put in the appropriate nodes under relevant research objectives.

Interpretation of data. To aid the interpretation of data, the researcher maintained important memos during coding and identification of patterns. Memos are containers in NVivo 11 for recording observations, impressions, ideas, and early interpretation of data. The researcher studied and reviewed data for interesting ideas, which helped in the identification of key characteristics and differences in the data. This also helped in mapping connections between categories which were relevant in identifying relationships and functions especially regarding stakeholder interconnections on response activities. The main idea was to go beyond a mere description of individual statements and explore ideas that inform the emergence of particular situations, how certain actions are taken or not taken, and how different actors respond to situations.

3.6 Ethics

To ensure that the study was conducted on sound ethical principles, approval was obtained from the Ghana Health Service Ethics Review Committee (GHSERC) [Appendix J] and the University of Canterbury Human Ethics Committee (HEC) [Appendix K]. Acting on the advice of Bogdan and Biklen (2007) for researchers to seek support (even where ethics approval has been granted) from those who may exert some influence on data collection in order to avoid possible data collection problems, the researcher aligned with key position holders in stakeholder organizations. Support was sought from heads of departments and managers of stakeholder organizations in identifying study participants. Initial letters of approval were sent to managers and heads of department of stakeholder organizations including policy makers, payers, providers, and advocacy organizations. Participation in interviews and focus group discussions was voluntary and participants were given information sheets and signed consent forms before taking part in the study. Interviews were conducted in strict confidentiality and participants were assured that no identifiable information would be used in the study when findings were reported.

As noted already, permission to conduct focus group discussions was denied at the Ga South municipal hospital. However, since patient views about HTN/DM services was paramount in this study, the researcher took advantage of the weekly-held diabetes education programme to interact with patients. Key ethical principles guided this informal interaction with patients. First, permission was sought from doctors and nurses organizing this programme to interact with patients who wanted to and have informal conversation about services available for HTN/DM. This meant the researcher had the consent of both organizers and patients for this interaction. Second, this

informal conversation took place in the presence of doctors and nurses of the educational programme. This ensured that all ethical issues were addressed and that patients were not coerced or harassed in anyway during this interaction. Finally, as this interaction was not a formal data collection tool but to give the researcher an understanding of health services in order to shape interviews with health personnel, patients were assured that this conversation was not being recorded and that nothing said would be traced to them in the final research report. This enabled patients to feel comfortable to discuss the services they were receiving at the hospital.

Data collected for this research have been stored on a secure University of Canterbury server and will be destroyed after 10 years. Hard copies of documents were stored in locked cabinets at the University of Canterbury.

3.7 Case Study Rigour/Trustworthiness

Rigour or trustworthiness in research addresses study quality and whether results from a study are robust and believable. In general, trustworthiness is meant to guarantee the accuracy of study findings and, in the case of case studies, it is an underpinning consideration for generalizing study findings (Guba & Lincoln, 1989; Tuckett, 2005). To engender trustworthiness in qualitative studies, Guba and Lincoln (1989) and Shenton (2004) put forward criteria that must be followed. The criteria include credibility, transferability, dependability and confirmability. This research study was designed to incorporate these criteria in order to enhance its quality.

3.7.1 Credibility. To ensure credibility, researchers are expected to ensure statements and experiences attributed to participants reflect participants' observation of reality (Guba & Lincoln, 1989). This means researcher biases are minimized and the actual experiences of study participants are reflected. Guba and Lincoln (1989) shared key ways to ensure findings are drawn from constructions of research participants. These considerations include prolonged engagement with study participants, peer debriefing and member checking. Prolonged engagement refers to the time period data is collected and how well the researcher understands study participants. With regards to prolonged engagement, a number of measures were embarked upon in this study. First, data were collected over a period of four months which provided opportunities for significant engagement with stakeholders. This began with informal talks with some participants, visits to workplaces, phone calls, sending of emails (interview questions) to participants and interviews.

The purpose of engaging with participants in this way was to engender trust and provide encouragement for respondents to air their views during data collection.

Peer debriefing involves seeking advice from other individuals who raise issues about research findings thereby helping the enquirer to understand other perspectives of the findings. There were a number of opportunities for the researcher to do this. The researcher discussed interview and focus group questions with his supervisors before data collection and throughout the study process. Supervisors asked questions, offered advice and provided general guidance that helped ensure participants' constructions were reflected in the findings of the study. In addition, the researcher made presentations which involved the discussion of findings, for example to Postgraduate Research Hub and Journal Club meetings, at the School of Health Sciences, University of Canterbury. The study was presented at an international conference (the 10th Health Services Research Association of Australia and New Zealand-HSRAANZ Conference) where audience comments helped shape the research.

In research, it is also necessary to test data and interpretations with the participants from whom data were collected. This is meant to ensure credibility in findings by testing whether participants will affirm their responses, or to determine their views on other anonymous peers. This is referred to as member checking (Guba & Lincoln, 1989). With regards to member checking, it was possible to repeat responses back to participants to confirm that they meant what they said, during data collection within discussions. In addition, during interviews, the same questions were sometimes asked differently in order to compare responses from a participant. The good rapport with interviewees enabled the researcher to get back to respondents for clarification or more explanation where necessary. This ensured that findings actually reflected the views of participants. Quotations were used to detail the views of participants on key themes which, according to Thomas and Magilvy (2011), helps ensure credibility in qualitative research.

3.7.2 Transferability. Transferability denotes whether study findings can be applied to other settings. To achieve transferability, it is important to provide a thorough description of the study setting and methods. This makes it possible for other people to compare it with other contexts to determine whether there are similarities. According to Murphy and Yiedler (2010), context description should include demographic and geographic information. To ensure transferability in this study, information on context and methods have been provided. The methods employed in this research allowed a thorough description of the procedures in the study (data collection, analysis,

discussions), making it more likely other researchers could apply the findings of the study to similar cultural and social contexts.

3.7.3 Dependability. According to Guba and Lincoln (1989), dependability is very similar to credibility, and determining credibility goes a long way to ensure dependability. Dependability denotes whether another researcher can repeat the work, if not necessarily to gain the same results (Shenton, 2004). Shenton (2004 p.71) further states that dependability may be achieved through the “use of overlapping methods, such as the focus group and the individual interview” and that the study must be described in full detail so that a researcher can repeat the work in future. Consequently, great attention should be given to the research design and its implementation as well as the operational detail of data gathering on the field (Shenton, 2004). To ensure dependability of this research, both individual interviews and focus groups were used (overlapping methods), and, research procedures including design and execution of the study and a detailed description of field activities have been provided, to ensure researchers could repeat this work in the future.

3.7.4 Confirmability. Confirmability in qualitative research is the equivalent of objectivity in quantitative studies (Shenton, 2004). Confirmability means the raw data collected by the researcher through the qualitative inquiry should be available as evidence for another researcher. To ensure confirmability, all data collected including individual interviews and focus group discussions were recorded. Documents used and field notes taken are all available on request, within the scope of ethical considerations of confidentiality. Besides, all the procedures involved in translating the data collected to the final research report have been detailed for another enquirer to follow.

3.8 Conclusion

This chapter has explained how qualitative methods were applied to collect and analyse data to achieve the objectives of the study. The main data sources come from relevant health documents, key informant interviews with selected stakeholders in HTN/DM management in Ghana, and focus group discussions with patients diagnosed with and undergoing treatment for HTN/DM. The next three chapters present the study findings: Chapter four presents analysis of data on policy development, implementation and the use of evidence, Chapter five presents

analysis of data on severity of and response to HTN/DM in Ghana and Chapter six assesses the main barriers to HTN/DM control in Ghana.

CHAPTER FOUR

Policy Development, Implementation and the Use of Evidence

The three following chapters present results from the analysis of key informant interviews, focus group discussions and documentary data. Data from these sources were analysed together and the results have been presented as a whole.

The purpose of the study was to understand the health policy process for the management of HTN/DM in Ghana. The objectives of the study provided guidance and direction for the analytical process. The findings have been presented in a series of themes and sub-themes that were guided by study objectives which relate to how policies are developed and implemented and the use of evidence in the policy process. These broad themes (policy development, policy implementation and the use of evidence) incorporate sub-themes which are supported with verbatim statements from respondents and quotes from documents.

The chapter starts with a description of the characteristics of interviewees and focus group participants (Section 4.1). This is followed by a description of themes and subthemes on policy development (Section 4.2), policy implementation (Section 4.3), and the use of evidence (Section 4.4). The chapter ends with a summary of findings on policy development, implementation and the use of evidence in HTN/DM management in Ghana.

4.1 Characteristics of the sample

Three main sources of information were used in this chapter (and chapters 5 and 6): key informant interviews, focus groups and documents. Of the twenty-six key informant interviews, there were nineteen male and seven female participants (Table 4.1). Apart from ten providers who were general practitioners and senior nurses (six doctors and four senior nurses), and two administrators or health managers working at the district level, all other participants for key informant interviews were top-level and middle-level managers at the national level in their respective organizations. The sample for key informant interview comprised fifteen participants of Akan ethnicity, four Ewes, three Ga, and the remaining participants from other minority tribes. All respondents for key informant interviews had tertiary education and had worked for at least two years in their current positions.

Table 4.1.

Characteristics of the 26 key informant interview participants

Characteristics		N (%)
<i>Sex</i>	Male	19(73)
	Female	7(27)
<i>Ethnic background</i>	Akan	15(58)
	Ewe	4 (15)
	Ga	4 (15)
	Others	3 (12)
<i>Level of participants</i>	District	12(46)
	National	14(54)

Two focus group discussions (Table 4.2) were conducted at district level. The first focus group comprised six males and three females with ages ranging from thirty-eight to fifty-nine years. The second focus group was made up of five female and four male patients with ages ranging from forty-two to sixty-one years. Focus groups comprised nine participants from the Akan ethnic groups, four patients from the Ewe tribe as well as representation from minority ethnic groups in the area (Gas, Gonja, and Dagombas). All participants had at least a senior high school education. In presenting study findings (Chapters 4-6), key informants (KI) are identified numerically in no particular order to assist with confidentiality.

Table 4.2.

Characteristics of focus group participants

Characteristics		FG 1	FG 2
Sex	Male	6	4
	Female	3	5
Age (range)		38-59yrs	42-61yrs
Ethnic Background	Akan	5	4
	Ewe	2	2
	Ga	2	-
	Others	-	3
No. in group		9	9

4.2 Policy development

Managing NCDs calls for the adoption of policies based on the health context and the wider socio-economic environment. The way in which policies are developed and implemented influences subsequent NCD management, therefore the policy development process is vitally important. This section of the thesis investigated the processes and procedures of HTN/DM policy development in Ghana. Although Ghana's response to NCDs began with incipient activities in the early 1990s, it was not until 2012 that a concrete NCD policy framework became fully established. In March-April 2010, the West Africa Health Organization (WAHO) and WHO sponsored a workshop for Anglophone West Africa in Banjul, Gambia. The purpose of the workshop was to "build the capacity of country teams to develop or finalize integrated policies and action plans for NCD prevention and control" (National NCD Policy - MOH, 2012a p.11). The Gambia workshop, therefore, set the foundation and underpins policy development for HTN/DM management in Ghana. In all, nine sub-themes emerged from analysis of data on the procedures and processes for policy development. These were identification of needs, 'agenda setting', policy initiation, policy analysis, stakeholder consultation, working committees, policy drafts and validation, ministerial assent and launching.

4.2.1 Identification of needs. The findings from this research suggest that the development of policies and strategies for managing HTN/DM in Ghana is a stepwise process that begins with the identification of HTN/DM needs. Informants stated that the identification of needs takes place in two ways: First, the MOH, the institution primarily charged with policy making in Ghana, organizes a yearly review where all stakeholders come together to deliberate on issues of prime importance and assess the performance of the sector. Documentary information shows that this "health summit is the zenith of annual performance reporting in the health sector and presents a holistic assessment of the progress made or deficits in the health sector" (GHS Annual Report, 2014 p.20). This assessment normally highlights the HTN/DM needs, amongst others in the health sector. Second, informants explained that in other instances, HTN/DM needs are detected through business meetings that are held between the MOH and its agencies and development partners. They stated that strategies and policies for managing HTN/DM in Ghana have been influenced by the growing burden of these conditions, with available documents confirming the overall goal of Ghana's NCD policy framework is to "ensure that the burden of NCDs is reduced to the barest minimum" (National NCD Policy - MOH, 2012a, p.9). Key informants explained how needs are identified for policy development;

For instance, the MOH conducts the Health Summit which is the highest meeting point for all actors in the health sector and so presentations are made and the holistic assessment is made. The holistic assessment gives the performance of the health sector. So it is from this holistic assessment that the needs come out.... Sometimes too, during business meetings with agencies or development partners, needs come up [KI 3].

Another respondent stated;

In terms of policy formulation and development, first there must be a problem. We have to identify a problem. And we think of how to address the problem and that is where the policy formulation starts. Sometimes these problems come out through business meetings that we have with the agencies [KI 1].

4.2.2 Agenda setting. Policy makers then proceed to set the ‘agenda’. Informants explained that the way HTN/DM needs are identified and analysed is closely related to the subsequent ‘agenda setting’ process. This is usually carried out by the MOH and development partners. The local ‘agenda’ is influenced by the desired health outcomes and shaped by the preliminary analysis phase. The health ‘agenda’ is usually the outcome of the holistic assessment from which the needs or challenges are determined. Respondents stated that this could be the way forward for a year or period of years, and sets out details of priority areas for policy action. It also details the alternatives available and the choices to be made. Asked at what stage and how the ‘agenda’ for HTN/DM policies are set, KI 3 explained as follows;

It comes at the initial stages when you realize that there is a need to solve a problem. So at that stage, you proceed to set the agenda.So it is from this holistic assessment that the needs come out clearly and the agenda is set.

Evidence shows that the NCD burden is a crucial consideration for all planning and decision making, including the ‘agenda setting process’ (National NCD Policy - MOH, 2012a). Respondents stated that apart from the disease burden, political and economic considerations are also pertinent to this part of the process as explained by KI 1;

Usually, the disease burden is an issue because there are so many conditions which have not attracted attention because the burden is so low and already we are having problems with the resources. So why do I have to put my scarce resources into something that has little public health significance? Another factor is political.Of course there is no policy that you can divorce politics from. Now, where you have to get resources from the Ministry of Finance and it does not fall into government’s manifesto and priorities, you are bound to fail. And of course, economics is another factor because whatever you do, money is important. So you cannot come out with ideas so foreign that our economy cannot sustain or contain.

An ‘aide memoire’, the result of this process, is then signed by the MOH and development partners. The aide memoire therefore becomes an actionable document for the health sector and development partners to work with. In many instances, as explained by respondents, HTN/DM policies have been part of a broad agenda to control NCDs. The implementation of the 2014 overall aide memoire for example, included the launching and dissemination of the Nutrition Policy of Ghana (Holistic Assessment Report- MOH, 2014a p. 56).

4.2.3 Policy initiation. Key informants indicated that in principle, the MOH is supposed to spearhead all policies including those on HTN/DM. Documentary information revealed that following the decentralization process in Ghana, the MOH was entrusted with the “primary responsibility to make policy and determine priority for the health sector while the GHS was responsible for developing implementation guidelines” (GSS, GHS, & Macro International Inc., 2007, p.2). However, as informants indicated, in practice the GHS often leads this policy initiation process as most of the people with epidemiological and technical expertise on policy issues are with the GHS. This was put in perspective by KI 7 as follows;

In actual fact, the MOH is supposed to do this (initiate policies). Fortunately or unfortunately, all the technical people are with the GHS. So the policy reviews and everything originate with the GHS but normally we need to seek approval from the MOH.

Some informants stated that the practice of the GHS initiating policies must be reconsidered as it has several negative consequences for the policy development process. According to them, this practice undermine the leadership role of the MOH in policy development because the Ministry does not always take the lead as expected. This was explained by KI 2 as follows;

.....some of these policies, it is the Ministry that should engineer it. But the agencies lead this policy formulation process sometimes and when it happens like that, the MOH is called into the process at the tail end when at that time the Ministry may not be able to make much input. So the discussions we are having with all agencies is that if per the utilization data or the process and outcome data is telling us that we need to formulate some policies, the technical proposal should be done and given to the MOH and the Ministry leads.

Further probing revealed there is inter-agency conflict when the GHS initiates policy. It was stated that other agencies perceive the GHS to be stepping outside its boundary of authority when it leads the policy development process. As a result, when the GHS spearheads the formulation process and invites representatives of other agencies for meetings, personnel invited sometimes decline to

accept such invitations. A respondent noted that members of an agency (not here identified) had been heard to complain about being “dictated to” by the GHS as they believe both institutions (the GHS and their own agency) are agencies of the MOH. This was explained as follows;

When the MOH leads the process, the advantage in that is that other actors in the health sector sees that it is the umbrella body that is coordinating so they feel comfortable being part of it. Because sometimes, some agencies will say, why should GHS invite me for a meeting when we are all agencies? So there is that behaviour and it does not help in policy formulation [KI 1].

Thus, respondents believe that the MOH should show more leadership in the entire process as all agencies and stakeholders come on board when the Ministry leads because it is the umbrella body and has standing in the sector. A few respondents, however, bemoaned the fact that in other situations, policies are spearheaded by development partners who bypass the Ministry and deal with the GHS, adding that this is also an issue to be addressed.

Well, one aspect is that the development partners that we deal with sometimes go behind the ministry and deal directly with the GHS. When it is like this, certain things happen at the blind side of the MOH and so sometimes you play the catch-up to know what is happening [KI 6].

4.2.4 Policy analysis. The identification of needs for HTN/DM is followed by analysis of the problems in meeting these. According to respondents, the “how, who, what, and when” of the policy is considered at this stage of the process. Findings suggest that the issues discussed deal with understanding the extent of the problem, what is needed to address it, who might be affected and how, and which stakeholders are relevant for policy development. Respondents added that economic and political considerations as well as evidence for the policy are among the issues that are considered at this stage. Key informants shared their views;

But after identifying the problem you need to do some analysis to know what the problem is and the degree of the problem and the people that are affected. So questions like what are the things we need to do? Who is affected or what are our target groups? So the “who’s”, “how’s” and the “when’s” are considered at this stage of the process [KI 5].

You may want certain strategies but you have to look at it from the point of view of your economic strength and even politics. Does it really fit into the politics of the day...Also, it includes looking at the data or evidence available and where you are now and where you want to get to. So you need to analyse all these things [KI 3].

4.2.5 Stakeholder consultations. The next stage in the policy development process is stakeholder consultation. However, before this occurs, policy makers have to decide whether or not to hire a consultancy service to develop the policy on their behalf. This was explained by KI 4 as follows;

The Ministry has two options: either to develop the policy without any consultancy services or to hire a consultancy. Most at times the hiring of consultancy comes in when that policy is being spearheaded by either a development partner or an organization that has a vested interest.

Thus, where the policy is spearheaded by the MOH/GHS, normally no consultancy services are procured. Respondents suggested that in most cases when no outside agency (consultancy) is involved, the MOH may form a small think-tank that supports the Ministry as required. The team (think-tank) conducts a rapid scanning or assessment of current policies within global, regional, and national contexts, and drafts a plan that targets principal action areas and how these key action areas might be accommodated in the final policy. Policy makers therefore have a working document to use as a guide when planning to meet stakeholders. Policy makers then engage with stakeholders for their contribution to the policy. Respondents reported that a number of stakeholders are consulted during HT/DM policy making. Stakeholders interviewed in this study confirmed that policy makers invite them or their representatives to policy discussions, although some stakeholders stressed that only top level management are invited. One respondent commented as follows;

The technical people at the ministry do their best. They invite agencies to be part of whatever programme they are doing. I have had the privilege to work with some of these people on a few programmes.....so I know they do invite stakeholders for policy making [KI 23].

Asked how patient organizations influence HTN/DM policies, KI 26 explained as follows;

With policy, we are very active in the process and try to fight for patient interest....For example, in the past we have had formal meetings with government and managed to get duty and VAT waivers on prices of diabetic products.... And when we did that, the prices stabilized for four years.

On how patients' views are captured in HTN/DM policy development, a respondent explained that representatives of patient associations are invited;

Who are the diabetic association people? Are they not patients themselves? They are patients so if you want a representative over there, they constitute a very good source [KI 7].

On how stakeholders are invited, it was noted that the traditional method of engagement involves an invitation by the MOH of relevant institutions in one place to deliberate on the working document of the policy. However, policy makers reported that this approach has not always been helpful as the 'right' people, that is, those able to give appropriate input into the policy are not always sent by stakeholder organizations. This was explained by KI 3 as follows;

Usually, a static location meeting is conducted where we bring all of the stakeholders together and then we run through the working document of the policy. However, the challenge we have seen over the years is that if you call a stakeholders meeting, the key people that you need to come and make input in the policy do not come. They send some people whose opinions really do not matter. So when you deal with these opinions, this same stakeholders come and complain and do not support certain aspects of the policy.

Two key informants (KI 1 and KI 5) commented on other negative effects of the static engagement procedure on the policy development process. Apart from the inability of some stakeholders to talk in large crowds, it was stated that the static engagement procedure is not suitable for patient representatives who are invited. They explained as follows;

Besides, some people are not comfortable talking in large crowds but when you go to their comfort zones, it's like chasing a dog in the streets. The dog will run to the house and stand in front of the house and start barking at you [KI 1].

.....Usually, you will find 15 experts in health and one representative from the patient group. So when that person comes and meet the heavyweights around, the person is intimidated by discussions and jargons that some people will use and may not say anything. So it also gives us another idea that you do not do policy by bringing people with conflicting interests together [KI 5].

As a result, it appears that policy makers have resolved to use a different approach of engagement by going out to meet stakeholders rather than stakeholders coming to them. A key informant used the ongoing National Health Policy development engagement process to explain that this new method widens the scope of the engagement process, as policy makers are able to include more stakeholders compared to the static engagement procedure where they sometimes fail to turn up for policy engagement.

So this approach is being adopted for all policies including the consultative meetings we are having for the current national health policy that is being developed..... and I can tell you that is the best approach for policy formulation [KI 3].

4.2.6 Working committees. Following stakeholder consultations, a concept note is developed and a Core Working Group responsible for the day-to-day activities of developing the policy constituted. A Technical Working Group/Committee made up of knowledgeable and experienced people mostly outside the Ministry (with maybe a few from the MOH) may be constituted to assist in developing the policy. This was the case during the development of the overarching NCD Policy process where “a Technical Working Group (TWG) was constituted and members assigned various topics” (National NCD Policy - MOH, 2012a, p.11). In certain instances, a Steering Committee is constituted with oversight responsibilities over the Technical Committee activities and to endorse its work, as explained by KI 9;

A Technical Working Group (TWG) which is deliberately made up of people who can assist in the development process.Then sometimes we form a steering Committee who have oversight responsibility over the TWG, so whatever the TWG does, it goes to the Steering Committee to endorse or approve.

4.2.7 Policy drafts and validation. Following the work of the committees, a ‘zero draft’ is produced. When asked what a zero draft meant, KI 3 explained;

A zero draft is a document that is done..... It is good to go but you still need to validate it with a bigger stakeholder group beyond those you have consulted so that everybody finds himself or herself in and say that yes, this is what I said, this is not what we said. Can you fix this place a bit?

Respondents stated that depending on the nature of the policy, there could be first, second and sometimes final drafts of the policy as policy makers validate the draft with stakeholders and edit the policy document. In developing the National NCD policy for example, various drafts of the policy were discussed at meetings of the TWG while a sub-group was responsible for editing the document (National NCD Policy - MOH, 2012a). The draft document was initially presented to a small group of selected stakeholders from various ministries, departments and agencies of government after which a revised version was presented to a wide group of stakeholders at a consultative meeting for validation (National NCD Policy - MOH, 2012a, p.11).

4.2.8 Assent and Launching. The policy is then endorsed by the Minister and launched. The launching offers another opportunity for stakeholder involvement in the policy development process. The policy document is disseminated to all key stakeholders for them to know the content and create awareness of the policy. This usually takes place at both regional and national agency levels.

Figure 4.1 details the stages of the policy development process and indicates that stakeholder involvement takes place during three stages of the process: Stakeholder engagement stage, drafts and validation stage and at the launching stage.

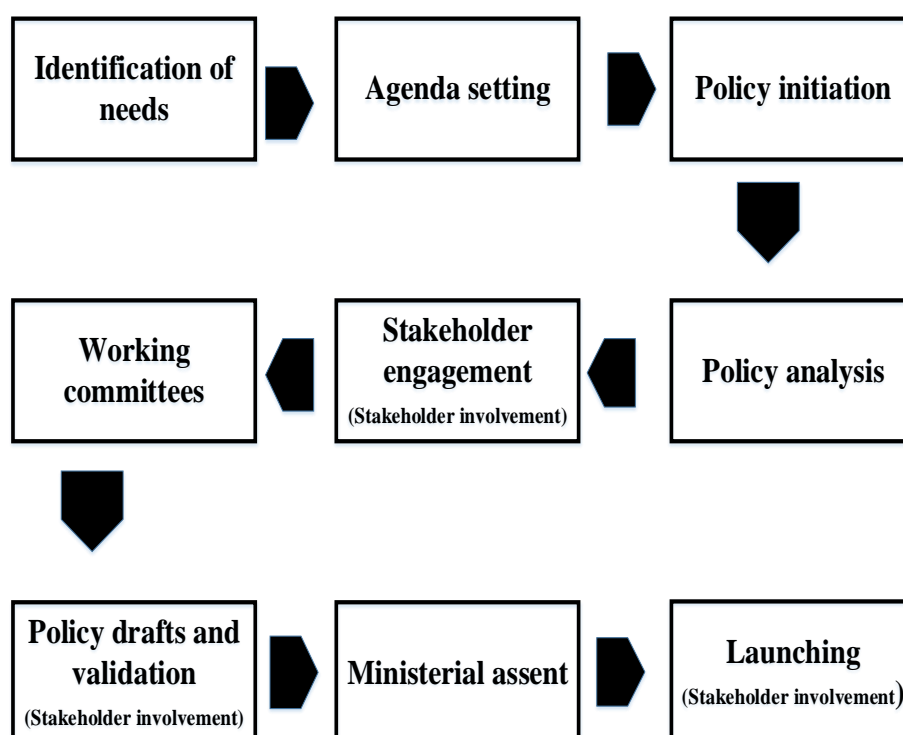


Figure 4.1. Flowchart of the policy development process

The analysis indicates that the policy development process and procedure for management of HTN/DM is short of documentary information. This is a major weakness on the policy framework that has been identified by participants in the process.

One thing that also came up is that we realized we have not been documenting processes. So, we have taken it upon ourselves that after this National Health Policy, we are going to come up with a National Health Policy Process Report. That is the “how to” of policy formulation within the context of Ghana..... We will say this is

how we do it in Ghana because it is experiential, we have gone through and know how it is done (KI 8).

4.3 Policy Implementation

This section of the thesis assessed how policies on HTN/DM are being implemented in Ghana. Four sub-themes emerged on policy implementation: institutional arrangement, implementation planning, review of policies and key issues on implementation.

4.3.1 Institutional arrangements. Key informants reported that health policy implementation has been handed over to the agencies of government, especially the GHS. This was the result of a rearrangement of the institutional framework for health delivery following decentralization of health system functions in Ghana in 1996. Thus, the mandate of the MOH ends at policy formulation as the GHS is in charge of implementing approved national health policies for the regions and districts of the country (GSS, GHS, & Macro International Inc., 2007, p.2).

4.3.2 Implementation planning. Respondents stated that a key issue in the implementation of HTN/DM policies is the preparation of the implementation plan. The GHS is the lead agency responsible for preparing the plan, with other agencies invited to be involved in this. Documentary evidence shows that the involvement of other agencies in the preparation of the plan is guided by a special framework for institutional coordination within the health sector known as the Common Management Arrangement (Common Management Arrangement - Report, 2014). Respondents stated that the implementation plan provides a road map and a guide on how policies are to be implemented. An interesting finding was that while it is recognized that policy implementation rests with the agencies of government, some informants believe that the role of the MOH in the preparation of the implementation plan for HTN/DM policies must be reviewed. They stated that a big gap is created during implementation because MOH's advisory role in implementation is too limited. One respondent explained as follows;

You know, since the Ministry's mandate ends at formulation, the agencies are then supposed to..... fix the implementation aspect and do the implementation plan and work with it. That is where the gap is, policy and practice. You see, how can the MOH formulate a policy and not do much in implementation. The implementation drops and that link is weak [KI 1].

Probing revealed that representatives of the MOH are invited to participate by the GHS when the implementation plan is being prepared. However, some respondents believe this is not sufficiently

helpful since it takes implementation planning outside the jurisdiction of the MOH, with their representatives only able to advise on implementation issues. Implementation is therefore seen by various agencies as primarily a GHS activity, with the role of the MOH restricted to monitoring the implementation of policy. Another issue that arises is the adequacy of data for monitoring. This was explained by another respondent as follows;

The implementation leaves your jurisdiction to another jurisdiction altogether and so what we do is to monitor and evaluate that implementation. But, sometimes the challenge is whether we have enough data coming out of that implementation to do proper monitoring [KI 9].

Current arrangements empower the MOH to monitor and evaluate all NCD programmes either as a stand-alone exercise or as part of the annual independent health sector review through a Monitoring and Evaluation Framework (National NCD Policy-MOH, 2012a p.24). Respondents from the MOH, however, indicate that it is difficult to discharge the monitoring and evaluation role properly without adequate data, and that it is always difficult to obtain enough data from implemented programmes to aid effective monitoring. Evidence from documentary sources puts this in perspective and points out that the implementation of Ghana's alcohol policy for example, has been difficult because local and national data are needed in order to monitor the magnitude and trends of alcohol related harms, evaluate interventions and provide reliable information to strengthen advocacy and support activities (National Alcohol Policy – MOH, 2016a p.25). It is suggested, then, that only by being involved in implementation planning can the MOH ensure that data adequate for monitoring is likely to be available.

4.3.3 Review of policies. Some respondents stated that a lack of review of policies has affected implementation efforts, and indicated that the implementation of HTN/DM policies must be underpinned by periodic reviews. Respondents believe implementation would be improved if policies are reviewed as they are being implemented;

If these policies can be translated into actions.....and as we go along we will review ourselves and say we need to top up. So the policy and strategies are good but not in themselves as papers [KI 23].

And I think most of these strategies have not been reviewed for a long time. They are laid down, four or five years, but no reviews to see whether they are working well and to make adjustments [KI 13].

Not all respondents, however, entirely agreed with this finding, but pointed out that current NCD policies are yet to be implemented. Hence, review only makes sense after implementation of the policy as explained by KI 2 as follows;

Every five years or so we need to review it but the difficulty we have is that if you have not implemented it, what are you reviewing? By rule of thumb, every five years you review. So ideally, it is when you have gone down implementing it, then you will know that this area of the policy is not appropriate. Then you can make changes..... so the question is, what proportion of the action plans have been implemented that could warrant a review?

4.3.4 Key issues on implementation of hypertension and diabetes policies. Respondents in this study believe that implementation of HTN/DM policies is a major challenge in Ghana. With the exception of tobacco policies which respondents believe have made a major impact, the remaining policies are yet to be properly implemented. Responses from respondents and documentary evidence show that several issues affect implementation efforts. According to respondents, there is a general apathy towards implementation of health policies, including those related to diabetes and hypertension. Two respondents explained the attitude towards implementation as follows;

Now, as to whether this policy is really helping or not is a tough question. What we have realized is that the policy in itself is good but it is the implementation that is the issue. Let me generalize it to other health policies because in Ghana, what we are good at is drawing up policies, strategies and annual work plans. We are very good at that. When it comes to implementation of these policies, it becomes an issue. Even the 2007 National Health Policy, we are grappling with that now. There are fantastic ideas and intentions in there but there are challenges with implementation [KI 2].

Another respondent elaborated on the failure of implementers to follow laid-down implementation guidelines and procedures as follows;

Because we are excellent in formulating policies. So in terms of that, Ghanaians are superstars. But when it is time to implement, then it goes haywire.. ...The formula was $1+2=3$ and you have been using $1+1$ to implement and you want 3 as a result, it doesn't work that way. I will give you an example, the Community-based Health Planning and Services (CHPS) policy was derived from research evidence from Navrongo Research Centre. They went so deep into writing down the steps (15 steps) that has been proven to be watertight and completely effective if you do it well as the steps tell you. But when we were implementing, we jumped over most of the steps and for a long time it was not working. Then people said oh, let's change the policy because it's not working, it's not relevant now. The world is dynamic as this policy was introduced in the 1900s so why are we bugging ourselves with 15 steps and 6 milestones?

Meanwhile, countries that came to pick it from Ghana such as Ethiopia have been able to successfully implement it studiously using the 15 steps and have now bypassed us [KI 8].

Probing revealed that a number of issues are responsible for the slow progress of implementation of HTN/DM policies. Issues raised include over-concentration of implementation effort on communicable conditions to the neglect of NCDs, inadequate resources, overemphasis on clinical interventions, a lack of partnership and the need to reconsider implementation effort in its entirety. First, respondents suggested that support received from Government and development partners is ring-fenced for communicable conditions such as malaria, HIV, TB and diarrheal conditions. This, according to respondents, is because communicable conditions are seen to have immediate public health implications, especially when compared to NCDs such as HTN/DM. Besides, development partners provide little or no assistance for the management of HTN/DM (National NCD Strategy - MOH, 2012b, p.18). The over-emphasis on communicable conditions therefore affects the implementation of policies as more support is received from government and development partners for controlling these conditions with little attention to NCDs. A respondent [KI 6] averred as follows;

There are certain conditions or diseases that are the focus of the world. These include malaria, HIV/AIDS, and TB. So you have a lot of support and because of that, the attention of everybody moves to that direction.So for instance, we get support from Global Fund and Global Alliance for Vaccine and Immunization (GAVI), who are so interested in immunization and vaccination issues. So there is a focus on these conditions because of international attention, the reason being that they are communicable diseases that can spread among populations very rapidly and thus have serious public health implications. But when you come to NCDs, I don't know whether it's this Sustainable Development Goals (SDGs) that we are going to focus on them because I have not seen any funding set aside to combat these conditions.

Another respondent stated that;

Because that is what the international community will support. For example, when Ebola came, you could not say you were in the US so you could not be affected. So that is an international situation but then when you come to the NCDs, it's different and individual in nature [KI 9].

Apart from an overemphasis on communicable diseases, another issue that participants believe has affected implementation efforts is that the greatest emphasis is placed on clinical management. This is supported by documentary evidence which indicates that implementation and response effort to NCD management is predominantly clinical in nature (National NCD Strategy - MOH, 2012b, p.15). Findings suggest that the little budgetary support available usually goes into clinical

management as government believes this produces more visible results than preventive interventions. Respondents stated that implementation effort is concentrated on treatment because government is focused on investing in short-term programmes that yield visible results. Consequently, although preventive interventions are part of policies and initiatives (National NCD Strategy-MOH, 2012b, p. 19; National NCD Policy-MOH, 2012a, p. 13), they are hardly implemented.

You see, I think a lot of the funding is given to clinical management.... that's what people are interested in because that's where you buy drugs and then they see that you are doing something and not much about prevention. So it's like wait, when you get sick you come [KI 2].

This issue also came up in focus groups with patients indicating that over-concentration on clinical aspects means one hears about HTN/DM mostly after attending the hospital for treatment.

It's like you do not hear much about diabetes unless you get sick and come to the hospital. When you fall sick and come, then they tell you about it but that time might be too late so I think if they can do more education for people to know about it, it will be better [FG 1].

However, a few respondents did not fully agree with this assessment and believed that implementation efforts in prevention were taking place but were much less visible than the clinical aspects, as explained by KI 8;

Attempts are made at both (clinical and preventive) but sometimes it is more visible what the clinical aspects do. For example, if there is a screening programme, it's going to be more visible than me going to a church to talk about risk factors of HTN/DM. So it's difficult to assess and it is one of the problems I personally recognize with the programme (NCD Control Programme) which is that even though a lot of activities are going on, the central point to know that oh this person has done this, this activity is going on here, is missing.

The most common issue influencing implementation of HT/DM programmes identified by respondents was funding. They believe that budgetary allocation of programmes is woefully inadequate and cannot support implementation of HTN/DM programmes. It has also been noted in the NCD Strategy document that a major threat to progress is the inadequacy of funds to support implementation of policies (National NCD Strategy - MOH, 2012b, p.18). Respondents shared their views;

The question is not about the policies. It is about the implementation. The structures are there. When you went to Disease Control, they were able to tell you to contact this

person or that person. So down to the regions and the districts we have the structures. And we have all the health facilities with the equipment to do everything. But there needs to be funding to be able to carry these things through because the commodities for testing or screening are not for free. For example, I am telling you about education. You need to do flip charts for demonstration and all this cost money. So if you have government money given to the sector and it is spread so thin, what can health personnel do? [KI 3].

The policy had a lot of things which had to be done. And the strategy also spelt out specific actions which needed to be done. The truth is that implementation has been particularly difficult because of funding [KI 8].

Some respondents indicated that implementation is only possible through inter-agency collaboration and coordination. While the GHS is the lead agency, all agencies are required to partner the GHS in implementing HTN/DM policies. Thus implementation has stalled because of a lack of partnership and intersectoral collaboration, with the GHS the only body grappling with implementation of policies. Evidence from documentary data affirms the relevance of inter-sectoral collaboration to implementation efforts with the establishment of a collaborative framework mechanism among stakeholders (Common Management Arrangement Report – GHS, 2014, p.8). As part of the implementation framework of the Health Sector Medium-Term Development Plan 2014-2017 (HSMTD II) underpinned by the National Medium Term Development Policy Framework (2014-2017), a framework mechanism, known as the Common Management Arrangement (CMA) was established to address the collaboration arrangements which needed to be in place for the implementation of the policies outlined in the HSMTDP II (Common Management Arrangement Report – GHS, 2014). The purpose of the mechanism is to “spell out modalities for effective coordination and collaboration of all processes and activities within the health sector and describe interrelationships, roles and responsibilities within the health sector” (Common Management Arrangement – GHS, 2014, p. 8). Although the CMA mechanism requires “all sector partners and other stakeholders to undergo a peer review exercise to assess their level of compliance” with the principles for collaboration and coordination spelt out in the mechanism, not much has been achieved (Common Management Arrangement Report – GHS, 2014, p.7). Respondents believe that ineffective collaboration and partnership means implementation is now a GHS activity rather than a stakeholder activity. A key informant stated;

So what it means is that, the implementation of policies should be looked at again. It should not be seen as one agency’s headache. It should be seen as a holistic and national issue that all other agencies including the private sector must take seriously and get on board. We are just having a consultative meeting with Ministries, Departments and Agencies and it’s on the 2007 National Health Policy. You can tell

straightaway that ministries are not working together. For instance, if everything were to be well, Ministry of Information should be carrying out some promotion using their information service department on HT/DM and MOH should play a major role by preparing the content of that information. So inter-sectoral collaboration is not happening. So what I can tell you is that the ‘intra’ is not happening and the ‘inter’ is also really not happening [KI 2].

In general, respondents believe the most important issue in Ghana’s fight against HTN and DM is not about policy. For policy makers and other respondents, a strong policy framework has been established for the management of HTN/DM and other NCDs. The main challenge, however, is implementation of policies. Others suggested the need for a reconsideration of the whole implementation framework of NCD management in Ghana. Respondents shared their views as follows;

As part of our programme, NCD is a national programme. We have the policies, the strategies and the action plans. The unfortunate thing is that the resources to implement the policy is what is lacking [KI 14].

I am not very sure that the problem really rests with policy. To me, it is the implementation. The implementation is infested with a lot of issues. I think we probably need to look at the whole implementation procedure again and see how best to implement the policies. The first challenge is financing and second, attitude of some of us (health staff) as well [KI 10].

Table 4.3 shows key comments on the implementation of HTN/DM policies with most respondents (58%) suggesting the need for more resources for implementation of policies and programmes.

Table 4.3.

Key comments on implementation of diabetes and hypertension policies

Key comments	No. of Interviewees	% of Interviewees
Agencies are not resourced enough for implementation	15	58
Overemphasis of implementation effort on clinical aspects, not preventive	13	50
Implementation of policies must be looked at again	12	46

There is a gap between policy formulation and implementation	8	31
Hypertension/Diabetes policies, strategies and action plans are in place, but implementation is a challenge	8	31
Only GHS is saddled with implementation, all agencies must help	8	31
Overemphasis on communicable diseases make implementation of NCD policies difficult	6	23

Source: Interview Data

4.4 The Use of Evidence

The ability to produce and utilize quality and scientifically-based evidence is a crucial aspect of effective policy development and implementation. Robust evidence, therefore, occupies a critical position in the policy framework for the management of NCDs. This section of the thesis assessed how information is accessed and utilized in the development and implementation of HTN/DM policies. Analysis of documentary and interview data revealed that evidence for policy development and implementation comes in various types and sources. According to the findings, five sources of information underpin NCD policy development and implementation in Ghana. These include;

- Epidemiological/routine health facility data
- GBD estimates
- Surveys
- Results of monitoring
- Good practice evidence for interventions

Policy makers, however, added that the most utilized source of information for NCD policies is routine epidemiological information, and in most cases information from surveys and GBD estimates.

4.4.1 Epidemiological/routine health facility information. Epidemiological information for policy making in Ghana involves routine hospital data collected from all facilities in the referral system. This is usually aggregated at health facility level and comes in the form of trends and patterns in morbidity, mortality and other forms that may be needed from time to time. This indicates annual trends in mortality and morbidity of key NCDs with emphasis on year to year variability. Ghana's NCD policy provides that decisions and implementation will be influenced by routine epidemiological information as "routine morbidity and mortality data will be monitored..... with accurate, complete and timely health information on morbidity and mortality of NCDs being routinely collected" using the national health information system (National NCD Policy-MOH, 2012a p.23-24). Key informants affirmed that routine facility data is an important source of information for policy development and implementation. Respondents explained as follows;

We use routine data and surveys as evidence for making policies. It is the holistic assessment that gives us the routine data. Those ones are regular and periodic but we aggregate them into a yearly holistic data so that gives us some trend over the years [KI 3].

And over the years we have seen some increase in these conditions and that is why we came out with the strategy. So it is mostly epidemiological statistics that we gather to inform us of how things are going [KI 7].

Generating routine epidemiological/facility information. The MOH requires the GHS to provide reports on all routine services including health services data from health facilities in the country. To accomplish this task, the District Health Information Management System (DHIMS) was adopted. Documentary data show that following a review of health information systems, the DHIMS was a collaborative effort between the GHS and the University of Oslo to develop comprehensive software for generating reports on the activities of district/municipal health directorates and health facilities at all levels of service delivery. The review revealed the existence of scattered information systems that did not communicate with each other, resulting in information redundancy, duplication and inconsistencies (GHS Annual Report, 2007). Information for managing NCDs is therefore "routinely collected within the context of the DHIMS and e-health" (National NCD Policy - MOH, 2012a, p. 24). Key informants added that the DHIMS is a platform used to capture health data at the facility level which can be accessed by the facilities, the district or municipal health directorate as well as national users of information. Thus, all service

delivery points generate essential routine service data on utilization, morbidity and mortality, and these form the basis of decision making on NCDs. Respondents shared their views on the DHIMS;

The DHIMS is an online platform developed for reporting health information to the MOH. All facilities in Ghana use the DHIMS to aggregate data to the national data. Facilities in Ghana are assigned some datasets in the DHIMS based on services they provide [KI 21].

The structures are there for the Ghana Health Service to pick up some of these things. If you know about DHIMS, data is captured directly by DHIMS. We have the Health Information Officer who is supposed to be capturing all the data directly. So all the hospitals do that and then it goes to the District Health Directorate. The hospitals will enter data but that is aggregated as the district data or information which is then forwarded to the region [KI 20].

The DHIMS is accessible in all districts of the country and can be used not only to transmit data but also for routine data analysis. Presently, access to the DHIMS software is given to all staff in the district/municipal health directorates and health facilities with the requisite capacity, as secure users (National NCD Policy - MOH, 2012a).

Management of routine epidemiological/health facility data. A Centre for Information and Health Management (CHIM) has been set up to collate, report, analyse and manage all issues relating to information in the Ghanaian health system. Routine health facility information from health facilities is managed by the CHIM under the supervision of the Policy Planning Monitoring and Evaluation (PPME) unit of the MOH (National NCD Policy - MOH, 2012a). The CHIM has upgraded the DHIMS, to DHIMS-2 (National NCD Strategy-MOH, 2012b p. 33), an online platform for a more accurate reporting, with “over 10,000 users currently on DHIMS-2” (GHS Annual Report 2016 p. 12). The upgraded version, DHIMS-2, “allows data entry at multiple entry points in each district with a consolidation module at the regional and national levels” (GHS Annual Report, 2008 p.16). The CHIM has also developed the Health Information Exchange, a new health sector reporting portal to improve reporting of information in the health system, with a “third edition of Standard Operating Procedures on Health information” already completed and ready for dissemination (GHS Annual Report, 2016 p.12). The role of the CHIM in information management for decision making also came up in interviews. The purpose of the CHIM was explained by KI 21 as follows;

Data in Ghana has always been a problem and the MOH acknowledges this fact. To sort this out, the Ministry created the CHIM under the Policy Planning Monitoring and Evaluation unit to coordinate and manage information in the health system of

Ghana.....The main aim of the CHIM is to serve as an information hub for the health sector in Ghana by collecting and collating health information for planning and decision making.

Availability of epidemiological/routine facility information. Although respondents admitted that the use of the DHIMS has improved access to health facility data, respondents generally believe that access to reliable data for HTN/DM policies and management is still a big challenge in the Ghanaian health system. Analyses of reports suggest that information on NCDs is generally scant because of “data availability and data management issues” (GHS Annual Report, 2011 p.49). Key informants added that although routine epidemiological data is managed by the CHIM through DHIMS, getting information for programmes is still a big challenge. For example, it was found that getting information for the Cross Programmatic Efficiency Programme which brings all the control programmes (such as Malaria Control Programme, NCD Control Programme, TB Control Programme etc.) together for efficiency in terms of monitoring systems, supply chain systems, etc. has been a big challenge.

Information from documentary sources shows that availability of routine epidemiological data is characterized by incompleteness (National NCD Policy - MOH, 2012a, p.18). Besides, data availability is affected by timeliness of the data (GHS Annual Report, 2014). To address these issues, the GHS “organizes data verification and provides national support for the regions as monthly feedback on regional performance with regards to data completeness and timeliness have been published and shared with the regions” (GHS Annual Report, 2014 p. 144).

Quality of epidemiological/routine facility information. Key informants identified problems with the quality of information available for HTN/DM policy development and implementation. Interviews revealed that certain mechanisms have been put in place to ensure that data that is fed through the DHIMS and made available to the MOH is as error free as possible. First, there is a data validation team at the facility level which scrutinizes and interrogates data before it is entered into the DHIMS. Second, at the district or municipal level, there is a validation team that validates the data before it is certified. In addition, the DHIMS software has an in-built capacity to detect certain types of errors in data that is fed to it. This was explained by KI 22 as follows;

We do data validation at the facility level. We have data validation teams at the facility level and the district level. They scrutinize the data and when they see any questionable data, they go to the source to check. Also, within the DHIMS, there is an

in-built validation system that streamlines the data. For example, when a disease that affects women is entered for men, the DHIMS will detect this error.

Despite these mechanisms to ensure that data captured is of high quality, several challenges were found. The non-availability of health information officers in many districts obstructs the accuracy of information (GHS Annual Report, 2007 p. 69) as well as delay in implementation of the DHIMS in some districts because of lack of funds and logistics including computers (GHS Annual Report, 2007 p.69). A “chronic shortage of data capturing tools” has been reported in some regions and this has a “negative impact on the quality of data reported from the region” (Holistic Assessment Report – MOH, 2014a p.42). During interviews, respondents stated that data quality is a major challenge in the Ghanaian health system because of the presence of errors in health facility information. Probing further on how such errors are detected given the series of mechanisms carried out to ensure accuracy of data, respondents explained that this is evident just from comparing the same data in two different reports. In other instances, their experience and intuition becomes very important in this regard;

We have problems with data quality in Ghana. When you look at some of our reports such as the Holistic Assessment of the Health Sector, it is a report that is written every year and as the name connotes, gives a holistic view of the health sector. Just by looking and comparing, you can detect common mistakes in the data provided. For example, you can find some indicators, if it is let's say 2010, 2011, 2012, when you come to 2013, the 2012 figure that is brought forward changes. It means there is an issue with data quality. In some instances, you will find a 2012 figure different from the 2012 figure in another report. So it is clear that we have data quality issues [KI 7].

With our experience in the health sector, sometimes when you see the data, just by looking at it you can see that no, this can't be right. I need to drill down a bit and interrogate this figure. So that is done just by intuition. Looking at the data and of course with your background you can say no I think this is questionable [KI 5].

Documentary evidence affirms data quality challenges, attributing this to apathy on the part of some health managers to use the DHIMS since “there is low commitment among some senior managers at the district, regional and national level in supporting the use of the DHIMS data for reporting and decision making, posing a challenge to improving the data quality at all levels” (GHS Annual Report, 2014 p.15). When asked how the quality of information for HTN/DM policies can be improved, respondents suggested that at the national level this is very difficult and very little can be done. However, respondents believe that effort should be made at the facility level where data is captured and entered. Also, strengthening certain key institutions could help improve the quality of data;

You know, let's say facility A is reporting institutional mortality of 20 and that is put into the DHIMS, you at the national level, how will you know that this 20 is true or not? Unless, you have cause to suspect that it looks as if this figure is too huge. Can we look at it? But if the figure is falling within the normal range, you might not eyeball it too much so that is why some of the figures fall through the cracks [KI 7].

You see, we have some regulatory agencies who per their mandate can help. For instance, the Health Facility Regulatory Agency (HeFRA), they license facility and personnel for both private and public health institutions. So clearly, there are some standards that must be followed. The National Health Insurance Authority also does credentialing now. They used to do accreditation but that has been taken over by HeFRA. Credentialing also talks about some standards of practice, so when you are going overboard with your figures, they can constitute a clinical audit team to come and audit your facility [KI 3].

A few measures have been embarked upon by the GHS to improve the quality of data captured. First, steps have been taken to secure funding to support data management systems as a “proposal for support for data quality improvement was sent to Global Fund” and was approved (GHS Annual Report, 2014 p.114). Secondly, the GHS is collaborating with other agencies to streamline data systems and institute mechanisms to facilitate the quality of data. A key activity was its collaboration with the Christian Health Association of Ghana (CHAG) on “developing a guideline for conducting data verification” as well as “coordinating the efforts of partners involved in data quality improvement activities to ensure standardization of procedures and outputs” (GHS Annual Report, 2014 p. 114).

Reporting of epidemiological/health facility information. On how information is reported, findings suggest that this depends on the type of report being submitted as several reports are generated. Information is reported daily, monthly, bimonthly, quarterly or yearly. When data is captured, it is reported as an electronic document on the DHIMS. During the mid-year reviews usually carried out by the GHS, both printed and electronic copies of reports are submitted on all activities of the first six months of the year. This was explained by KI 22 as follows;

Mid-year you submit both electronic and physical reports on activities of the first six months of the year. So you put together or summarize your data and make some meaning out of it.... Apart from that, another means is the mid-year and annual reviews which we submit to the GHS.

Probing on what is captured in these reports revealed that health facilities report on all activities undertaken. However, for HTN/DM, information on outpatient attendance and inpatient admissions are usually collected. Data on morbidity and mortality are captured in these reports as

‘events capture’, that is, as and when they occur. Specific forms of information may be requested and include top ten causes of mortality and morbidity and top 10 causes of admission. Key items captured on the DHIMS were described (KI 21).

In general, we report on everything we do on the DHIMS. Key things that we capture include, Bed utilization, statement on inpatients, statement on outpatients, OPD morbidity which details new cases that we pick of all conditions that are reported. This is where HTN/DM data are taken and fed through to the district health directorate and then to the national database. The data on new cases is entered as event capture. So cases of HTN/DM are detected at the facility level and captured via the DHIMS system. So once you enter, it is available to the facility level so management of the facility can use it. It is also available to the District Health Directorate for planning as well as the national level. Mortality is also entered or captured as events capture, that is, as and when it happens.

The findings show several challenges in reporting of health facility information for policy development and implementation. First, there is under-reporting as routine hospital data from teaching hospitals are usually not captured (National NCD Strategy - MOH, 2012b, p. 18; National NCD Policy - MOH, 2012a, p.33). Second, there is evidence of managerial apathy at district and regional levels in supporting the use of the DHIMS data for reporting and decision making (GHS Annual Report, 2014 p. 15). A shortage of data capturing forms such as inpatient morbidity and mortality registers means various facilities in certain regions are not capturing the required data as efforts by the CHIM “aimed at getting the MOH to print the registers has not been successful” (Holistic Assessment Report-MOH, 2014a, p.42).

4.4.2 Global burden of disease estimates. The findings also affirmed the importance of the GBD estimates to the formulation of policies in Ghana. The projections from the IHME and the WHO are a crucial aspect of evidence used for decision-making on key policies and guidelines on HTN/DM management. According to one key informant, the burden of disease information from the IHME underpinned the development of Ghana’s NCD policy. The respondent (KI 1) commented as follows;

.....And even the Institute of Health Metrics and Evaluation (IHME), some of their projections also looked at Ghana having the NCD burden and current projections from the IHME suggest that HTN and DM burden are becoming larger and larger. So clearly, there was the need to do something hence the policy.

Documentary sources indicate that the NCD Control Programme played a key role in the in-country GBD study, led by the PPME Unit of the MOH, with various committees being constituted to

review studies to provide information on burden of disease in Ghana (GHS Annual Report, 2016 p.74). To underpin future development and implementation of policies and programmes, “a draft report on BOD studies has been submitted after series of meetings” with capacity building programmes in NCD control and field epidemiology ongoing for MPH and MPhil students of the University of Ghana (GHS Annual Report, 2016 p.74).

4.4.3 Surveys. Informants pointed out that surveys are an important source of information for policy development. Although surveys are conducted on HTN/DM and other NCDs under the aegis of the MOH, in certain instances surveys conducted by other bodies (such as the Ghana Demographic and Health Survey-GDHS) provide information. The GDHS collects nationwide data on some NCD risk factors – tobacco, alcohol, physical activity, fruits and vegetable consumption and (for women only) body mass index as well as on blood pressure and biochemical measurements such as blood glucose, cholesterol and triglycerides (National NCD Strategy - MOH, 2012b, p. 34). The MOH plans to monitor these in a national survey every five years – preferably in the intervening years between the GDHS and use this information in the development and implementation of programmes on NCDs (National NCD Strategy -MOH, 2012b, p.34).

Information from the STEPS Survey has also been used. The Ghana STEPS Survey collected data on demographic characteristics and on behavioural risk factors (tobacco use, alcohol intake, physical activity and diet), blood pressure as well as biochemical measurements to measure lipid profiles and fasting blood glucose. However, the STEPS Survey in 2006 was based on a sample of 2662 from the Greater Accra Region alone, with the remaining nine regions not included. Despite this, policy makers indicated that the STEPs Survey was very crucial in developing the overarching NCD policy.

Then the survey data, for example, the Ghana Demographic Health Survey also give evidence for us to work with [KI 5].

Of course there are also surveys that are carried out. Let me say the GDHS which is carried out every 5 years. That one we do not do it but it is a useful source of information on these conditions. The STEPS survey is also a good guide for us as well and was very useful when we were formulating the NCD policy [KI 1].

4.4.4 Results of monitoring. Monitoring reports of the MOH provide useful information for policy development and implementation of programmes. Respondents reported that rapid

monitoring or assessments in the communities are sometimes conducted, for information to start policy development or implementation. A respondent [KI 8] explained as follows;

Also, the rapid assessments, sometimes when we suspect something we go to the field and do some monitoring and those monitoring reports also help. These are done in the communities.

Documentary evidence shows that for effective implementation of HTN/DM programmes (and other NCDs), the NCD Control Programme staff usually undertake such monitoring visits in communities. In 2011, the “NCD Control Programme undertook monitoring visits to the Greater Accra Region in March, the Western Region in June, and the Volta region in August (GHS Annual Report, 2011 p. 48).

4.4.5 Good practice evidence for interventions. According to a respondent [KI 6], best practice evidence is equally important in policy development and implementation.

And then best practices are evidence. For example, throughout the world, we know that vaccines are very cost effective. So if you have evidence like that, then it influences your policies and strategies.

According to the findings, the institutional framework for prevention and control of NCDs in Ghana was planned based on good practice evaluation from countries within the African context. Documentary data shows that;

“in order to ensure that NCDs are placed high on the national agenda and to highlight their negative impact..., a multi-sectoral Steering Committee on NCDs will be established, as is in Togo, Tanzania and Kenya” (National NCD Strategy, MOH, 2012b, p.21). Among other tasks, the Committee “will review national plans to tackle NCDs and assess progress being made towards achieving set objectives, advocate the preparation of operation plans by each sector to reflect how NCDs impacts on that sector and advocate the appointment of NCD liaison officers within the various Ministries as appropriate” (National NCD Strategy - MOH, 2012b, p.21).

4.5 Incorporating Evidence in Policy Development and Implementation

From key informant interviews, it was found that decisions and programmes in HTN/DM prevention are based on information available to policy makers. Policy makers explained that

available evidence influences and underpins both the formulation and implementation of policies, since it is upon this data policy options are chosen. This was explained by KI 4;

We justify the new approaches that we suggest by looking at the evidence. For example, we are saying that 30 percent of the adult population have one NCD or the other including DM and HTN. This is a figure that speaks volumes and so you can suggest a lot of policy actions out of this. By incorporating this in your policy statement that this is where the problem is... and that we feel that ABCD must be done to stem the tide. And so we are speaking from the fact and not just out of nothing.

Documentary information also reveals policy development and implementation for the management of all NCDs is underpinned by evidence available. For example, in the development of policies, the first guiding principle in Ghana's overarching NCD policy is the prioritisation and adoption of policies and interventions informed by credible scientific and historical evidence (National NCD Policy - MOH, 2012a, p.10). As well as for overarching NCD policies, specific risk factor policies are informed and developed based on available evidence. For example, Ghana's policy target of working to "reduce the average daily consumption of salt from the current level of around 9 g daily to WHO recommended daily level of 5 g per day or less by the year 2025", was informed by research evidence from a 2003 study conducted by He and MacGregor (National NCD Policy - MOH, 2012a, p.18). In addition, Ghana's Alcohol policy seeks to "address the specific needs of target groups based on sound scientific evidence" (National Alcohol Policy – MOH, 2016a p.15).

Apart from policy development, implementation guidelines and frameworks are also based on evidence. For example, the first guiding principle of Ghana's NCD implementation strategy is based on giving priority to evidence-informed policies and interventions which have been proven to be scientifically and historically productive (National NCD Strategy- MOH, 2012b, p. 19). Findings show that the recommendation by the MOH of reducing the number of hours for watching television to three hours per day (National NCD Strategy - MOH, 2012b, p.26) was informed by research evidence from a meta-analysis conducted by Grontved and Hu (2011), who concluded that for every two hours of television watched daily, the risk of diabetes increases by 20% while that for CVDs increases by 15%.

4.6 Summary of Findings

This chapter presented findings on three broad themes namely policy development, policy implementation and the use of evidence. The findings show that policy development is a stepwise

process that begins with an annual scanning of the health environment to detect pressing HTN/DM needs. However, it was found that once needs are identified, there is no clear-cut procedure on policy initiation as MOH or GHS can both initiate the process. The health needs are then analysed and an aide memoire detailing the options available for addressing the identified needs drawn up and signed by government and development partners. The traditional method of engaging stakeholders has been a top-down approach where stakeholders are invited and engaged by policy makers. This approach has proved to be unhelpful and policy makers now plan to go to stakeholders instead of stakeholders coming to them.

The study revealed that once policies are developed, implementation is the responsibility of the service agencies especially the GHS. One important activity identified in implementation is the preparation of the implementation plan. Findings suggest that although implementation is for the agencies, the MOH wants to play a more active part in implementation as they believe there is a gap between policy development and implementation. Key issues found to affect implementation include a lack of funds and resources, over-concentration of implementation effort on communicable diseases, over-concentration on clinical aspects, and the need to re-examine existing mechanisms on implementation of policies.

Routine epidemiological/facility data, survey data, GBD estimates, monitoring reports and evidence from best practices have underpinned policy development and implementation in Ghana. Epidemiological data are managed by the PPME of the MOH through the CHIM and reported using the DHIMS platform. However, the availability and quality of evidence for policy development and implementation is affected by several challenges including under-reporting, apathy by some regional and district managers regarding the use of DHIMS for decision making and reporting, human resource challenges and financial and logistical constraints. In the next chapter, findings on the severity of and response to HTN/DM in Ghana are presented.

CHAPTER FIVE

Views on the Severity of, and National Response to the Problem of Hypertension and Diabetes in Ghana

As outlined earlier in this thesis, effective control of NCDs in Ghana requires various stakeholders to reach a good understanding of the current challenge in this area. This will not only help them to perform their roles in managing these conditions, but will also contribute to the identification of areas where important linkages and coordination are needed for effective national response. This chapter aims to assess how key informants understand and respond to the problem of HTN/DM in Ghana. The chapter also details the main activities being undertaken to respond to HTN/DM needs in Ghana.

The chapter begins with a description of themes/subthemes on how study participants understand the HTN/DM challenge in Ghana (Section 5.1). This is followed by a description of the themes/subthemes on policy response (Section 5.2.1) and programmes and service delivery activities (5.2.2). The chapter concludes with a summary of the key findings of the chapter.

5.1 Understanding of the Hypertension and Diabetes Situation

In general, responses suggest that stakeholders are aware of, and appreciate the challenge posed by HTN/DM currently in Ghana, indicating that urgent public health action is needed. However, in several instances, some respondents accused policy makers and national health authorities of not understanding the enormity of the situation and indicated that not enough had been done to manage it. Three main themes emerged from analysis of responses from policy makers, providers, partner organizations and patients: appreciation of the NCD challenge, comparison with infectious diseases, and the prevalence of risk factors. As responses are reported according to the informant groups, direct quotes are not attributed to individual informants to ensure confidentiality.

5.1.1 Appreciation of the hypertension/diabetes problem. Interviews with policy makers suggest they are under no illusions about the high burden of NCDs in Ghana and recognize the need for urgent action. Policy makers believe the introduction of plans (both short-term and long-term) to address the rising disease burden is an indication of their appreciation and understanding of the severity of the HTN/DM situation. The institution of appropriate programmes and

departments to handle NCDs were stated as relevant steps towards arresting the NCD situation in Ghana. When asked whether policy makers understand the HTN/DM situation in Ghana, One respondent stated;

Sure, otherwise we would not have included it in our medium term plans. And we would not set up a whole programme and department to handle NCDs. Remember, the NCD Control Programme is part of the disease control programme within the GHS.

Health managers interviewed believe that the incidence of HTN/DM in health facilities is increasing. Through their reports (such as mid-year and end of year morbidity and mortality reports), they are able to track the extent of mortality and morbidity in their facilities and communities. Simple morbidity and mortality charts are used to understand the situation and to plan appropriately by allocating more resources to these conditions in their communities where possible. This was explained by one respondent as follows;

Based on last year and this year figures, I think there is some increase in hypertension cases. Yes, malaria is there and certainly hypertension is in the top 10. So as you can see from this table on my computer, this is 2016 HTN is 5th on the top 10 causes of admission. Hypertension is also 5th for causes of death in the municipality. For OPD admissions, hypertension is 5th as well. So when you are planning, obviously you need to take these things into consideration especially in terms of allocation of resources.

Health providers (doctors and nurses) interviewed were certain that Ghana's HTN/DM challenge has reached epidemic proportions. To them, these two conditions are among the most commonly reported and treated in health facilities. Responses were similar in both urban and rural settings. A number of providers stated that new cases reported every day in health facilities, coupled with a large number of existing cases is a cause for concern. Two providers commented as follows;

Each and every day, we tend to see a lot of patients with HTN/DM. Those with controlled and uncontrolled and those who are not compliant, those who have defaulted for one reason or the other, those who have discontinued treatment and resorted to all kinds of other treatments, native and traditional medicine and all that.

If I see about 20 or 30 patients in a day, out of these patients, maybe about five of them will be newly-diagnosed diabetics or hypertensive cases, and the rest, say about ten or fifteen of them will be follow up cases and the rest of the cases may be other miscellaneous cases not related to hypertension and diabetes.

Some providers, however, did not believe policy makers and health authorities fully understand or appreciate the height of the situation. From their perspective, not many public health interventions are being implemented on HTN/DM. This was explained by a provider;

So the policy and its implementation is very porous. That is why we are not doing a lot of outreaches. A few churches, NGOs and some few rich philanthropists organize screening programmes on holidays. At least they help treat a lot of people with these diseases. I don't see anything from the public health unit. So it is our public health people and the MOH that are failing us. So these are the issues; 1. The understanding is not there 2. The awareness is not there 3. Propaganda is not there.

Partner organizations had their own perspectives on the HTN and DM situation, indicating resources being expended for treating these conditions is of concern. Some respondents were of the view that the increasing claims on health insurance could partly be attributed to the rising cases of NCDs in general and HTN/DM in particular. They added that these conditions require long-term treatment, posing a serious threat to the very existence of the social health insurance system of Ghana. A respondent explained;

In our department, we are able to track which conditions cost us the most but even aside that ... we all know and the evidence is showing that these conditions are increasing. We are seeing a lot of HTN/DM cases and CVDs are generally increasing as well..... In terms of cost and you know it is expensive to treat and it is chronic. The person is there and needs to be managed till the person dies. So as more and more people get these diseases, it means that our claims cost will be going higher and higher and that affects the sustainability of the scheme.

Some respondents from partner organizations also stated the situation is far more serious than usually reported. To these respondents, policy makers and health authorities are not treating the situation with the seriousness it deserves in terms of their attitude and response. It was indicated that the number of people suffering from these conditions in the general population means that a concerted effort in terms of personnel and facilities to combat the disease should be of prime concern. However, at the moment this is not the case. One respondent commented;

Here, we are not doing much because you have a population of 26 million, 3 million of them are diabetics and not much is happening. The whole country has 8 endocrinologists. There is no training going on anywhere and there is no centre for diabetes complications.

It is likely that the general understanding in the community of HTN/DM is low. This was shown in some of the responses from the patient focus groups. In focus groups, patients were asked about how they understand their conditions. This was not meant to measure whether patients have an

appreciation of the enormity of the HTN/DM situation in Ghana, but to have an idea of patients' knowledge of their condition as this is essential for self-management. What was clear about patients' understanding of HTN/DM was that they had limited knowledge prior to being diagnosed. In most cases, patients were diagnosed when presenting other conditions to health facilities for treatment. Patients believe education is limited even after diagnosis. A patient from FG1 shared her experience;

My situation was a bit worrying at the beginning because they did not explain to me at the initial stages what led to my condition and what I should do. So as I continued thinking about the condition, I became restless and that worsened my situation. In my case as well, my mother was diabetic. So she told me that it could be from the pains I experienced during childbirth or it could be hereditary as she is hypertensive as well. So it was my mother who gave me the initial education that I needed. Later, I thought that this education should have been given to me at the hospital.

5.1.2 Comparison with communicable diseases. Respondents revealed their understanding of the HTN/DM situation in Ghana by comparing it to communicable diseases. It was stated that the time when communicable conditions such as malaria, TB and respiratory tract infections were the main health problems facing the country is past. Documentary evidence puts this in perspective, CVDs were responsible for 9% of all deaths in 2003 but rose to 14% in 2008, being the fourth most common cause of institutional mortality in Ghana compared to a decline of malaria deaths from 17% to 13% within the same period (National NCD Strategy - MOH, 2012b, p.12). Informants shared their views;

So it means that even in sub-Saharan Africa, even contagious diseases are not killing us as compared to NCDs. However, there is not much being done for the NCDs because there is still more emphasis on the malaria eradication, TB, and HIV/AIDS. I can tell you that even the GHS are not concerned so much about the NCDs but that is what is killing our people and not the communicable. Malaria for now is even okay. Maybe children under five with cerebral and severe, those are the ones but adults, they are being treated with Artesunate and they are getting better.

In the past we will be talking about the infectious diseases especially malaria, diarrheal diseases and the respiratory tract infections. But for the past 10 to 15 years, we are seeing HTN/DM much more frequently. Hypertension and DM are not sitting at the top yet but they are appearing frequently in the top 10 diseases on morbidity charts but for some districts HTN sits at number one. So this tells us that whatever we are doing is either not working well, or because these conditions are chronic maybe people are living long and so the conditions always raise their heads.

5.1.3 Risk factors. Key informants demonstrated their understanding of the HTN/DM situation with respect to the increasing incidence of risk factors of HTN/DM in the Ghanaian population. Risk factors mentioned included poor diet, tobacco and Indian hemp use in the young population, a high salt diet, a lack of physical activity, prolonged screen time, urbanization and its attendant sedentary lifestyle, and obesity. However, the most common risk factor mentioned by participants was excessive use of alcohol. This has been due to the proliferation of locally manufactured herbal alcoholic beverages with aphrodisiac claims. In focus groups, patients' experiences show that they are aware of risk factors. Most patients believed that unhealthy diet was the main risk factor for their conditions. Some key informants and focus group participants commented as follows;

For instance, over the weekend I was going over the Ridge..... I counted close to 100 billboards for Adonko Bitters, Kakai bitters and 777 bitters. We may not understand but this is very serious. There should be regulation but the regulatory agencies are weakAnd the youth are doing worse things now. Now you don't see them smoking cigarette but they are smoking Indian hemp.... They are taking a lot of weed, and a lot of hard drugs. They are also taking medicines that give those kinds of effects. I mean if you really want to go into it, the social aspects are really supporting the fact that there's going to be an increase and we have a very open trade system. People are selling everything that they want. And now KFC too has come and they are expanding..... So the fast foods is also a big problem. Also, we are not controlling our salt, our sugar, and the biscuit industry.... So all these things make a good environment for HTN/DM to increase.

Sedentary lifestyle has become very serious and we know all the studies are pointing out that if you do not exercise regularly, if you sit down for too long, if your screen time is too long, you have these problems. Previously it was not like that. Now a lot of the population are working in the formal sector.

In my case, my husband had a fatal accident and was hospitalized for a long time. It was very hectic moving up and down all the time. So I took leave from work and because of the way things went, I couldn't get time to eat. Only energy drink and biscuits all the time. So I am sure that was what resulted in my situation [FG 1].

5.2 National response

This section of the thesis details the main national response actions to HTN/DM needs in Ghana. For the purposes of this research, national response to HTN/DM needs have been presented in two parts: policy response and service activity response.

5.2.1 Policy response. Based on the findings of the study, a number of activities have been embarked upon in response to HTN/DM. These include initial response efforts, resolutions and policies, overarching NCD policy and strategy, and policies on risk factors.

Initial response effort. Ghana's response to HTN/DM management started with a number of incipient activities. In 1993, a strategic paper was put forward by the NCD Control Programme (NCDCP) which spelt out the roles to be performed by the various health administrative levels of health delivery (Community, sub-district, district, regional and national) on the prevention and control of NCDs (National NCD Strategy -MOH, 2012b, p.16). The NCDCP in 1998 put forward another strategic paper for the consideration of the MOH. The paper proposed the establishment of a National NCD Technical Advisory Board as well as Expert Technical Subcommittees on various NCDs including HTN/DM subcommittees. Other general strategies were proposed and included the following;

- Establishment of NCD counselling and consultation sections in all district and regional hospitals.
- Development of educational materials for NCDs.
- Health worker capacity building in NCD surveillance.
- Health worker capacity building on the knowledge, diagnosis, management and control of NCDs.
- Introduction of standardized guidelines and protocols for NCD management.
- Conducting baseline research on targeted NCD conditions.

This was followed in 2002 by the enactment of a NCD Draft National Policy Framework (National NCD Strategy - MOH, 2012b, p.16). Although this was done under the aegis of the WHO, it was not formally adopted. A seminar was organized by the NCDCP in 2005 to create awareness of NCDs and engender coordination between clinicians, public health experts, and practitioners. This was followed by a national conference for stakeholders on the public health and social dimensions of CVDs, diabetes, and cancers. The aims of the conference were to lay the foundation for the development of a NCD strategic framework, devise a plan to halt NCDs and review procedures and strategies for managing NCDs (Bosu, 2007). Following the promulgation of the 2007 National Health Policy, a position paper was put forward by the MOH in 2008 assessing the national situation and recommended appropriate recommendations for the management of NCDs in Ghana. A draft NCD policy was finally introduced in 2012. Thus between 1993 and 2012, management of

HTN/DM was influenced by ad hoc measures based on these strategic papers and proposals (National NCD Strategy - MOH, 2012b).

Resolutions, policies and strategies. In response to the rising burden of HTN/DM, Ghana's NCD policy framework is characterized by the adoption and/or ratification of national and international resolutions, policies, strategies, and action plans (National NCD Policy - MOH, 2012a, p.8). First, there are a number of national health policies and other programmatic health policies that influence the management of HTN/DM. These include;

- Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013
- National Health Policy 2007
- Health Sector Medium Term Development Plan 2010 -2013
- Health Promotion Policy 2005
- Child Health Policy 2007-2015
- Regenerative Health and Nutrition Programme Strategic Plan 2007-2011
- Disease Control Strategy 2010-2014

Second, Ghana has ratified a number of World Health Assembly (WHA) Resolutions which impact on the policy framework for the management of DM/HTN. These include resolutions on tobacco, diet, physical activity, and the use of alcohol. The underpinning resolutions which influenced NCD policy framework are shown in Table 5.1.

Table 5.1.
WHA resolutions influencing hypertension/diabetes control in Ghana

Year	WHA Resolution	Code
1998	WHA Request for a global strategy for NCD prevention and control	WHA 51.18
2000	Reaffirmation of global strategy of NCD prevention and control	WHA 53.17
2001	Transparency in tobacco control process	WHA 54.18
2002	Development of a Global Strategy on Diet, Physical Activity and Health (DPAS)	WHA 53.23
2003	Adoption of WHO Framework Convention on Tobacco Control (FCTC)	WHA 56.1
2004	Endorsement of DPAS	WHA 57.17

2004	Health Promotion and Healthy Lifestyles	WHA 57.16
2005	Public Health Problems caused by Harmful use of Alcohol	WHA 58.26
2007	Prevention and Control of NCD: Implementation of the Global Strategy. Call to Prepare an Action Plan	WHA 60.23
2008	Endorsement of a six-year Global Action Plan 2008-2013	WHA 60.14

The policy framework has also been based on a number of WHO strategy papers and plans of actions as follows;

- Strategy for the African Region on NCDs, WHO AFRO 2000
- WHO Framework Convention on Tobacco Control, 2003
- Global Strategy for Diet, Health and Physical Activity, 2004
- Action Plan for the Global Strategy for the Prevention and Control of NCDs, 2008;
- Global Status Report on NCDs, 2010

Finally, Ghana was among the countries that ratified the Political Declaration on UN high level meeting on NCDs, in 2011 (National NCD Policy - MOH, 2012a, p.9). The present study then investigated the extent to which national policies have been influenced by some of these international frameworks and policies.

Documentary analysis confirms that policies for HTN/DM management are influenced by the appropriate international and national policies, resolutions, strategic papers or action plans. For example, Ghana's Alcohol Policy was framed to incorporate the WHO 'best buys' on reducing alcohol related health conditions. According to the policy, although "these 'best buy' areas such as increasing taxes on alcoholic beverages; regulating availability; regulating marketing of alcoholic beverages and drink driving countermeasures have proved effective mainly in high income countries, such interventions have been proven to be both cost effective and have the most impact. The policy thus focuses on these 'best buy' areas in addition to using locally designed cultural and social interventions in reducing alcohol related harm" (National Alcohol Policy-MOH, 2016a p. 8).

Ghana's policy framework for tobacco control is in "furtherance of the objectives, principles, and provisions of the WHO Framework Convention on Tobacco Control (WHOFCTC) and its Guidelines for implementation in order to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke" (National Tobacco Control Regulations –MOH, 2016b, p.2). A critical assessment of Ghana's tobacco regulations show that requirements for areas designated for smoking, prohibitions in areas designated for smoking, display of no smoking signs, and health warnings for tobacco and tobacco products are based on the WHOFCTC.

As stated in the nutrition policy document of Ghana, nutrition interventions have also been influenced by regional, national and international policies and resolutions on chronic disease management. The National Nutrition Policy provides for the development of "dietary guidelines and recommendations for the management of priority nutrition-related NCDs—with management of overweight/obesity and nutrition-related NCDs being a key component of nutrition services and programmes" (National Nutrition Policy-MOH, 2013 p.30). Policy measures such as "promoting healthy diets and lifestyles throughout the life cycle" through the diversification of diets and healthy food choices have therefore been influenced by such resolutions as health promotion and healthy lifestyles, WHA57.16 and DPAS (National Nutrition Policy – MOH, 2013, p.30).

Current policy and strategy. A direct response to the need to manage HTN/DM was the introduction and launch of an overarching National NCD Policy and Strategy. The vision of the policy is to "create a healthy nation that lives longer with optimal physical and mental health (National NCD Policy - MOH, 2012a, p. 9). Through the provision of an enabling environment, health system strengthening, health resources, and empowerment of communities, the current policy aims to "reduce the burden of NCDs as to render it of little public health importance" (National NCD Policy - MOH, 2012a, p.9). The policy proposed five broad strategic areas; primary prevention, early detection, health systems strengthening, research and development, and surveillance-that will underpin efforts to control NCDs. The policy also proposed a periodic Monitoring and Evaluation system to assess programmes either as a stand-alone exercise or as part of the yearly assessment of the performance of the health sector (National NCD Policy - MOH, 2012a, p.24).

A national NCD Strategy has also been launched and it details how goals and objectives in the policy will be achieved (National NCD Strategy - MOH, 2012b). The current strategy focuses on nine broad areas of action as follows;

- Governance and coordination
- Primary prevention
- Early detection
- Clinical care
- Rehabilitation
- Health system strengthening
- Social support systems and partnerships
- Financing options
- Monitoring and Evaluation

The focus of the strategy is the establishment and strengthening of structures to manage national response, promotion of early detection, implementation of cost effective interventions to modifiable risk factors, and integrating NCDs into primary care (National NCD Strategy - MOH, 2012b).

Policies on risk factors. A number of policies have been introduced to manage risk factors for HTN/DM. First, the Tobacco Control Regulations (Legislative Instrument 2247) and Smoking Cessation Clinical Guidelines were launched in May 2017. The policy aims to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke in Ghana (National Tobacco Control Regulation-MOH, 2016b, p.2). Among other stipulations, the Regulations make provisions on requirements and prohibitions for areas designated for smoking, display of no smoking signs, prohibition of smoking in private vehicles, health warnings for tobacco and tobacco products, and additional packaging and labelling requirements (National Tobacco Control Regulation –MOH, 2016b). Respondents in this study generally believe that the implementation of some aspects of the policy (such as the ban on tobacco advertisement and smoking in public places) has impacted positively on management of the risk factor.

Second, an alcohol policy has been launched to regulate the production, distribution, sale and consumption of alcohol and alcohol products (National Alcohol Policy – MOH, 2016a). The policy focuses on education and training on harmful use of alcohol, commercial production, distribution and sales systems, marketing of alcohol products, and drink driving countermeasures (National Alcohol Policy - MOH, 2016a). The introduction of the policy led to the creation of a number of institutions to help regulate and implement policies on alcohol consumption in Ghana. Specifically, provisions were made for the creation of the Ghana National Alcohol Commission (GNAC), a National Alcohol Taskforce (NAT) and Local Alcohol Taskforce (LAT) to aid in the

implementation of the policy and coordinate alcohol-related programmes (National Alcohol Policy – MOH, 2016a p.28).

Third, a nutrition policy has been established to scale-up evidence-based nutrition interventions for managing HTN/DM and other conditions (National Nutrition Policy – MOH, 2013). The Nutrition Policy aims to promote optimal nutrition as an essential component of health and development among the Ghanaian people. The policy underscores the role of nutrition interventions and programmes in the prevention and control of NCDs and NCD risk factors such as being overweight and obese (National Nutrition Policy – MOH, 2013 p.30).

5.2.2 Response programmes and service activities. Some programmes and service activities have also influenced response effort. These include NCD Control Programme (NCDCP), Regenerative Health and Nutrition Programme (RHNP), research, education, advocacy, financing, screening and service delivery activities.

NCD Control Programme (NCDCP). Recognizing the increasing burden of NCDs, the first response effort was the creation of the NCDCP by the MOH in 1992, with the aim of designing, monitoring and coordinating interventions to reduce the incidence and prevalence of NCDs, prevent disabilities and deaths from NCDs, and improve the quality of life of persons living with NCDs in Ghana (National NCD Strategy - MOH, 2012b, p.15). As part of its activities, the NCDCP has presided over the launching of a NCD Multi-Sectoral Committee aimed at harmonizing all interventions and activities directed at the promotion, preventing or management of NCDs in Ghana (GHS Annual Report, 2016). The Committee coordinates resource mobilization for the implementation of NCD programmes and provide reports on key NCD issues that need to be tackled. These issues include low priority for NCDs in specific regions of the country, human resource challenges, funding arrangements, and implementation of specific interventions (GHS Annual Report, 2011 p.48).

Key informants indicated that the NCDCP aims to monitor and coordinate all programmes and activities to reduce the incidence and prevalence of all NCDs. Findings reveal that the NCDCP is an integral part of the Disease Control Unit of the GHS and is accorded the same priority and attention as other control programmes within the Unit such as the Malaria, HIV/AIDS and TB control programmes. However, participants added that other programmes (Malaria, TB,

HIV/AIDS) receive more funding from development partners and thus appear to gain more attention than the NCDCP. A policy maker stated when asked about the functions of the NCDCP;

It is a unit under the Disease Control Department. So there are several programmes under the Department and that is one of them. It is responsible for issues concerning NCDs, planning, prevention and control activities for all NCDs. So basically, it's like a secretariat to control all NCD activities in the country.

Another policy maker stated;

...If we are still waiting for development partners to provide funding for NCDs as they used to do for TB and HIV/AIDS, then we will continue to have problems and that is the main issue confronting the NCDCP.

The NCDCP engages in several activities on management of HTN/DM. Programmes are designed for celebrating international days and events to create awareness on HTN/DM and other NCDs. Desktop NCD calendars and healthy lifestyle posters are designed and distributed during the celebrations of the Africa Healthy Lifestyle Day, World No Tobacco Day, World Heart Day, World Kidney Day and the World Diabetes Day (GHS Annual Report, 2011 p.51).

Regenerative Health and Nutrition Programme (RHNP). The Regenerative Health and Nutrition Programme (RHNP) is Ghana's response to the increasing risk factors of HTN/DM. Following a pilot study of 10 districts in the county (National NCD Policy - MOH, 2012a, p.2), the RHNP was introduced as a paradigm shift which places more emphasis on lifestyle improvement, health promotion, prevention of disease and restoration of life (Annual Programme of Work-MOH, 2007b p.7). According to programme documents, the main idea behind the establishment of the programme is that through the implementation of healthy lifestyle programmes, good dietary practices and mother and child care practices, several NCDs could be eliminated (MOH, 2007a). Consequently, the programme aims to help Ghanaians to;

- Increase consumption of vegetables and fruits
- Increase potable water intake
- Engage in some form of moderate exercise three times in a week
- Get more rest
- Improve food safety
- Improving environmental sanitation
- Improve personal hygiene
- Ensure lifestyles that promote health

Interviews with key informants confirmed the purpose for introducing the programme as explained by a health manager;

So that is why we have a regenerative and nutrition education unit. The idea is to focus on healthy lifestyle to address the risk factors. So we are telling people to stop smoking, exercise regularly, and reduce their alcohol intake.

Under the programme, occasional training workshops are organized for selected health workers, midwives, representatives of ministries, departments and government agencies, with “change agents” being trained in some districts to spearhead educational campaigns (GHS Annual Report, 2007 p.51). The RHNP is seen as a major health sector policy and has been integrated into growth promotion sessions and outreach programmes of the GHS (GHS Annual Report, 2008). The programme has also been integrated into the NCD research framework, with the purpose of reviewing and scaling up health and nutrition activities (National Health Research Agenda – GHS, 2015, p.11). To manage the programme, a unit has been established within the MOH. However, key informants believe more effort is needed to achieve the objectives of the programme. Respondents indicate that a small unit within the MOH is not the most effective way of dealing with the plethora of issues that characterize lifestyle changes. The need to bring other organizations into a collaborative relationship in order to engender a coordinated response to the multifaceted issues concerning risk factors and healthy lifestyles was emphasized.

Research. A number of activities have been undertaken to ensure that research plays a key role in HTN/DM management. In 2011, the MOH initiated plans to conduct, coordinate and provide technical assistance in NCD-related research. Consequently, the Ministry presided over a stakeholder forum to develop a national NCD research agenda (National NCD Policy - MOH, 2012a). To ensure key actions are informed by appropriate research, attention was given to capacity building for research and the setting up of the research agenda in 2013 (GHS Annual Report, 2014). Through the agenda, the GHS is tasked to build capacity at all levels of the health sector in the development of proposals and to conduct research, facilitate research dissemination, advocate the development of policy from study outcomes and intensify the prevention and control of NCDs and other conditions through appropriate investigations (National Health Research Agenda - GHS, 2015, p.11). Areas of prime importance in research have been collated from the various health programmes (including NCD programmes) and grouped according to the Medium Term Development Plan, with scientific review meetings already ongoing (GHS Annual Report, 2014). Key foci of NCD research have been identified and include NCD epidemiology, financing,

health systems support and optimum delivery of interventions. These areas have been identified because research on cost effectiveness of preventive and clinical interventions and strategies to integrate NCDs into other disease programmes are generally lacking in Ghana (National NCD Strategy- MOH, 2012b, p.35).

Some key informants stated that they are responding to the HTN/DM situation by advocating for strong research. Respondents believe that this will help put the health challenge in better perspective and bring out issues that need to be addressed, with control efforts more likely to be successful when underpinned by strong evidence. One advocacy group respondent commented;

We advocate for strong research currently. For example, those studies I talked about are all those that come from outside such as WHO studies which are geared towards certain agenda and then for some reason we are part of it such as the H3 Africa and RODAM studies. For example, from the RODAM study we see that although we usually believe that staying in the rural area should be protective of HTN/DM, preliminary findings showed otherwise so what it is that we are doing differently? It could be that the rural as we have branded it in terms of the sophistication is not actually rural. They may be eating all the things we bring from the city and may not be engaging in any rigorous manual activity so there is the need for research to understand the key issues.

Advocacy. Those outside the policy process engage in HTN/DM advocacy by impressing upon policy makers the need to pay attention to the increasing burden of HTN/DM in terms of allocation of resources. According to key informants, the NGO sector engages in a lot of advocacy work, with some concentrating on NCD awareness in general while others focus on specific diseases such as HTN/DM. Other respondents indicated that they play an advocacy role by influencing policy makers' decisions and lobbying for better concessions for patients. When asked whether there are ample opportunities for NCD advocacy, a policy maker stated;

Yes. We have pockets of these organizations with their specific interests. Some have focused on tobacco and alcohol and some have focused on specific disease conditions.... I think advocacy is one area that is going well for NCDs.

Two advocacy group informants commented;

Our position in this is two-fold. Mainly advocacy and also education. Advocacy for the relevant stakeholders to put in the necessary resources— human, technical and also logistics. We have representation for example on health insurance board and a couple of others. So we see what the burden is and therefore use that as a tool to engage whoever is sitting at the table with us to be able to put in the requisite messages and I think we need to explore those options a bit more.

Even this year's medical knowledge fiesta organized by the Ghana Medical Association is on NCDs as the main theme is 'non-communicable diseases burden in Ghana, the eye of the crocodile'. So I think advocacy programmes are ongoing.

Documentary sources revealed a number of measures have been introduced around HTN/DM advocacy (Table 5.2). Although some of these measures have been implemented in various degrees (such as celebration of international days and advocacy for physical education sessions in high schools), other measures are yet to be implemented (fiscal levers for healthy food and drinks and giving revenues obtained from alcohol and tobacco taxation to advocacy groups).

Table 5.2.

Advocacy measures on hypertension/diabetes control in Ghana

Advocacy measure	Documentary source
Celebration of international day	GHS Annual Report, 2011
Fiscal levers for healthy food and drinks	National NCD Policy, MOH, 2012a
Advocacy for physical education sessions in schools	National NCD Policy, MOH, 2012a
Raising revenue for advocacy organizations by increasing taxes on tobacco and alcohol products	National NCD Policy, MOH, 2012a
Advocacy on NCD related research	National NCD Policy, MOH, 2012a
Advocacy for health eating in curricula of schools	National NCD Strategy, MOH, 2012b
Advocacy for national stakeholder support on nutrition	National Nutrition Policy- MOH, 2013

Surveillance. There are established monitoring systems which provide useful information for the management of NCDs. For NCD policy development and implementation, three monitoring systems are being implemented. They include “monitoring of risk factors for chronic NCDs, blood pressure and biochemical measurements every five years in a national survey; monitoring outcomes including morbidity and cause-specific mortality; and the monitoring of health system responses, including the national capacity to prevent NCDs in terms of plans, infrastructure, human resources and access to essential health care including medicines at all levels” (National NCD Strategy - MOH, 2012b, p. 34). Of specific relevance to the development and implementation of HTN/DM programmes is the monitoring outcomes of morbidity and cause-specific mortality.

Ghana adopted the WHO Africa Integrated Disease Surveillance Reporting (IDSR) system which began in 2003 with the monitoring of morbidity and cause-specific mortality of 23 priority diseases which were all communicable diseases (National NCD Strategy - MOH, 2012b). In 2010, however, a second phase of the IDSR “was expanded to cover 44 diseases including diabetes, hypertension, road traffic accidents and mental health diseases” (National NCD Strategy - MOH, 2012b, p. 34).

NCD Financing. Financing health programmes is a long-standing challenge in Ghana. This became an even bigger challenge following a reduction in governmental financial allocation to the GHS over the last few years as this has adversely affected service delivery, particularly public health promotion and prevention activities (GHS Annual Report, 2014 p.16). However, Ghana aims to ensure sustainable financing for health care delivery and financial protection to the poor (National Health Research Agenda – GHS, 2015, p.9) as well as move towards universal health coverage (Ghana Health Financing Strategy - GoG, 2015, p.10). A National Health Insurance Scheme (NHIS) was established in 2004 to pay for health services that are covered under the scheme (Government of Ghana, 2004). In general, key informants believe that the NHIS has been a good response to ensure access to HTN/DM services as outpatient and certain inpatient services are covered under the scheme. A payer stated;

We expect the health facilities to treat people with these conditions without charge. So if anybody has to make any payments on these two conditions, then we need to know why they are being asked to make payments because it is fully covered for both the services and then the medication.

Despite improved access to HTN/DM services and care under the NHIS, excessive delay in reimbursement of providers has affected the provision of services. Policy makers’ effort to liaise with the National Health Insurance Authority to resolve the delay in reimbursement of providers have been unsuccessful (GHS Annual Report, 2014). As a result, not all services and medications are available under the scheme. Stakeholders stated that negotiations have been ongoing for the NHIA to absorb certain services for patients but these have yet to be concluded. Patients expressed difficulty in purchasing certain medications not covered by insurance, insisting that most of them are retired or not working. A payer and a focus group member stated respectively;

The NHIS is not covering a lot of these things. For example, the NHIS is not covering strips. We are even advocating that if you are not covering a lot of things its fine but the first finger prick in the hospital must be free. So that if somebody comes to hospital, the same way you will check the temperature or blood pressure, you do same for pricking a finger but they said no [KI 26].

For me I think the issue is poverty. For example, Daddy said they prescribed a medication for him that he couldn't buy. I have been asked to buy a medicine that cost 280 cedis. In fact I could not buy especially if you consider our ages and some of us we are not working. So we all need help to be able to access better care [FG 1]

The MOH recognizes the financial challenges associated with NCD management and has therefore been considering a number of measures to help “improve the financing of NCDs” (National NCD Strategy - MOH, 2012b, p.21). These include;

- Increasing resources allocated to NCD prevention and control (National NCD Strategy- MOH, 2012b, p.35)
- Strengthening public financial management and accountability systems (National Health Research Agenda – GHS, 2015, p.9).
- Allocating earmarked funds for NCD prevention (National NCD Strategy - MOH, 2012b, p.35).
- Expanding the NHIS benefits package to include screening for NCDs (National NCD Strategy - MOH, 2012b, p.36).
- Improving efficiency and effectiveness of service delivery including the NHIS (National Health Research Agenda – GHS, 2015, p.9)
- Mobilizing resources from the private sector to support NCD control (National NCD Strategy - MOH, 2012b, p.36).

In concert with the WHO, the Government of Ghana has explored other health financing mechanisms for NCD management. Current sources of funding for NCDs recommended by the WHO and being explored include levies on profitable corporate bodies, bonds, voluntary solidarity contributions through mobile phones, tobacco excise taxes, and excise taxes on unhealthy food (National NCD Strategy - MOH, 2012b, p.35).

Education. Policy makers, partner organizations and health providers provide education on HTN/DM in various ways. Interviews with policy makers suggest that they encourage all health facilities in Ghana to conduct HTN/DM clinics (health facility education programmes) where health personnel interact with patients and educate them. Policy makers believe that this takes place in various facilities across the country. However, findings show that this is not mandatory and not all facilities hold such educational programmes. The Central Regional Hospital for example, is yet to start this programme. In terms of education, policy makers also embark on the following activities;

- Organize seminars, workshops and training programmes on HTN/DM management for health workers and groups
- Leading health workers talking to identifiable groups on these conditions (e.g. Youth groups, churches, civil society groups).
- Organizing regular community outreach programmes using community health nurses and community volunteers
- Designing materials such as fliers and flip charts on HTN/DM for health facilities

However, with the exception of community outreach programmes, the other activities do not happen on regular and sustained basis. Community outreach programmes tend to be more restricted to the rural areas and are not always on NCDs but on all other topical health issues. When asked whether there are any educational programmes on HTN/DM, a health manager commented as follows;

So at the OPD they have a general health education tour and if you go to the antenatal clinics they do the same thing where they talk about various topics and that includes HTN/DM. So there is a large scale effort at the various OPDs to educate patients and as I said not just about HTN/DM but also on the other conditions. And then there are community outreaches where our community health nurses go out into the communities.....then the health workers ourselves are also involved in giving one health talk or the other to identifiable groups, in churches, recognized bodies like youth groups and even adult groups.

Policy makers believe that one of the key interventions in the control of NCDs is health promotion. These are set out in some detail in the annual reports of the GHS. Key activities that have been carried out include the celebration of world and national events such as tobacco, diabetes and heart days –which were used to sensitize the general public on HTN\DM (GHS Annual Report, 2011 p.51). Also, press releases on healthy lifestyles have been used on several occasions (GHS Annual Report, 2010). Furthermore, specific educational campaigns have been launched to create awareness, a notable one being the “Good Life, Live it Well” campaign which was undertaken in collaboration with Johns Hopkins University (GHS Annual Report, 2010 p.21). Health promotion seminars on NCDs have been organized along with promotion of health walks which have become a part of celebration of several national events and the anniversaries of companies and churches (GHS Annual Report, 2010 p.21).

Patient organizations partner with associations from other countries for support, and train health personnel and ‘trainers of trainers’. A typical example is the collaboration with the Irish Diabetes Association to offer training to health professionals on diabetes management. Though educational

campaigns have been erratic due to inadequate resources, leaflets and easy-to-read fliers are designed and distributed in health facilities. Executives of patient organizations also go on radio and television to talk about HTN/DM.

Advocacy organizations present on radio, TV stations, churches and other organized groups to educate stakeholders on HTN/DM. One organization uses its Annual General Meetings to educate stakeholders on NCDs in general and more specifically on HTN/DM. A respondent explained;

We are also into education and we do that on a lot of platforms. We go to the radio stations and talk about it, we do community engagements. Last two years our AGM programme and theme was on NCDs and about two weeks from now we are holding a programme with all players in the health sector at the Ghana College of Physicians and Surgeons on NCDs. So because we see it as a major challenge we seize every opportunity to do some education on these conditions.

Providers stated that they engage in educational programmes in many ways. First, there is physician-led education as patients receive treatment from health personnel. Physician-led education was characteristic of respondents from both urban and rural settings. Findings on provider education differed markedly in the rural and urban settings considered in this study. In the urban setting, a diabetes centre has been created through a collaboration between the MOH and Novo Nordisk Pharma Gulf FZ-LLC (A Danish pharmaceutical company) to provide holistic HTN/DM services to communities in the municipality. The centre is well equipped and has an education and counselling unit where patients are educated on the management of these conditions. The centre holds educational programmes three times every week where doctors and nurses educate patients on risk factors, as well as on general management issues including compliance. Apart from the regular HTN/DM clinic, the centre organizes education programmes in the municipality when they have funding from their partners (Novo Nordisk), liaises with the Municipal Health Directorate to provide educational services for churches and youth groups, and occasionally teams up with celebrities to run campaigns on HTN/DM. A provider explained;

This place is a counselling and education unit. We take care of diabetics and we run hypertensive clinics here on our non-diabetic days because these two conditions go together. What we do is that we educate the patients to understand the condition so that this misconception about it being the devil's disease, curses disease and things could be taken off their minds so that when you put them on treatment, they can follow the treatment. We have flip charts that we use and try to make our education very practical so that our patients can embrace it. We also run hypertensive clinics but those with diabetes and hypertension we group them together. As you can see this is a membership card where we document everything about our clients. We write their BP,

weight, drugs..... So even if they travel and pick it the doctor will have an idea of the drugs that they are on.

In the rural setting of this study, providers indicated that education on HTN/DM is mainly physician-based. Thus, doctors educate patients when treating them. However, physician-led education is limited due to the number of patients doctors have to see each day. Also, senior nurses educate patients at the OPD but this could be on any other health condition. Probing revealed that education at the OPD is usually on maternal issues but occasionally on HTN/DM. Though no HTN/DM clinics are organized, nurses tell patients ‘the little they know’ when checking blood pressure, sugar levels, and other routines. A provider threw more light on this;

Some of us have been to a few workshops so we try to educate them on the little we know.... They go out and ask and are given wrong information so I feel we should have time for them..... A few we know we tell them. Hereditary, obesity, high salt intake. So the little things we know we tell them when attending to them.

The need for education was stressed in focus groups. Patients compared education programmes with what prevails in other hospitals in the country and expressed the need for such programmes to be organized as soon as possible. Patients also stressed the need for education on HTN/DM as is the case for HIV, malaria and TB.

If you go to hospitals, you will see several posters of TB and HIV. So if you can read, you will know that this is telling you something and educating you about those conditions. If they can do the same for these conditions it will help. It’s the same thing they have to do for HTN [FG 2].

In my case, it was in the eastern region that I first attended an education programme in the hospital. In fact, that was how I came to even purchase my BP equipment [FG 2].

Table 5.3 explains the main educational activities identified by respondents in this study and the frequency with which these activities are carried out. The table shows that with the exception of outreach programmes (which touches on all diseases of public health importance and not necessarily on HTN/DM), the frequency of other educational activities is limited. Stakeholder educational activities have been summarized in table 5.3.

Table 5.3.

Key stakeholder activities on education on hypertension and diabetes

Stakeholder	Activity	Regularity
Policy makers	Seminars, workshops, education programmes for groups Radio/TV programmes Encouraging providers to organize DM/HTN clinics Outreach programmes Distributing fliers, posters etc	Only outreach programmes happen on a regular basis
Patient organization	Leaflets, fliers on DM/HTN Radio/TV campaigns Educational programmes for members Talk to identifiable groups such as youth clubs	When resources allow
Advocacy organization	TV/Radio campaigns Talking to groups such as churches Special programmes such as AGMs	Occasionally
Providers	Planned DM/HTN clinics Physician-led education Occasional education campaigns in communities Identifiable groups such as churches and youth groups teaming up with celebrities to offer education programmes	DM/HTN only regular in GSMH; Physician-led education is regular but very entrenched in GSMH; Other programmes only occasionally

Source: Interview data

Screening activities. Policy makers recognize the role screening (whether programmed or opportunistic) plays in early detection of HTN/DM cases (National NCD Policy – MOH, 2012a p.19) although limited access to screening services has been duly acknowledged (National NCD Strategy - MOH, 2012b). Access to screening programmes have been affected by inadequate infrastructure and equipment, human resources challenges, and is more critical in the rural than urban areas (National NCD Strategy - MOH, 2012b, p.18). Although screening for NCDs is organized occasionally as happened in 2013 when the RHNP undertook a screening programme in 12 public institutions in Accra (Programme of Work - MOH, 2014b), interviews revealed that screening programmes are mainly opportunistic, with no systematic screening for HTN/DM existing in mainstream service delivery. The ability to screen is, however, available in health facilities. A policy maker commented;

There is no active laid down screening programme where you would say that there is a laid down screening, go to this place we will get it done for you. No there isn't but what there is, is the ability to screen and treat at all levels. And that effort has been made so at the very basic level of our health delivery system which is the CHPS, if you go there it's available.

Screening is, however, carried out by patient organizations and other philanthropic bodies, although this is irregular because of funding constraints. One such programme is being undertaken by a patient organization in high schools as part of the "Youth in Diabetes Project" launched to reduce the incidence of diabetes by 15% between 2013 and 2020 across Africa. The programme is meant to ascertain the prevalence in youth across Senior High Schools in Ghana. Informants indicate that so far pupils in schools in the Western, Eastern, Central and Greater Accra Regions have been screened and that screening the Volta Region is about to commence. A patient organization respondent commented;

So far we have not done much but the first thing we decided was to 'catch them young' and get the message out there. So we decided to tackle the youth. So from 2013-2015, our focus and the theme was the "youth in diabetes". So we started screening senior high schools. This will help us to have an idea of the prevalence in the youth.

More systematic screening is provided by some health providers when they get support, such as providers in the Ga South Municipal Hospital. Screening support has come from Novo Nordisk and Palb Pharmaceuticals, but somewhat irregular in nature. Nevertheless, providers have screened some communities in the municipality including Weija, Aplaku, Oblogo, Mallam, and Dome market;

Every quarter we screen one community, a thousand people for diabetes in the municipality. We have had two successful screening programmes done. Last quarter we had it in September at Weija and Oblogo and we had a lot of cases. This year due to financial challenges, we could not have it at the first quarter. We had it at the second quarter, June to be specific at Aplaku and Mallam.

Providers at the rural setting stated that no screening programmes are conducted in the community.

People are not being properly educated. The health screening that needs to be carried out are not really ongoing. Even here, since I have been here, there hasn't been any. I am sure there are so many other challenges, but the facility in a day or on a good weekend can say that oh, let's have a free health screening for the community.

Probing showed that discussions have been on-going among various stakeholders (patient organizations, policy makers and payers) on who shoulders the cost of screening. Payers, however,

believe that under the Act that established the NHIA, they are only responsible to pay for curative services and not preventive, as this is the responsibility of the Public Health Unit of the GHS. A few respondents in different stakeholder groups shared their experiences as discussions continue on who finances screening programmes on HTN/DM and other NCD conditions;

Normally we say prevention is better than cure, so screening at least at all levels, this would help. If insurance (NHIS) had taken screening on board at least at the point of consumption, then everybody will go and do the screening and get to know their status and then work on it. And it's because many people are not doing that, of course it's not free, so it becomes a personal issue and there is no incentive unless they break down. It is essential to detect these conditions early and nip them in the bud before they become disease conditions.

Health insurance was set up to pay for curative care because there was a Public Health Directorate within the GHS which was meant to take care of the preventive aspect. So the health promotion and preventive aspects seems to have lapsed and that is why I think we are seeing more of the NCDs. So still NHIS pays for curative care and there has been a clamour for us to pay for preventive care which will be in our interest but the problem is, who pays for it? Those who are given budgetary allocations for public health programmes, what are they doing with the money? So does it mean those allocations for public health activities will be put in the health insurance fund so that it can be used to support preventive programmes? So a lot of issues need to be resolved before this can be done.

Service delivery. Key informants stated that the first avenue for patients in terms of access to primary care services on HTN/DM are the CHPS facilities since this is the first point of contact for all health conditions (CHPS are an approach to health delivery adopted mostly in rural and peri-urban Ghana where a senior nurse and a few staff nurses move permanently into a hard-to-reach area to provide primary care services). Consequently, effort has been made to create more CHPS units for the provision of primary care services. Respondents added that primary care services for HTN and DM are available throughout the referral system — in health centres and clinics (sub-district level), district hospitals (District level), regional hospitals (regional level), and teaching hospitals (national level). One health manager stated;

Right from the community level, we have CHPS which is almost all over the place even hard-to-reach areas where you have basic equipment to test BP and screening. And then, the referral system too, health centres, hospitals district and regional are all in place. For us as health people, our focus is to close the distance level as much as we can so that geographical access will not be an issue.

Although primary care services are available throughout the referral system, the aim is to focus on, and strengthen the district and sub-district health systems as the bedrock of the national primary care strategy and implement the CHPS strategy especially in under-served areas (National Health Research Agenda – GHS, 2015, p.9).

As part of the primary care response for HTN/DM control, two main initiatives are being implemented in Ghana. The Buddy Doctor Initiative (BDI) and the Base of the Pyramid project (BoP) are two initiatives being implemented through a collaboration between the MOH and Novo Nordisk Pharma, and facilitated by the Danish Embassy in Ghana. These initiatives aim to “improve the wellbeing of people with diabetes in Ghana as well as the prevention and early detection of diabetes in the country through a long-term sustainable win-win partnership” (GHS Annual Report, 2016 p.75). The BDI is a coaching and mentorship programme for doctors with the aim of changing the strategic approach for improved glycaemic control in Type 2 diabetes. The concept emanates from the need to ensure effective diabetes care to patients in primary care due to the shortage of diabetes specialists in many LMICs (GHS Annual Report, 2016 p. 76). Through the initiative, a framework that encourages specialist doctors to link up with GPs is used to provide enduring mentorship relationships for better diabetes care. The second project, the BoP project is being implemented by Novo Nordisk in Ghana, Kenya, Nigeria and India. The project aims to make comprehensive diabetes care and insulin more accessible to the working poor in LMICs. An integrated approach being utilized (GHS Annual Report, 2016 p.76) enables patients to benefit from;

- Increased awareness of diabetes in the local community
- Screening and early diagnosis to prevent complications of diabetes
- Access to quality care by healthcare professionals trained in diabetes management
- Stable and affordable supply of insulin
- Improved self-management through patient education

In general, these primary care initiatives (BoP and BDI) are being implemented in only five municipalities, with the Ga South Municipality being one of them.

Much of the response and service delivery activities in Ghana on HTN/DM has been in secondary care (National NCD Strategy - MOH, 2012b). Key informants indicate that in terms of treatment and clinical interventions, provisions have been made for full access to diabetic and hypertensive services as treatment is available at all functional levels of service delivery. However, some respondents were quick to add that although treatment is available, this cannot be seen as perfect

since there has not been an assessment of treatment protocols to determine whether treatment is being done properly. For effective treatment, providers will have to comply with the Standard Treatment Guidelines but this is yet to be verified. A policy maker explained;

So apart from, I can say, clinical management, that one I am sure they go to training once a while and even that you can't say it's perfect because we haven't really done much assessment to see the treatment regime to know whether they are complying with the guidelines.

Providers interviewed in the urban setting explained that a range of treatment services are provided. Services provided include counselling services, foot care, neuropathy and retinopathy assessments, using dummies to train patients and immediate relatives on self-insulin injections, general laboratory services, minor surgeries, pharmacy/dispensary services, and training immediate relatives on how to support patients. Patients are encouraged to acquire their own glucometers and sphygmomanometers to ensure that they monitor their condition for effective management. Other support services such as a 24hour calling system have been instituted. A provider commented on services provided;

We have our lab, pharmacy, consulting room and this is the education centre. So all in one and once you step here, you have all the services you need. And we have a collaboration with other organizations who come periodically to do neuropathy assessment for our clients so that we know the stage they are, whether their nerves are not affected.

Key informants in the rural setting provide clinical care for patients and believe that given the resources at their disposal, they are providing good clinical services even in acute situations for patients with high creatinine levels and bad urea secondary to HTN. Respondents stated that increasing cases of diabetic ketoacidosis (DKA) or Hyperosmolar Hyperglycaemic State (HHS) have been managed well. Patients with complications are taken care of as far as facilities and resources allow. Specialists come from other facilities such as the Cape Coast Teaching Hospital (CCTH). Facilities are limited for tertiary or rehabilitative services. Patients are usually referred to teaching hospitals such as CCTH or Korle Bu Teaching Hospital. Some providers commented as follows;

But when it comes to the clinical, I think we are doing our best. I really think we are doing our best because per the way we manage them, may be a DKA or HHS we manage them to the best of our abilities.So in terms of the protocol, I think we follow what has been outlined. For the emergencies, yes, we request for all the investigations that we need. Try to pinpoint what tipped them to DKA or HHS,

whether it was their non-compliance or an underlying infection. We do our searches, screen them and deal with that as well.

Normally the first line is the calcium channel blockers. So Amlodipine or Nifedipine especially when you are doing a monotherapy. But when you are doing a combined therapy, we usually add a diuretic, a thiazide diuretic or the ACE inhibitor like the Lisinopril.

Providers believe that treatment services could be improved but at the moment, they handle most of the cases to the best of their ability. Another informant stated;

There is always improvement in everything. Normally we do our best. Those who are bedridden, they come and we do bed bath, treat pressure areas, some people have sores on their sacral region, their back and all that but we try our best to handle all that. So with the facilities we have, we try our best. I think it could be better but we do our best.

Responses from patients in focus groups suggest that they are satisfied with treatment and believe that once a patient gets the condition, providers do their best to manage it. Some patients shared their views on service delivery;

I think the main issue is regular attendance to the hospital. If we didn't come to the hospital, we wouldn't be part of this discussion now and learning from each other. So going to the hospital means you will always hear something on how to manage yourself. You will receive your medication, know the right medicine for you through your doctors and if there is an emergency, you will be better managed [FG 2].

I think we receive the care that we need. At least even if you don't have money, you know that when you come you will get some medication [FG 1]

You see when I started I said that for the doctors if you get to see them, they do what is expected of them. When I was coming here, I had problems with my legs. They used to get swollen when I sat down.... When I came and I did some tests here, they told me it's my condition and ageing which has accounted for the swollen legs. So the doctor that I met helped me a lot and referred me to a therapist who massaged my legs and encouraged me to follow an exercise programme [FG 2].

As part of service delivery, wellness programmes have been planned in communities, clinics and schools. The essence is to introduce a form of outreach clinics which will make HTN/DM health services available to people at important locations (National NCD Policy - MOH, 2012a). This was explained by a policy maker;

Wellness clinics are more or less like outreach clinics which will help monitor people at vantage points both public and private. So people should be able to walk in and

check their BP, BMI and other things. So wellness clinics is going to be a major plan in the management of these conditions going into the future.

5.3 Summary of Findings

This chapter has shown that the Ghanaian health sector recognizes the increasing NCD burden and mortality in Ghana. Informants appreciate the enormity of the NCD situation and recognize the need for urgent action to manage adverse effects and deal with the psychosocial effects. Key informants believe the HTN/DM situation is better understood by comparing it to communicable conditions as well as the increasing risk factors.

Several international resolutions and frameworks have been ratified in response to management of HTN/DM. These have influenced the development of national policies and programmes that underpin the policy framework for management in Ghana. A national policy was drafted in 2012, and a strategy which provides the overall roadmap for HTN/DM management and other NCDs in Ghana followed shortly. Other policies and regulations have been enacted to manage risk factors. Tobacco Control Regulation and Smoking Cessation Clinical Guidelines have been launched; a National Alcohol Policy has been introduced to regulate the production, distribution, sale and consumption of alcohol; and a Nutrition Policy has been established to scale-up evidence-based nutrition interventions for managing HTN/DM and other conditions. The NCDCP and the RHNP are two main programmes established specifically to respond to the HTN/DM problem in Ghana. Other activities are also ongoing as part of routine response to HTN/DM management. These include education, screening, financing, research, and service delivery activities.

In the next chapter, the main barriers that obstruct response effort are presented from analysis of interview, focus group and documentary data.

CHAPTER SIX

Barriers to Hypertension and Diabetes Management in Ghana

Efforts to respond to HTN/DM in Ghana have been hindered by several barriers to effective management. This chapter describes themes/subthemes on political barriers (Section 6.1), health system barriers (Section 6.2), societal barriers (Section 6.3), and clinical barriers (Section 6.4) to the management of HTN/DM in Ghana, with a final section summarising these.

6.1 Political Barriers

Two main themes emerged as political barriers to HTN/DM control. These were low political commitment to fighting NCDs, and a tendency for political leaders to travel overseas for treatment due to lack of confidence in the health system to effectively manage NCDs.

6.1.1 Low political commitment. The relevance of political commitment to the implementation of NCD policies has been acknowledged in policy documents (National NCD Strategy - MOH, 2012b). However, this continues to be a major challenge as very little priority is accorded to NCD management by political leaders and development partners (National Alcohol Policy – MOH, 2016a). Evidence shows that a major barrier to Ghana’s fight against NCDs is that “management of NCDs have not been prioritized” by development partners and government of Ghana (GHS Annual Report, 2016 p.121). This has been made explicit as follows;

There is limited political interest in NCDs with consequent low priority and low funding. The development partners provide little or no funding for the control of NCDs (National NCD Strategy - MOH, 2012b, p.18).

Key informants explained that for NCDs to be given priority in Ghana, it must fit into the plans of the government. However, in most cases very little effort is put into NCD management by government. Moreover, a lack of continuity regarding the implementation of HTN/DM programmes by successive governments has negatively affected progress. Some respondents expressed dissatisfaction with current political attitudes towards the continuation of policies and programmes meant to facilitate NCD management begun by previous administrations. Issues raised included cancellation of existing tax arrangements on the importation of HT/DM medicines and delay in implementing proposed levies on corporate entities with salt and sugar content of products above recommended or approved levels. This was explained by a respondent [KI 26] as follows;

So the politics of the day is no doubt affecting policy and our activities. So in effect, what we did was to get a tax policy running after we managed to secure a VAT waiver for importers of diabetes products and that as I have said stabilized the prices of products. But prices have escalated again after the new administration took over and the policy was abolished. Some major suppliers are complaining about new policies in the port which require them to pay about three times the cost of the strips now. As we speak now, we have planned to introduce sin taxes... things like Coca Cola, Fanta and biscuits, we should be able to control their sugar content such that if your sugar content moves beyond a certain limit, you pay a tax which goes to the advocacy groups. This is fully implemented in Nigeria and Senegal. In Ghana, it is a big problem.

6.1.2 Overseas treatment. The lack of confidence by key political actors in the ability of the health system to handle HTN/DM complications was found to negatively affect HT/DM management. In particular, it was found that key political actors were more concerned about seeking treatment for complications of HTN/DM in Europe and United States. As a result, not much attention is devoted to committing resources and improving existing institutions as far as NCD management is concerned.

Another issue we forget is that these people (politicians) don't seek treatment here..... There was a time they were going to send an important personality abroad for treatment..... I was asking a few questions when the minister called that if the doctor cannot treat him, he should stop so that he is flown abroad..... I finally cancelled all the drugs he was on, told him he did not need all those things and asked him to go and drink more water. At the end of the day, the man now goes around the ministry telling them that he now attends hospital here in Ghana. Instead of them to devote attention to the system here, they are interested in going for treatment abroad because they can afford. What about those who cannot afford that kind of treatment?

6.2 Health System Barriers

Findings suggest that some factors hindering management of HTN/DM can be traced to the health system itself.

6.2.1 Poor intersectoral partnership. Although there is recognition of the benefits of inter-sectoral action for health in Ghana as it “remains a central theme guiding the implementation of all activities” (GHS Annual Report, 2002 p.2), a lack of coordination and partnership among agencies, ministries and departments on management of HTN/DM was reported to be a major barrier (GHS Annual Report, 2014). Policy makers acknowledge that managing HTN/DM should

not be an activity reserved for the MOH (National Alcohol Policy – MOH, 2016a). Key issues such as nutrition have been seen to be multidisciplinary, hence demanding well-coordinated multi-sectoral approaches but this is yet to be achieved (National Nutrition Policy – MOH, 2013). Consequently, an underpinning strategy for HTN/DM management is “establishing and strengthening multi-sectoral structures and mechanisms for improving the coordination and governance of programmes” (National NCD Strategy - MOH, 2012b, p.20). The NCD Control and Prevention Department of the GHS has been tasked to “strengthen partnerships within the health sector and between non-governmental organizations (NGOs), civil society organizations (CSOs), the private sector and the community” (National NCD Policy - MOH, 2012a, p.12). However, not much has been achieved in bringing other stakeholders on board (National NCD Strategy - MOH, 2012b). The way forward, according to policy makers, is to create an entity either within or outside the MOH that is responsible for working on the implementation of cross-cutting issues. This is how KI 1 put it;

The bottom line is that all ministries are working vertically. There is nothing that is bringing them together and that is the bane of the country. How can you be sure that the Trotro (bus) you have boarded, the driver is not hypertensive? So if on the highway, high speed and he has a cardiac arrest, all of you are dead. That is why I am saying that it is a cross-cutting policy that all ministries must play a part. If you ask me, MOH can be the ministry responsible but there should be a ministry that looks at all this crosscutting issues together. So that the coordination is better and implementation becomes smoother.

Another informant added;

.....basically, that inter-sectoral collaboration in terms of health promotion is not there. So you will see vertical implementation and silo implementation of things. If they decide that it is an activity they need to carry out, then agencies carry out themselves [KI 6].

6.2.2 Ineffective leadership. The MOH is empowered to lead, coordinate and monitor NCD activities in Ghana (National Alcohol Policy- MOH, 2016a). The Ministry is charged with the responsibility of establishing and strengthening coordinating structures to manage the national response, and to create multisectoral structures and mechanisms for improving cohesion and governance of HTN/DM programmes (National NCD Strategy - MOH, 2012b). However, some respondents believe that HTN/DM management has suffered from a lack of leadership from the MOH. As the umbrella body in the management of health in Ghana, the MOH has failed to pull other agencies together to work on implementation of policies. Informants explained;

For me I think that the MOH should show leadership. Cross-cutting activities should rest with the Ministry. Health promotion is a national issue. It does not matter whether you are a private or public facility [KI 1].

Over the years, people have shirked their responsibilities. I believe it is the ministry who have allowed GHS to arrogate so much power to itself. If over the years people had not shirked their responsibilities and kept all agencies aligned to the bigger health objective, things would not be like this [KI 4].

6.2.3 Overreliance on treatment. A notable challenge to Ghana's management of HTN/DM is the inadequate emphasis on preventive aspects. This is affirmed by the fact that response to HTN/DM has been on treatment, for example much of the national response "has been on the provision of clinical care" (National NCD Strategy - MOH, 2012b, p. 15). Providers believe that this could partly be attributed to the health system organization and orientation. Respondents stated that stakeholders in Ghana have been trained over the years to treat rather than prevent. Other key informants believe that the role of primary care in the management of these conditions must be improved as is the case in developed countries where patients have specific primary care providers who they see for regular check-ups and who take a strong preventive role. Key informants shared their views;

For us, I think most of the workers in terms of the facilities have been conditioned to managing rather than preventing.So the main issue is that from the grass root, we have all been conditioned, including patients, to manage or cure diseases rather than prevention [KI 12].

Of course in the whole Africa we are doing curative instead of prevention but curative doesn't work. As we know prevention is better than cure but we don't use prevention. All the developed countries use prevention. When you are born today in America, Australia or New Zealand, you have a doctor throughout from the day you are born to the day you die. That is prevention because the slightest thing your doctor will detect and advise. But here, people walk around and when they collapse and are dying, then they carry them to the hospital. Until we attend to the preventive aspects, we won't go anywhere [KI 14].

6.2.4 Weak surveillance systems. Evidence shows weak surveillance systems in NCD management as routine facility reporting is incomplete, with the Integrated Disease Surveillance and Response (IDSR) system being implemented by the GHS focusing mainly on communicable diseases (National NCD Strategy - MOH, 2012b). Following a joint MOH and WHO assessment of Ghana's national surveillance systems and response, a key observation was that even though surveillance structures do exist in the country, they are limited to infectious diseases (GHS Annual

Report, 2011). Although a few NCDs have been integrated into surveillance activities since then (National NCD Strategy - MOH, 2012b), recent reports still show that surveillance activities continue to focus more on infectious disease with specific emphasis on polio, measles, cholera, meningitis, and Guinea worm, with particularly “poor disease surveillance and response at the district level” (GHS Annual Report, 2016 p. 121). In addition, mechanisms to systematically monitor risk factors for HTN/DM are inadequate in the Ghanaian health system (National NCD Strategy- MOH, 2012b). Efforts are, however, on-going to use the Core Welfare Indicator Questionnaire Survey and the Ghana Living Standards Survey conducted by the Ghana Statistical Services to provide information on risk factors for NCDs (National NCD Policy - MOH, 2012a).

6.2.5 Inadequate training programmes. Inadequate training programmes were stated as a key barrier to the management of HTN/DM. For example, some provider participants expressed the need to upgrade their knowledge on HTN/DM to be able to help patients better. This was confirmed in focus group discussions, with patients expressing the need for nurses to obtain training as they felt some found it difficult to answer some of their questions. During interviews, KI 18 commented as follows;

I think the training for nurses to handle these conditions is not enough. Some of us have attended a few in the past but I think we know the old things. It’s possible that new things have come up and we must be educated or kept abreast of these things so that we can help patients with that knowledge. So if we are upgraded on these things, I think it will help.

But what I will say is that, when you train as a health practitioner, it does not end there. There is the need for them to receive up to date training on their work and also on how to handle patients. So the workers need day to day reminders or training from time to time to be able to handle their responsibilities very well. The disease itself is very discomfoting so when you come and somebody does something that scares you a bit, then you want to give up coming to the hospital [FG 1].

In general, the need for continuing education of health workers is deemed relevant for effective management of HTN/DM in Ghana although more resources are needed to bring this to fruition (National NCD Strategy - MOH, 2012b). In order to address these concerns, there are plans to organize more educational programmes for health workers and “continue advocacy for more NCD Control Programme staff and regional focal persons” (GHS Annual Report, 2011 p.80). Also, Ghana’s NCD policy framework makes provision for training programmes to be “organized for NGOs and community organizations in the regions and districts as needed” (National NCD Policy

- MOH, 2012a, p.22). Providers and patients, however, believe more of this is needed for effective HTN/DM management.

6.3 Societal barriers

Other barriers were found to come from the Ghanaian society itself. The value and belief systems and the general approach to HTN/DM revealed some barriers to their management.

6.3.1 Superstitious beliefs. According to providers, some patients believe that HTN/DM have spiritual connotations and resort to religious and supernatural approaches to treatment. Consequently, some patients see pastors, native healers and other spiritual leaders for the treatment of HTN/DM. Besides, faith-healing systems have been seen to be a cheaper option compared to allopathic medicine (National NCD Policy - MOH, 2012a). Providers believe that such beliefs mean some patients abandon treatment and come to the hospital when their condition deteriorates. This was explained by KI 10 as follows;

.....They rather like this herbal and the pastor pray-for-me thing than complying with orthodox way of taking the medicine. So the pastors tell them that diabetes is a voodoo disease or somebody has bewitched you, forget about it and come to my sanctuary for me to pray for you. Stop taking the drugs. You are bewitched. And the people come in bad shape and some even come and die. Instead of listening to health workers, the doctors and the prescribers, and taking the orthodox medicines, they don't.

Some providers stated that superstitious inclinations are so ingrained that it is common to find highly educated people disregarding the use of allopathic medicine and seeking treatment from faith-healing systems. In other cases, patients repudiate the outcome of their diagnosis because of superstitions. As explained by KI 19;

I know of professors who, when they are sick, instead of complying with orthodox medicine, also go for 'pray for me' and herbal preparations. Some of them we tell them about their condition and they do not believe it.... probably because there is a lack of education and some too they have these religious beliefs and superstitions.

6.3.2 Illiteracy. Providers believe that the low literacy rate, especially in rural areas, is a major issue in controlling these conditions. This is believed to affect patients' perception of treatment and influences them to discontinue treatment or refuse to go to the hospital. It also means that patients are easily influenced into believing myths and superstitions that surround these

conditions. Some respondents believe that even those who are educated appear to be “illiterate” when it comes to their attitudes and approaches towards seeking help and treatment for HTN/DM. Respondents shared their views as follows;

Also, majority of us are illiterate because we attribute everything to voodoo and witches. There is this lady from the Western region who has diabetes and the husband says if I sleep with you, I may get the disease. But the thing is non-communicable. You cannot get it from another person but because of illiteracy he doesn't know [KI 12].

Illiteracy rate is one issue. I mean lack of education because if people are educated and you are able to demystify all these beliefs about HTN/DM that they are not curable but are manageable, then they will know and also.... most of them they always do hearsay, that is, they listen to what people are saying or what people are telling them. And most often too, the BP when they check for a few times and realize that it's within the normal range, then they think that they are fine so they stop taking the medication [KI 16].

6.3.3 Poverty. Respondents believe that managing HTN/DM cannot be detached from the socioeconomic status of the patients involved. Providers believe that several economic issues hinder the management of HTN/DM in Ghana. For example, most of the things needed to effectively manage patients are provided by patients themselves. Consequently, it is difficult for health providers to provide care effectively as most patients are unable to procure what is needed for their management. The result is widespread inequity in HTN/DM management since there are variations in the services received by patients. One patient's condition is well-managed if he is able to purchase what is required while another's is poorly managed when unable to buy certain items or undergo certain tests necessary for treatment leading to “limited access and inequities” (National NCD Strategy - MOH, 2012b, p. 18). This also means that in most cases, providers manage blindly since treatment may be shrouded in uncertainty, as explained by one provider;

Most of the patients, what they will need for their management have to be purchased by the patient. Some will come and they don't have it. Sometimes you may get the medication but checking the RBS hourly or every four hours to know where you are is going to be a challenge because they have to buy the strips. So financially, the patients are not able to buy the things needed, such as the RBS strips. Sometimes too covering other medications, doing investigations to actually know whether you really have electrolyte imbalances with respect to the DKA or HHS is going to take a long time for you to get that results. So sometimes we blindly manage the patients for something that you may think without knowing exactly what you are doing [KI 13].

6.3.4 Corruption. According to key informants, corruption is a major challenge to the management of HTN/DM in Ghana. A startling revelation was that people in key positions have embezzled funds meant for HTN/DM projects and programmes. A key issue during interviews was the alleged embezzlement of reportedly large sums of money from the World Diabetes Foundation (WDF) meant for DM programmes. The case which is now in a Ghanaian court has further tainted the image of the country with regards to NCD management, and it has made it difficult for stakeholders to access external support as was explained by a respondent;

We have now been blacklisted internationally because of the corruption scandal that took place. Our famous 40m issue. The 40m dollars that the former head of the Ghana Diabetes Association went to take and pocketed. As we speak the case is in court and the trial is opening on the 24th of November, 2017. So because of that money, we cannot go for any grant, we cannot start any policy and so on. So for now the best we can do is advocacy. So the World Diabetes Foundation gave Ghana 40m dollars, which now they are saying it is 14m rather. But even if it's 14m, we should still see that somebody was trained, or this facility was put here, etc. So on paper a lot has been done for Ghana but in reality, nothing happened.

6.4 Clinical Barriers

Several issues affect the clinical treatment of HTN/DM in Ghana, thereby making management difficult. Nine sub-themes emerged from analysis of interview, focus groups and documentary information.

6.4.1 Reliance on herbal medicine with unproven efficacy. Key informants stated that the preponderance of herbal preparations on the Ghanaian market poses a threat to the NCD fight locally. Some providers stated that the manufacturers of herbal preparations usually attack allopathic medicine on the grounds of adverse side effects; in contrast to herbal treatment which according to them, come from natural remedies with no side effects. Apart from adverse side effects of orthodox medicine, herbal preparations for the treatment of HTN/DM has been seen as a cheaper option, with documentary information indicating many people use ethnomedical remedies because of the cost associated with biomedical treatment (National NCD Policy - MOH, 2012a).

People say it is the failure of orthodox medicine but I don't think so because if you watch TV these days, there are a whole lot of adverts on herbal medications and instead of reading for themselves they always listen to these people [KI 17].

They say that orthodox medicines have a lot of side effects so if you take them, this or that will happen to you so they resort to the traditional medicine and the herbal medication. Now they get serious complications and they themselves will tell them to come to the hospital [KI 18].

Focus group discussions showed that some patients believe complementing orthodox medication with herbal medicine is more effective. Others are also of the view that certain conditions can only be treated with herbal preparations. Consequently, they abandon their antihypertensive medication and use herbal treatment for these conditions with the intention of resuming treatment of HTN later. In Focus group 2, a participant stated;

So even though I was taking my medication, it was occasionally (dizziness) happening to me as I will feel dizzy at work and will be escorted home to rest. So somebody introduced me to Moringa. Since I combined the Moringa with my medication, the dizziness has reduced considerably.

Another patient in FG 2 added;

There is one thing too that worries me. You see pressure may not be the only thing that you suffer from. And the pressure, you need to take your medication every day. Now I also developed kooko (piles) and you know that usually we use the herbal medicine to treat the kooko. So you don't know how to take the local medicine and the hypertensive medicine at the same time..... I am aware of someone who was operated for this condition of kooko and suffered so much. So I am afraid. But the problem is how to take herbal or traditional medicine while continuously taking your hypertensive medication. So I stopped the hypertension medicine for a while to treat the kooko with the local herbs.

6.4.2 Ineffective complications management. Findings reveal that most cases of HTN/DM that are reported to health facilities are in the advanced stages despite Ghana's NCD policy aiming "for persons with NCD symptoms to report to health facilities early enough to improve their clinical outcomes" (National NCD Policy - MOH, 2012a, p.19). The common cases of complications reported in health facilities include strokes and diabetic ulcers. Although providers are able to treat some of these, many of these patients lose their lives. In the rural areas, patients have to be transferred to distant districts or regional hospitals for treatment. The whole issue is compounded by the fact that there is only one stroke centre at the Korle-Bu Teaching Hospital in Ghana; thus making complicated cases difficult to manage. The increasing number of complicated cases have been attributed to inadequate screening programmes and education on these conditions (National NCD Policy - MOH, 2012a). Key informants explained;

Complications mostly it's strokes, blindness, and impotence. Some of them when we control the HTN/DM, we are able to bring them back but others come too late. Some too we refer to the Stroke Centre at Korle-Bu. I know they are thinking of building stroke centres in all the regional capitals but we need to go on outreaches, screen and fish out those who have the disease so that we can manage them properly and prevent those cases from degenerating to strokes [KI 10].

With the complications, most newly diagnosed cases are either hypertensive urgency or hypertensive emergency. And in the worst case scenario you have patients coming in with stroke [KI 14].

6.4.3 Lack of specialized health services. A major barrier in HTN/DM management in Ghana is the limited access to specialized care. Specialized services are available mostly in urban areas and at regional and teaching hospitals due to the limited number of laboratory technologists, cytologists, pathologists, physicians, counsellors and health educators in the rural areas (National NCD Strategy - MOH, 2012b, p. 18). Although the referral system in Ghana provides for the services of dietitians and physiotherapists, such health workers are sometimes not readily available even in municipal and regional hospitals. Providers in rural areas align with other facilities to enable these professionals to come in periodically to see patients. The result is undue delays in diagnosis and treatment (National NCD Strategy - MOH, 2012b). Participants in the present study stated that this delay stems from the fact that patients have to wait for long periods or have investigations outside the hospital they visited for treatment. In most cases, patients do not come back or they return with complicated conditions. According to KI 15;

In our set-up here for example, with the clinician, we manage with the pharmacological and advice on non-pharmacological. On their diet we ask them to see the dietitian, which they do. We happen to have the ophthalmologist who come from Cape Coast Teaching Hospital monthly so we recommend as and when, to see the ophthalmologist or may be the optometrist if the ophthalmologist is not around. And then if we suspect any chronic kidney disease then we refer to either Korle-Bu or Cape Coast Teaching Hospital. Thus if the patient is having renal impairment or End State Renal Disease, then we refer the patient to see a nephrologist but in a setting where you have all these specialists, it will be easier to manage so that they concentrate on their routine check-ups.

Patients are usually asked to do laboratory tests at specific places a long way from where they live. This makes it very difficult as they need to travel for several miles to get tests done. In effect, the whole process is delayed and this results in complications. A Focus group 2 patient shared her experience;

About a month ago, I collapsed and was rushed here. So I was admitted at the emergency ward. The doctors were annoyed.....that they asked me to do a CT brain scan and I didn't. He said I was asked to go to Paradise Laboratories in Lapaz, Accra to do the test and I refused. Actually I went to Rigam Laboratories in Swedru Where they did only one test and told me to go to Accra for the remaining tests. So I was preparing to go to Accra for the tests when I collapsed and was brought here.

Attempts have been made to improve levels of skilled staff in different categories in Ghana. However, very little has been achieved, especially in the rural areas, as documentary evidence shows;

There has been gradual improvement in the increasing numbers of skilled staff nationwide in efforts to close the ever-widening equity gaps. Despite these efforts, there has been little impact on rural and remote facilities. Many rural areas lack the minimum number of skilled staff needed to enhance service delivery and quality of care [GHS Annual Report 2014 p.15].

In the meantime, the GHS hopes to address this issue in rural communities by continuing “specialist outreach services” (GHS Annual Report, 2011 p. 81).

6.4.4 Poor compliance and follow-up care. Treatment of HTN/DM has been affected by poor compliance and follow-up care among patients (National NCD Strategy - MOH, 2012b). The issue of poor compliance and follow-up were mentioned by respondents in several stakeholder categories with participants citing self-medication as a contributory factor. Responses suggest that patients go directly to pharmacy shops and purchase their anti-hypertensive or anti-diabetic medications, insisting that it is not necessary to come for reviews as the same medication will be given to them. This appears to be the usual practice for the majority of patients as nearly a third of persons suffering from HTN/DM do not consult a health practitioner but purchase medicines from drug stores for their ailment (National NCD Strategy - MOH, 2012b). For some patients, the concern is that the side effects of the drugs could be detrimental if taken for a long time. Besides, alternative medication such as herbal preparations and religious inclinations all play a role in poor compliance and follow-up. As stated earlier, this causes patients to abandon treatment only to return with complications.

Compliance to lifestyle is also a major challenge in Ghana (GHS Annual Report, 2011). Key informants and participants in focus groups shared their views on poor compliance and follow-up as follows;

For me I think sometimes when they talk about education, they don't tell the side effects of the medication. We should know that the medication have side effects. In my case it got to a time that for a period of three to four months, I could not have sex. That was the first medication they gave me.... [FG 2].

Some of them it's very difficult for them to keep or follow the advice we give them especially when it comes to the diet. For example, let's say somebody eats 2 balls of Kenkey (a local maize diet) and because of diabetes you ask the person to eat half and eat more fruits, the person will not understand. So we need time to explain to them and ask them to start gradually. The food aspect is always difficult. [KI 16].

Probing on how cases of non-compliance are being handled revealed that in most cases, unconventional methods are used to get defaulting patients to comply. Providers use the complications of these diseases to 'threaten' patients to comply. Two providers shared their views on what they have been doing;

To be frank sometimes it is not ethical some of the things we do.... Because if you don't come for your appointment, I will not spare you. I will tell you exactly the dangers you are going through and tell you that you are committing suicide. So when they reported me to the Regional director, they asked me that they say you can tell people that if they don't take their medication they will die. And I said, what are you telling me? If you have HTN or DM and you don't take your medication, do you live? You don't live you die [KI 13].

Me for instance, I try as much as possible to educate the patient about the complications, what the HTN can lead to and the result of the failure to take the medication. I tell them that non-compliance or failure to take the medication could result in stroke, permanent paralysis, or death which is the end result or you can be blind if you have grade 4 or 3 of retinopathy or you can have haemorrhagic stroke, your kidneys can shut down. So I explain the associated complications of noncompliance [KI 17].

6.4.5 Poor counselling services. In clinical care, counselling services for HTN/DM and healthy lifestyles are either lacking or weak due to limited capacity (GHS Annual Report, 2011). Providers admitted they did not do much to counsel patients once diagnosed because of time constraints. In particular, they explained that the number of patients to be seen by doctors did not allow them to adequately counsel patients on all aspects of their condition. An informant explained;

Counselling issue too is a problem. We are not doing well.....And even those at the primary, secondary and tertiary facilities, how many of us can see the patient and take time to explain issues because you have a lot of patients to attend to so lack of counselling is an issue since there is no time.

The issue of counselling also came up in focus groups as patients pointed out the need for health workers to counsel them on their conditions. In Focus group 1, a patient shared her experience;

In Kumasi for example, I know they do education and counselling in the hospitals every month. So if the education is done, you will know that when I went, I was told to do this, eat this but not that. When I went to Kumasi, they told me to add exercise to my routine. So I bought a skipping rope. I skip each morning and sweat before bathing. When I finish and come and check it goes down. So if specific days are used for counselling sessions, I think it will help.

6.4.6 Poor skill levels of nursing staff. Although there is continuous improvement in human resources for health in the urban centres (GHS Annual Report, 2007), the same cannot be said of the health workforce in rural areas (National Nutrition Policy - MOH, 2013). In terms of clinical management, an important issue that came up during interviews was the skill levels of the nurses working alongside medical doctors in HTN/DM management. Some providers pointed out that some nurses are unable to carry out instructions and lack the initiative to take certain decisions. In many cases, nurses fail to act in decisive moments, opting to wait for doctors even on routine assignments they have been doing for a long time. Doctors believe that where they are lucky to work with competent nurses, the recovery of patients is smooth and faster. Inadequate knowledge of HTN/DM among health care workers has therefore been documented as a major barrier (National NCD - MOH, 2012b). This has been seen as a system-wide challenge especially in rural areas as several health facilities lack trained nurses, nurse educators, and counsellors (GHS Annual Report, 2011). One provider explained as follows;

We follow the protocol. But even with that the problem I have sometimes is with our nursing staff. You may come, you know all the protocol and you write it nicely in the folder, but the nurses may not be able to carry everything out as accurately as you would have wanted.so some of our nurses usually do not know what to do. Patients end up in DKA, RBS skyrocketing. Maybe the patient has been switched to a particular medication but RBS goes very high and the patient is in obvious distress, they will probably still wait for you to come. Even setting up to hydrate the patient, they will not do. They will wait for you to come.

6.4.7 Poor access to medication. Ghana's health financing framework, underpinned by efforts to achieve universal health coverage, is anchored on the National Health Insurance System (Ghana Health Financing Strategy – GoG, 2015). Health insurance was introduced to improve access to medicines for the treatment of several conditions (National Health Insurance Act, 2012) including HTN/DM, but this has not been without challenges. These include delays in reimbursement of providers, errors on claims forms leading to arbitrary claim cuts, high

accreditation fees, low tariffs, and cheques not separated into drugs and services under the diagnostic related grouping system (GHS Annual Report, 2014). Documentary evidence shows that access to medication for NCDs, in general, is a significant challenge for the MOH. The Ministry and other stakeholders acknowledge this and plan to address the issue;

There will be improved access to essential medicines and supplies for the care of NCDs. Essential drugs for NCDs will be captured by the Standard Treatment Guidelines and the NHIS Medicines List. There will be advocacy for removal of taxes on insulin and NCD devices such as inhalers, peak flow meters, nebulisers, pulse oximeters, BP monitors, etc. to help reduce the overall cost of NCD care and save more lives” [National NCD Policy - MOH, 2012a, p. 22].

According to providers and patients, these measures are yet to take effect. Two key issues were identified during interviews and focus group discussions relating to medication. The first is the unavailability of some HTN/DM medicines in health facilities, with patients being asked to search in pharmacy shops. For patients in the rural settings, this sometimes means traveling to Accra to buy medicines. The other issue is that in certain instances, medication may be available but not covered by insurance and poor patients find it difficult to access these.

Sometimes too the medication is a challenge. For example, in acute cases of hypertension, getting the hydralazine and labetalol to lower the BP is a challenge. Sometimes you write something and even our pharmacy may not have it. So even the stock of medication to manage the patient is sometimes a challenge [KI 13].

Another issue is the medication. Sometimes when you go they will tell you it's not available.The problem is that if the medication is expensive, they do not give it to us. They will say it is not covered by insurance [FG 2].

6.4.8 Constant change of health personnel. For patients, a major concern was that treatment is difficult because they have to see different doctors almost every time they visit health facilities. This obstructs consistency in treatment as they believe the services they receive differ from doctor to doctor. Patients were also apprehensive about the fact that when they insist on seeing a particular doctor, they are either told off or not given any good explanation. In Focus group 2, a patient stated;

For me when I came initially I was given to one doctor. But when I came the next time I was given to another doctor. I asked about it and the nurses said they are all doctors. I am more concerned about this because the services you receive differs from doctor to doctor. Some of the doctors even welcome you nicely and calm you down before asking questions. Others straightaway question you and ask why you have waited for so long for your BP to go very high before coming to the hospital.

Another FG 2 patient added;

They do not even explain to us. Oh today your doctor is not available so I am giving you to a different doctor. We are human beings and we shall understand. I was told they are all doing the same job so I should not worry.

On probing providers, it was found that this happens as doctors have different schedules, days-off and also attend to emergencies. One informant explained;

The way they do the time table, it differs from time to time. Some doctors come three times in a week. Others, their schedule is drawn using a monthly schedule. So today if you come and meet this doctor, tomorrow you might not come to meet them. Besides, they have their off days, days that they attend to emergencies, and days that they are in the theatre. That is why sometimes it is difficult for them to see the same doctors [KI 14].

Providers stated that the way forward was for doctors to know their schedule in advance and ensure that they give patients review dates when they are sure to be available to see patients.

6.4.9 Limited palliative care. There are limited palliative care services available for those with late stage HTN/DM in Ghana. Clinical interventions are deficient in the use of opiates for pain relief for NCDs as management is often biomedical in focus with little regard for the psychosocial dimensions of NCDs (National NCD Strategy - MOH, 2012b, p.18). Although there are plans to introduce palliative services for improving care for advanced NCD cases through the use of oral morphine (National NCD Policy - MOH, 2012a), not much has been achieved yet. In addition, collaboration between NGOs, hospitals and private institutions for the provision of rehabilitation services such as prosthesis, physiotherapy and re-constructive surgery in selected hospitals has been very slow (National NCD Policy - MOH, 2012a).

6.5 Summary of Findings

This chapter assessed the main barriers to HTN/DM management in Ghana. These barriers came in the form of political, health system, societal, and clinical barriers. Politically, it was found that there is low commitment and priority for NCD management from government and development partners in terms of allocation of resources. Unwillingness to continue with NCD policies of previous governments was found to be a contributory factor, coupled with the fact that key decision makers are concerned with seeking treatment abroad instead of creating a robust health system capable of handling all NCD complications.

The ability of the health system to bring ministries, departments and agencies together to effectively handle cross-cutting issues on NCD management was found to be weak. The leadership role of the MOH was found to be ineffective especially as regards bringing all stakeholders on board for effective implementation of policies and programmes. Respondents also believe a reorientation of the health system to preventive management would be beneficial due to the current overemphasis on treatment. Hypertension and diabetes surveillance was found to be characterized by incomplete routine reporting, emphasis on communicable disease surveillance and poor risk factor monitoring. In addition, inadequate training programmes for health workers handling patients was found to be a key barrier. Superstitious inclinations and illiteracy means that patients consider allopathic treatment as the last resort especially in the rural areas. Poverty was also found to be a major hindrance as in many cases patients have to procure the necessary items for treatment themselves. Corruption and mismanagement of HTN/DM resources have also hindered progress.

Clinically, the reliance on herbal medicine with unproven efficacy was found to be a major challenge. In rural areas, the lack of specialized services means that complicated cases are referred to distant hospitals in cities. Inadequate capacity to handle complications was found to be a contributory factor to many hypertensive and diabetic deaths. The inability of the insurance system to cover all medication means patients struggle to access medicines. Other clinical hindrances reported included poor counselling, constant change of doctors and a low application of palliative care in the management of HTN/DM.

In chapter 7, the wider implications of the issues identified in this chapter as well as chapters 4 and 5 on policy and management of HTN/DM will be discussed in the light of the international literature.

CHAPTER SEVEN

Discussion

The purpose of this chapter is to show how the thesis objectives have been met and to discuss how findings from Ghana align with policy making experiences elsewhere. Section 7.1 summarizes the main findings and Section 7.2 then discusses these results in the light of the policy framework set out in Chapter 1 (Fig 1.5) that forms the basis for a strategic approach to NCD policy. Section 7.3 then examines the findings regarding the prevention and control of the NCD health policy process in Ghana. Section 7.4 provides a short concluding commentary to the chapter.

The overall purpose of the study was to understand the health policy process for the prevention and control of HTN/DM in Ghana. To achieve this purpose, four research objectives were set;

- To examine how policies for managing hypertension and diabetes are developed and implemented in Ghana.
- To assess the way in which evidence is incorporated in hypertension and diabetes policy development and implementation.
- To examine how stakeholders understand and respond to the problem of hypertension and diabetes in Ghana.
- To identify the factors hindering the management of hypertension and diabetes in Ghana

7.1 Summary of Major Findings of the Study

To facilitate discussion of this thesis, the key findings of the study are presented using the objectives as a guide.

7.1.1 Objective 1: To examine how policies for managing hypertension and diabetes are developed and implemented in Ghana. The findings of the study indicate (Section 4.2) that developing policies for managing HTN/DM and other NCDs in Ghana comprises five main stages: problem identification, ‘agenda setting’, policy initiation, policy analysis, and stakeholder involvement. Other steps that may be part of the process include setting up working committees, policy drafts and validation, assent, and launching. Problem identification usually takes place in one of two ways; through a holistic assessment of the health sector by the MOH and its agencies which brings out the problems, or through business meetings that take place between MOH policy makers, and stakeholders or development partners.

Once needs are identified, there is no clear-cut arrangement for policy initiation. Following health system reforms, policy initiation is by law the preserve of the MOH although in practice the GHS sometimes initiates policies. Policy makers at the Ministry expect the GHS which contains most of the people with epidemiological and technical expertise on policy issues, to prepare the technical proposals but allow the MOH to lead the process. In what can be described as a local form of ‘agenda setting’, priority areas to be worked on over the next year or more are then set out and considered, a process usually carried out by the MOH together with development partners. The aide memoire (the result of this process or ‘agenda’ document) for NCDs emanates from this and is usually based on the problems identified. In addition to the need to reduce the burden of the two conditions (hypertension and diabetes), other influences on NCD policy usually include both economic and political considerations. The aide memoire is signed with development partners who provide financial, technical or logistical support. After this, policy makers analyse the problems that the policy is intended to address. The policy analysis stage includes assessment of who is affected by the problem, the extent of the problem, availability of data, resource considerations, etc.

The stakeholder engagement process is spearheaded by the MOH and the GHS. Although respondents indicated that various stakeholders are invited to participate in the development of NCD policies, the findings suggest that this process needs improvement. The following points were characteristic of the stakeholder engagement process;

- Some stakeholders decline to attend policy meetings especially if they are invited by the GHS rather than the MOH.
- Some agencies do not send people who are able to give appropriate input into policies to policy discussions.
- Some representatives, such as those from patient groups, are inhibited from airing their views when all stakeholders come together for policy discussions as they are intimidated by the presence of policy experts.
- There is a need to change approach and engage stakeholders in their organizations instead of bringing all stakeholders together in one place.

Following stakeholder consultation, the next stage of the process involves the setting up of various committees. A Core Working Committee is usually established (at the MOH/GHS) to undertake the formulation of the policy. A Technical Working Committee comprising experienced policy experts assists the Core Working Committee in developing the policy. A Steering Committee then

endorses the work of the Technical Working Committee. Following the work of the committees, a draft policy is produced. The final policy draft is then validated with stakeholders who use this activity to verify their input in the policy. The final steps of the process involve Ministerial assent and policy launching. The policy is launched at agency and regional levels for awareness creation purposes.

Implementation planning is by law the responsibility of the agencies of government, with the GHS as lead agency. Findings show that policies are in place but implementation has been difficult. A number of issues have been implicated in this, particularly a lack of resources for policy implementation, overconcentration on communicable diseases, over-emphasis of implementation effort on clinical aspects and weak intersectoral collaboration.

7.1.2 Objective 2: To assess the way in which evidence is incorporated in hypertension and diabetes policy development and implementation. The present study found that the most common source of information for HTN/DM policy development and implementation was routine epidemiological information from health facilities, surveys and GBD estimates. This information comes in the form of trends in cause-specific mortality and morbidity statistics collected from health facilities and transmitted using Ghana's health information management system, the District Health Information Management System (DHIMS) platform. Cause-specific mortality information is collected annually from health facilities throughout the country and fed into the national database systems. Data is then analysed to ascertain year to year variability in leading NCDs. Health facility mortality and morbidity information is managed by the Centre for Health Information Management (CHIM) under the Policy Planning Monitoring and Evaluation (PPME) Unit. Despite this, availability of cause-specific mortality information for policy development was limited due to lack of completeness and timeliness, and the reluctance of some managers to use the appropriate systems (DHIMS) for reporting information.

The quality of routine epidemiological information was reported to be poor despite the presence of data validation teams at facility and district levels of service delivery and some in-built tracking mechanisms in the DHIMS software. Among the issues affecting the quality of health facility information were a lack of trained health information officers in some districts, logistical constraints such as lack of computers and mortality registers in some districts.

In addition to routine epidemiological information, information from surveys was found to be relevant for policy development and implementation. The most common surveys used were the Ghana Demographic Health Surveys (GDHS) and the Ghana STEPS Surveys. The GDHS, conducted every five years, collects nationwide data on some NCD risk factors – tobacco, alcohol, physical activity, fruits and vegetable consumption, body mass index as well as on blood pressure and biochemical measurements such as blood glucose, cholesterol and triglycerides. The WHO STEPS Survey collects data on NCD socio-demographic characteristics and risk factors, blood pressure and biochemical measurements (fasting blood glucose and lipid profiles). However, respondents indicated that this has not been frequent enough due to lack of funds.

The study found that the GBD estimates from the IHME reported for Ghana have been central to the development of HTN/DM policies. Currently, the PPPME of the MOH has been presiding over the in-country burden of disease estimates. The NCDCP played a key role in the burden of disease study, which was led by the PPME unit of the MOH.

7.1.3 Objective 3: To examine how stakeholders understand and respond to the problem of hypertension and diabetes in Ghana. Study findings suggest that key informants understand and appreciate the burden of HTN/DM and the impact of known risk factors for HTN/DM. Informants indicated that the most common risk factors in Ghana were excessive alcohol intake (attributed by respondents to the failure to regulate the open market system); smoking (especially among the youth), poor diet, and physical inactivity.

This study found that the Ghanaian health sector has responded to the HTN/DM challenge by strengthening the policy framework and developing policies for control of HTN/DM. An overarching NCD Policy was drafted in 2012, and a NCD Strategy providing the overall direction for HT/DM control and other NCDs in Ghana followed shortly. Other policies and regulations have been enacted to manage risk factors. Tobacco Control Regulations (Legislative Instrument 2247) and Smoking Cessation Clinical Guidelines (National Tobacco Control Regulation –MOH, 2016b) have been passed; an alcohol policy has been launched to regulate the production, distribution, sale, and consumption of alcohol (National Alcohol Policy-MOH, 2016a); and a nutrition policy has been established to scale up evidence-based nutrition interventions for managing HTN/DM and other conditions (National Nutrition Policy – MOH, 2013). In addition, Ghana has adopted and ratified several international resolutions, strategies, action plans and protocols in order to respond effectively to NCDs.

Policy response aside, two key programmes have been established for HTN/DM management. The Non-Communicable Disease Control Programme (NCDCP) has been set up to design, monitor, and coordinate interventions for all NCDs while the Regenerative Health and Nutrition Programme (RHNP) has been designed to monitor and control risk factors. It was reported that although a lot of activities have been undertaken, more resources are needed for these programmes to work effectively. Key service and health system activities being undertaken for HTN/DM management include research, advocacy programmes, financing of HTN/DM services and medications, education programmes, screening, and service delivery for HTN/DM care.

7.1.4 Objective 4: To identify the factors hindering hypertension and diabetes management in Ghana. Four sets of barriers to HTN/DM control in Ghana were identified. These were political, health system, societal, and clinical barriers. Politically, the major finding was the low political commitment to NCD management. This was attributed to the low priority given to NCDs by national leaders and the international community, and failure to implement policies on HT/DM initiated by previous administrations in Ghana.

Weaknesses in the Ghanaian health system included poor surveillance of NCDs because most emphasis has been on infectious diseases. Mechanisms to monitor NCD risk factors were reported to be weak, especially at the district level. Training programmes on HT/DM are inadequate although continuing education and training of health workers has been noted in policy documents.

Superstitious beliefs and attribution of HTN/DM to supernatural causes obstructs effective management as some patients consult pastors and spiritual advisors for the treatment of HTN/DM. The result is that these patients do not attend hospitals in a timely way, leading to complications. In some instances, patients are required to acquire some of the items for treatment themselves, hence poverty is a major barrier for HT/DM management. The result of this is health inequity, with those able to afford the necessary tests receiving treatment while those unable to are left on their own. Another societal barrier was corruption. People in key positions have been reported as embezzling funds meant for HTN/DM programmes.

Several barriers were found to the clinical treatment of HTN/DM. The proliferation in the Ghanaian market of herbal preparations with unproven therapeutic claims is a major barrier to HTN/DM management. Self-medication and adverse side effects of both prescribed medications and herbal preparations were also cited as reasons for poor compliance and follow up, with doctors sometimes

using unconventional or even unethical means to get patients to comply. This is exacerbated by the NHIS not completely addressing financial access to HTN/DM medication although a significant number of people are covered under the scheme. Some laboratory investigations and some inpatient services for HTN/DM, however, are not covered. Complications management is also a big challenge, with a single stroke centre in the entire country and no specific facility for the management of DM complications. Furthermore, the non-availability of specialized health personnel such as cytologists, physicians, counsellors, and nurse educators is a problem, especially in rural areas. Counselling on HTN/DM has been poor due to weak capacity and time constraints on the part of health workers attending to a large number of patients.

7.2 Discussion: The Wider Policy Context

Although this thesis focuses on the mechanics of the policy process, this takes place, as noted in Chapter 1 (Figure. 1.5), within a broader policy framework. This section *briefly* canvasses the four policy systems set out in Figure 1.5 and indicates how these are acknowledged in health policy making in Ghana and LIMCs.

7.2.1 The global policy environment. The policy framework (figure 1.5) recognizes the role of the global policy environment in the prevention and control of NCDs. Respondents in this study reported an understanding of the role of globalization and other external influences on HTN/DM control in Ghana. In particular, the role of commercial companies, NGOs and the WHO were frequently mentioned in both responses and policy documents.

The power of commercial companies. The study reinforced the need to strengthen regulatory mechanisms for NCD management, especially the influence of globalization in the food industry. Respondents believe that the entrance into the Ghanaian market of international food companies such as Kentucky Fried Chicken and the failure to regulate their activities represents an enormous challenge to effective NCD prevention and control. The findings of the current study echo the views of Agyei-Mensah and Aikins (2010) who characterize the final phase of globalization in Accra as related to food. In their review, the authors trace the emergence of fast food enterprises, hotels and restaurants in the 1970s and examine the role of fast food companies such as Papaye in changing the tastes and preferences of the middle class and youth. Their findings are in line with studies elsewhere, with Malik, Willet and Hu (2013) indicating that between 1987 and 2002, McDonald global outlets increased sevenfold.

On a broader level the failure to use regulation to modify the consumption of harmful products is the result of accepting the neoliberal position that individuals usually make the best ‘choices’ for themselves. The idea of ‘choice’ has become well-established in the discourse of HICs and is now being transferred to LMICs, while ignoring the low level of control that many people have over their exposure to risk factors (Glasgow and Schrecker, 2016). Thus, while globalization has positive effects including foreign investment and the creation of jobs, the inability to administer a strong policy framework to counter its excesses is a recipe for failure. The neoliberal emphasis on ‘choice’ influences health promotion strategies in many poor countries. This results in efforts being placed on interventions such as education and counselling that may be helpful and non-invasive, but which research shows have little impact on population health (Frieden, 2010). Unfortunately, such neoliberal positions underpin global policy frameworks, with even WHO action plans (WHO, 2008) focusing on individual atomistic interventions while attempting to address NCDs in LMICs (Glasgow & Schrecker, 2016).

The role of nongovernmental organizations and other institutions. As noted in section 5.2.2, respondents believe a significant number of NGOs focus on communicable conditions but also noted that others are contributing in a variety of ways to NCD prevention and management in Ghana, particularly in the areas of screening and advocacy. There is evidence from a quasi-experimental nonrandomized clinical trial in Iran (Sadeghi-Bazargani et al., 2015) that concluded that workshops to train volunteers on HTN is a useful method for NGOs to increase awareness and management of the disease. Non-governmental organizations have been found to provide a number of HTN/DM services ranging from direct public health education to the provision of screening services in many African countries (Azevedo & Alla, 2008; Fasanmade & Dagogo-Jack, 2015). As was seen in section 2.4.2, they are also involved in shaping the agenda process for NCD policies, but for them to exert the needed influence, greater coordination and collaboration is needed with LMIC governments, especially where local capacity is limited. As reported in this study, this collaboration is particularly poor in Ghana where currently, there is no record or central point to assess the activities of NGOs and other institutions, or to estimate their contribution to the NCD fight. This makes it difficult to identify ways in which the government might support and collaborate with these institutions for maximum impact.

The leadership role of the WHO. Within the global NCD policy environment, the WHO has a recognised leadership role. Since 2000 when the first Global Strategy for the Prevention and Control of NCDs was launched, the WHO has presided over a number of protocols, conventions,

strategies, action plans and frameworks to guide member countries in their efforts to prevent and control NCDs. As a specialized United Nations agency, the WHO has provided new visibility in the policy framework to a group of NCD conditions which, taken together, account for a significant proportion of global mortality (Glasgow & Schrecker, 2016). As was indicated in section 5.2.1, Ghana has ratified a number of these conventions, frameworks, and regulations and integrated them into NCD policies. Nevertheless, while recognising the leadership role of the WHO, much remains to be done to support the policy agenda in LMICs, with only 47% having any form of policy on NCDs (Lachat et al. 2013). Also, even the WHO appears to be grappling with the influence of transnational corporations on NCD efforts in LMICs. As far back as 1973, Hacker declared that disregarding the influence of corporate power in public policy discussions is “like Frankenstein with the monster left out” (p.173), a point reflected in recent NCD debates. In LMICs with weak regulatory systems, more needs to be done to control the impact of these organizations especially regarding risk factors such as tobacco, alcohol and poor diet. This works in tandem with the views of Glasgow and Schrecker (2016) who believe that corporate power works to limit the frame of reference for NCD policy, and possibly explains the narrow emphasis of the WHO on risk factors to the neglect of upstream socioeconomic factors.

7.2.2 The national policy environment. This section discusses some of the features of the national environment that can affect efforts to manage NCDs. These were identified through Objective 4 and include two broad components. The first of these relates to the social and economic inequalities within Ghana and other LMICs that are associated with NCDs (Hosseinpoor et al., 2012; Miranda et al., 2008), and the second includes the general cultural features of the social environment that affect public and community responses to NCDs.

Poverty, disadvantage and the social determinants of health. Besides its broader role as a determinant of health in LMICs (Hosseinpoor et al., 2012), poverty was reported, especially in the rural areas of Ghana, as a barrier to accessing health care with patients being asked to pay for some HTN/DM services out-of-pocket. Studies in Africa confirmed the crippling effect of poverty on HTN/DM management, with Azevedo and Alla’s (2008) assessment of diabetes care in several countries affirming this. This trend persists as more recent studies in Ghana and Nigeria confirmed that poverty is the leading determinant of ill-health and NCDs (Fasanmade & Dagogo-Jack, 2015; Aikins et al., 2015). In Ghana, poverty has been implicated in poor NCD self-care practices, including treatment non-adherence (Aikins et al., 2015). In general, poverty exacerbates ill-health

because when patients suffering from HTN/DM are unable to access care, their health worsens, leading to loss of income, pushing them further into poverty (Wagstaff et al., 2018).

This study also reported low levels of literacy in rural areas, consistent with other research in Ghana (Cook-Huynh et al., 2012; Minicuci et al., 2014). Studies have confirmed that higher educational attainment is associated with a lower prevalence of NCDs and their risk factors in both HICs and LMICs (Hosseinpoor et al., 2012). The benefits of education to health accrue at the individual level (through the development of skills and access to resources); the community level (such as the health-related features of the environment where people live); and at the broader socio-cultural level (through social policies, access to educational resources, etc.) (Zimmerman, Wolf & Haley, 2015). That communities are disadvantaged in various ways indicates policy makers need to broaden their understanding of the milieu within which health problems evolve and how health care is delivered, and to see NCDs as a developmental challenge beyond the health system. According to Sen (1999), development is perceived as a ‘process of expanding the freedoms people enjoy’ (p.3) and should not only be perceived in economic terms to include the rise in personal incomes, growth in gross domestic product, industrialization or technological advancement, but the expansion of ‘freedoms’ enjoyed by the people in a nation. These freedoms are determined by factors such as better access to education and healthcare (Sen, 1999). Thus, addressing poverty and development implies expanding people’s freedoms to have access to health, education and other facilities that impinge on the overall wellbeing of individuals and society.

Social and cultural environment. Socio-cultural factors that influence the ability of policy makers to address NCDs were reported by informants. These occur at different levels, including the lack of national political will, corruption in health service activity, and superstitious beliefs on the part of individuals.

Political will. Good governance and political commitment are important characteristics of functioning health systems and decision makers committed to the health needs of their populations (Balabanova et al., 2013). This study reports that some political leaders in Ghana are yet to prioritize NCDs, with failure to follow through on previous governments’ initiatives and to commit essential resources to NCD control. Where increased resources are accompanied by political commitment, results have been positive. A typical case is Thailand, where charismatic national leaders and committed technocrats have more than doubled the average per capita expenditure of other LMICs in an effort to improve the health of the rural poor (Patcharanarumol et al., 2011).

Health leadership for NCD management in Ghana could be improved in different ways; from the top political hierarchy as in Ethiopia where the Prime Minister, Meles Zenawi, and the health minister, Tewdros Adhanom provided effective leadership for health; or from other institutions as is the case in Thailand where the Royal family plays a critical role by conducting annual health conferences and supporting key priority areas in health (Balabanova et al., 2013).

Corruption. Health systems are particularly vulnerable to corruption with the large number of actors making transparency and accountability difficult (Gaitonde, Oxman, Okebukola & Rada, 2016). According to Lewis (2006), corruption is widespread, but more likely to be found in LMICs where resources for health are scarce and institutional accountability remains weak. Although corruption manifests itself in different ways (e.g. bribery, unethical research, collusion, fraudulent procurement practices, etc.), embezzlement was the main form of corruption reported in this study. Corruption is, however, not peculiar to Ghana. For example, Muhondwa et al. (2008) noted that corruption is deeply-rooted in the Tanzanian health system where patients must themselves collude in this, accepting that the only way to access quality health care is by bribing health personnel. More recent studies in Ghana (Kotoh, Aryeetey & Geest, 2018) and Nigeria (Kayode et al., 2013) confirmed the debilitating effects of corruption on the health systems of these countries. The overall implication is that national policies need to strengthen institutional frameworks for enforcement of regulations and standards. In general, planning mechanisms, strong and transparent monitoring institutions, and systematic supervision and reporting are needed to address corrupt practices. External measures through empowered communities may also help ensure accountability at lower levels of administration.

Superstitious beliefs. In general, chronic illnesses have a traditional socio-cultural dimension such as the cultural implications of suffering, with a view in many countries that a person's disease condition is the result of a violation of a societal norm. For example, Turner (1991) indicated that in countries such as Chile, Cameroon, China and Kuwait, some chronic conditions were perceived to be the result of witchcraft, hence metaphysical solutions are sought. In Ghana, superstitious beliefs have been implicated in chronic disease aetiologies, influencing a significant reliance on faith healers for treatment (Aikins, 2003; 2005; 2006; Aikins et al., 2015). It is possible for culture and tradition to play positive roles in the NCD fight in Africa. Many African countries share similar beliefs, traditions and culture regarding disease aetiology. A shared cultural history, common ancestry, language, and colonial heritage among some African countries could be reshaped as a 'socio-political culture' of NCD cooperation. There is a need to identify

which policy initiatives work best given Africa's cultural beliefs and traditions, as such initiatives could transcend national borders, engendering a coordinated approach to NCD management in the wider region, as is the case in the Caribbean where several countries are bringing their common political, socio-cultural, and economic heritage to bear on chronic disease management (Samuels, Guell, Legetic, & Unwin, 2012).

7.2.3 Population health policy. Population health policies for NCD control target interventions for managing risk factors (Gaziano & Pagidipati, 2013). This is fundamental to NCD effort, with up to 50% of NCD mortality averted if risk factors are controlled (Ford & Capewell, 2011). Since there is significant overlap in the risk factors for NCDs, managing common risk factors offers a useful approach to prevention and control of a number of NCDs, with 60% of CVD and cancer burden being attributed to unhealthy diet, physical inactivity and tobacco use (Gaziano & Pagidipati, 2013). However, risk factor control remains poor globally and especially in LMICs (Mills et al., 2016).

Key informants in this study recognized relevance of controlling risk factors and identified the most important ones as low physical activity, tobacco use, excessive alcohol intake and unhealthy diet.

Low physical activity. Studies on physical activity in Ghana have involved new patients reporting to a tertiary hospital (Nelson, Nyarko, & Binka, 2015), adults in an urban centre (Amegah, Lumor, & Vidogo, 2011), and college students (Mogre, Nyaba, & Aleyira, 2014), with varying but low levels of physical activity. Ghana's failure to fully implement the physical activity interventions (safe transport, public education, school and work-based physical activity programmes) in the NCD Strategy could possibly contribute to the persistence of low levels of physical activity. Only a few LMICs have assessed and acted upon their physical activity needs (Gaziano & Pagidipati, 2013) as initiatives have been fragmented with no central bodies for coordination (Hazzaa & Almazooqui, 2018). In Africa, Guthold et al. (2011) evaluated physical activity levels in 22 countries and concluded that activity levels of 83.8% and 75.7% for men and women respectively were consistent with WHO recommendations. Although the prevalence of physical activity ranged from 46.8% in Mali to 96% in Mozambique in the study, these were related to work and transportation purposes. Physical activities during leisure times were consistently low across countries. To increase physical activity levels, Ghana and LMICs need to implement policies on urban design and land use to support physical activity programmes. Following the

‘Healthy City Initiative’ (WHO, 2010b), this may include improved infrastructure such as street lighting, recreation and physical activity centres and parks, and improved street aesthetics. However, in many LMICs, such facilities are yet to become available.

Tobacco use. Smoking was reported as a key risk factor by informants in this study. Nevertheless, it was reported that current efforts have yielded good results with Ghana maintaining low levels of adult smoking compared with other countries. Wu et al (2015) in a comparative study found that among the countries studied (China, Ghana, Mexico, India, Russia and South Africa), Ghana had the lowest prevalence of daily tobacco use of 7.7%. LMICs to have implemented measures for tobacco control with bans on tobacco advertising enforced include Ghana, South Africa, Thailand, and Egypt (Alwan et al., 2010). With regards to tobacco taxation, the evidence is less encouraging. Raising taxes on tobacco products has barely been used in LMICs despite research showing that a percentage increase in taxes would trigger a double reduction in smoking in LMICs compared to developed countries due to the price elasticity there of tobacco products (Gaziano & Pagidipati, 2013; Ho et al., 2018). While taxes make up two-thirds of the price of tobacco products in developed countries, they constitute less than half the price in many LMICs (Gaziano et al., 2009; Gaziano & Pagidipati, 2013). For example, Ghana’s current excise tax of only 13.02% on the retail price of cigarettes is far below the WHO benchmark of 70% (Sarpong, 2018), an indication that tax increases could be a good weapon to reduce the prevalence of smoking even further.

Unhealthy diet. Key informants in this study indicated that poor implementation of the nutrition policy reflects a failure to regulate the market system. Cross-sectional surveys have indicated that poor diet is a major risk factor contributing to the high prevalence of obesity and overweight (Aryeetey & Ansong, 2011; Amega et al., 2011; Obirikorang et al., 2015). For example, the Ghana STEPS survey 2006 indicated that over 60% of respondents were either overweight or obese. Findings are similar elsewhere in Africa (Azevedo & Alla, 2008; Fasanmade & Dagogo-Jack, 2015; Zeba et al., 2012; Hegazi et al., 2015). Regulation of levels of trans-fatty acid (TFAs) in food, displaying labels on the content, as well as lobbying industries to reduce the content of TFAs, are interventions being adopted internationally. However, in LMICs, little is known about the implementation of such interventions (Gaziano & Pagidipati, 2013) despite research showing that vegetable oils used in cooking are partly hydrogenated (Mozaffarian et al., 2006). A few middle-income countries including Brazil and Argentina have introduced mandatory

labelling in an attempt to control TFAs in food (Pérez-Ferrer, Lock, & Rivera, 2010). Such interventions are, however, yet to be considered in Ghana.

Excessive alcohol intake. Respondents attributed excessive alcohol intake to a failure to implement the National Alcohol Policy. Results from studies of alcohol prevalence have been mixed in Ghana. Among rural dwellers, Addo (2006) found that alcohol consumption was not significantly related to HTN while Agyemang (2006) found alcohol to be significantly related to blood pressure levels in men. Like Ghana, other countries in Africa have not yet implemented the strategies in the WHO Global Strategy for the Harmful Use of Alcohol. As of 2013, only ten countries had fully implemented guidelines regarding public availability of alcohol, only eight had fully implemented regulations on alcohol advertisement, and just thirteen had fully implemented tax policies to regulate the use of alcohol despite the benefits associated with such a policy (Nyaaba et al., 2017). To manage the excessive intake of alcohol, Ghana needs to strengthen mechanisms for implementing the alcohol regulations, especially the importation of alcohol products and the regulation of the local market. Alcohol taxation may play a part in this, but most important is resourcing and strengthening key institutions to enforce regulations on alcohol and alcohol products.

7.2.4 Health services policy. In chapter one (Figure 1.5), it was emphasized that the policy framework should focus on responsive health services that address demand and empower patients to make decisions. The findings of this study suggest that participants understand the scope and potential of health services for HTN/DM control and what a comprehensive service should look like. The findings show that service delivery programmes, service improvements and efforts to improve financial access to NCD services are of high priority.

Programmes to support NCD policy. In Ghana, two programmes underpin health services policy for NCD prevention and control. The Non-Communicable Disease Control Programme (NCDCP) is a coordinating hub for NCD activities in Ghana and responsible for planning and undertaking advocacy programmes, NCD research, and conducting NCD promotion activities. It is also responsible for risk factor monitoring although tobacco control is managed separately by Ghana Health Research Directorate with support from Health Promotion Department and the Family Health Directorate of the GHS (Tagoe & Dake, 2011; Bosu, 2012). On the other hand, the Regenerative Health and Nutrition Programme (RHNP) uses workshops and educational campaigns to sensitize communities to make better lifestyle choices. The programme uses

behaviour change communication, the creation of conducive environments, building of local capacity and partnerships to promote healthy lifestyles and encourage good dietary practices. Just like bodies established in other African countries for similar purposes (Juma, 2017; Nyaaba et al., 2017), these programmes are hampered by limited funds, skill shortages, and poorly defined programme structures at the lower levels of health delivery (Bosu, 2012). Although these programmes have been useful in controlling NCDs in Ghana (Tagoe & Dake, 2011), it has been recommended that they be integrated into the disease control systems of the GHS in order to attract stakeholder support (Aikins, Boyton & Atanga, 2010).

Financing NCD services. Study participants recognized that robust financing is fundamental to ensuring access to NCD services, with Ghana introducing social health insurance for this purpose (Agyepong & Adjei, 2008; Witter et al., 2013). Bosu (2012) confirms that common NCD medication and laboratory investigations are covered under the insurance scheme but, consistent with this study, he was quick to add that not all medications and investigations are covered, with investigations such as echocardiography and angiography, and medications such as Candesartan and Ramipril outside the scheme. Health insurance has contributed to reducing out-of-pocket expenditure on HTN/DM, but financial access remains a problem (Aikins, Unwin, et al., 2010). This study found that certain measures to ameliorate the NCD financing problem are planned, including allocating earmarked funds for NCD control, increasing resources allocated to NCDs, including screening provisions in the NHIS package, and mobilizing resources from the private sector. These initiatives are under discussion but yet to take effect.

To ameliorate the shortage of funds, measures are being taken to improve financial management in the health system. Government now requires public works and services to receive the approval of the Public Procurement Authority (PPA), and that public officers deal only with vendors sanctioned by the PPA. In addition, the Ministry of Finance is introducing online payment systems in all public transactions in order to tackle unverifiable payments. The Ghanaian government has introduced two instruments to help increase efficiency and reduce cost, especially of pharmaceutical services and products. A gazetted Executive Instrument (EI 181) restricts the manufacturing of selected pharmaceutical products to local manufacturers while a Legislative Instrument (LI 2255) is being used to grant VAT exemptions on the importation of pharmaceutical inputs, packaging materials and imported finished products.

Service improvements. Findings of the study detailed ongoing service improvements in HTN/DM in early detection and screening, education, primary care, treatment services and advocacy.

Early detection and screening. Although mass screening exercises are not usually recommended (Azevedo & Alla, 2008), asymptomatic and high risk people can be encouraged to undergo screening. In Ghana, as in many African countries, lack of early detection of HTN/DM cases results in people presenting at health facilities at more advanced stages and with a high number of complications (Gning et al., 2007). This study reported that screening is usually opportunistic in Ghana although the ability to screen and treat is available at all levels of service delivery. In general, there is a failure to integrate screening and early detection into routine service delivery in Africa, especially in rural areas. Mbanya et al. (2010) found that 67% of rural dwellers were unaware of their diabetes prior to the survey compared to 57% of urban dwellers. Interestingly, in Nigeria, groups and private individuals have established institutions that provide screening to supplement government efforts. Institutions such as the Strategies for Improving Diabetes Care in Nigeria (SIDCAIN), and private individuals including Dr. Soni Kuku and Senator Lee Maeba (whose father died of diabetes) have established philanthropic organizations that provide screening services for Nigerians (Fasanmade & Dagogo-Jack, 2015).

Education. According to this research, most patients are diagnosed before they learn about HTN/DM, indicating that awareness level in the general population is probably low. A few studies have been conducted in Ghana with awareness levels of HTN ranging between 24% and 54% (Bosu, 2012). This current research shows that education programmes are more likely to occur in urban areas as found in other studies in Ghana and in parts of Africa (Ovenseri-Ogbomo, Abokyi, Kufuor, & Abokyi, 2013; Kayima et al., 2013). This situation could be attributed to a lack of health literacy—the inevitable result of a lack of capacity to find, understand and use health information in personal decision making (Walsh, Shuker & Merry, 2015). Research shows that patients with greater health literacy are more likely to achieve glycaemic control than patients with lower levels (Schillinger et al., 2002). In the Middle East and North Africa and particularly in Egypt, Hegazi and others (2015) found health literacy to be low, suggesting that people often see DM as a normal part of life rather than a disease. A more coordinated effort in HTN/DM education among institutional stakeholders is needed for maximum impact as strengthening the links between state institutions and civil society have been found to facilitate response effort (Schmitt diel et al., 2015).

The role of primary care. The findings of this study show that HTN/DM services are provided in both primary and secondary care settings. Internationally there is a flowering of the role of primary care for NCD management (Beaglehole et al., 2008; Maher et al., 2012) since the burden of HTN/DM, as well as the economic implications, point to the relevance of a response effort pivoted on primary rather than secondary care. Consequently, a key indicator in the WHO Global Action Plan 2013-2020 is for member countries to institute appropriate evidence-based national guidelines for NCD management through a primary care approach. As the entry point to the health system, primary care successfully delivered preventive care for communicable disease management in many countries, with some experts agitating for the application of this approach to HTN/DM (Maher et al., 2012). However, after analysing WHO NCD country profile data, Nyaaba et al. (2017) found that in 2014, only 17% of countries in Africa had guidelines for NCD control through a primary care approach, with this declining to 4% in 2015. The primary care system is clearly under-developed and reported as fragmented, unsafe or misdirected in many countries (Maher et al., 2012). In Ghana, The Buddy Doctor and the Base of the Pyramid initiatives being implemented in the Ga South Municipality could be crucial for effective primary care approach to HTN/DM prevention and control. These initiatives, however, are available in only five municipalities, so it will be important to extend these to other areas of the country.

Treatment. The study found that treatment for HTN/DM is available in both urban and rural settings in Ghana. As in other countries, both high and low income, although effective treatment is available, a considerable number of people do not have their blood pressure and sugar levels controlled (Gaziano & Pagidipati, 2013). Kayima et al. (2013) indicated that intervention for HTN was consistently low in all eight regions of Africa with the North African region having the highest levels of treatment. A number of reasons have been cited for the low levels of treatment of HTN/DM in LMICs, including poor health systems, non-compliance, inadequate human resources, and cost of treatment (Aikins & Koram, 2017). Confirming previous research, it was reported in this study that cost of treatment is a major issue affecting HTN/DM effort in Ghana. For example, although a few years have passed, Aikins (2007) reported in 2007 that, while the minimum wage was USD 2 per month in Ghana, the monthly treatment cost of diabetes complications such as dialysis for end stage renal failure was about USD 1383 per month, making it very difficult for patients to access treatment. Thus, the need for LMICs to adopt cost-effective treatment interventions cannot be overemphasized. For example, research shows that aspirin, angiotensin-converting enzyme inhibitors (ACEIs) and beta-blockers can be used independently to lower the

risk of vascular problems by about a quarter. However, when taken in combined therapies, a reduction of two-thirds in vascular problems is expected (Yusuf, 2002). Thus, there are affordable multidrug regimens for treatment of NCDs (Gaziano et al., 2006). LMICs need to persist with efforts to ensure the adoption of cost-effective interventions in secondary prevention to increase access to HTN/DM medications and services.

Advocacy. The WHO underscores the relevance of advocacy programmes in garnering political commitment, policy and systems support, as well as social acceptance to the achievement of NCD goals (WHO, 1998). In Ghana, advocacy, as shown in this study, for HTN/DM and other NCDs is gradually gathering momentum. This is particularly true in the NGO sector but also among other stakeholders and specialist advocacy groups. Research shows that prioritizing NCD advocacy yields good benefits, with Yach et al. (2005) identifying key features of the tobacco control movement which were believed to be helpful to advocacy control programmes for obesity. It is difficult to prescribe a generic framework for NCD advocacy, so understanding the local context is the key to effective action. In Ghana, ‘change agents’ have been trained in NCD advocacy. According to experts, the role of champions or advocates is crucial for success since this ensures that emphasis will not only be put on treatment but on efforts aimed at lifestyle changes to prevent NCDs (Mendis, 2010). The problem in Ghana is that NCD advocacy has been ad hoc, probably due to a lack of local capacity but for maximum impact advocacy effort must be sustained across stakeholder sectors. As a result, some international organizations such as the Inter-American Heart Foundation (IAHF) and National Heart Foundation of Australia (NHFA) have engaged in NCD advocacy capacity building in LMICs including Thailand and Colombia (Shilton et al., 2013).

7.3 Managing the Policy Process

As noted in chapter 2, there has been limited research on the policy process for NCD prevention and control in Africa although this is pivotal to the success or failure of policies. This section discusses the policy process for the management and control of HTN/DM in Ghana. It draws from discussions in the literature as well as the findings of the study, and puts emphasis on the broad areas of policy development, implementation and the use of evidence.

7.3.1 Policy development. Stakeholders explained how policies have been developed for controlling HTN and DM. The key aspects discussed in this section include policy leadership, the local context for policy development, and the stakeholder engagement process.

Leadership. The usual practice in many LMICs is for the MOH or health department to spearhead the NCD policy initiation process. In Nigeria and Kenya for example, the MOH led most of the NCD policies while in South Africa the Department of Health led most of the NCD policies with support from other organizations such as the National Campaign against Smoking and the South African NCD Alliance (Juma et al., 2018a). Mohamed, Juma, Asiki and Kyobutungi (2018) affirm the leadership role of the Kenyan MOH in the development of the tobacco policy although this was ably supported by civil society. The health ministry also led the NCD policy development process in Uganda and Zambia (Omar et al., 2010). The present study (as shown in section 4.2.2) revealed that in Ghana, the situation is somewhat different. Although policy documents (as stated by law) allocate policy initiation functions to the MOH, the GHS (the operational institution charged with the implementation of policies) sometimes leads the initiation process. This reflects the presence of policy experts in the GHS, although the lack of clarity in the policy process could be inimical to effective policy development (Sakyi, 2008). This present study found that the GHS initiating policies appears to undermine the authority of the MOH and affects the willingness of stakeholders to be involved in the process. This is supported by research from Malawi, where it was found that NCD policy development was seen as a national issue that attracted a higher participation because government ministries led the process (Mwagomba et al., 2018).

Ghana's policy initiation process for NCD management also differs from other countries in the way that other agencies contribute. For example, agencies outside the MOH and the GHS are invited to take part, but do not usually play leading roles in the process. Juma et al (2018a) found that in other African countries, institutions outside the health department may be very influential in the policy process, especially in the development of specific risk factor policies. In Malawi for example, an NGO, Drug Fight Malawi, played a leading role in the drafting of the alcohol policy after it rejected another initiated by interested industry players (Ferrera-Borges et al., 2014). In Kenya, the National Authority for the Campaign against Alcohol and Drug Abuse (NACADA) worked on proposals which culminated into the country's current alcohol policy (Juma et al., 2018a).

It must be noted that not all health policies in Ghana go through this policy initiation stage. In the past, some policies have been initiated unconventionally, for example, by presidential pronouncement. In these instances, policy guidelines have been prepared quickly without recourse to formal policy processes (Witter, Garshong, & Ridde, 2013), creating implementation problems later (Agyepong & Adjei, 2008). However, in a broader policy context, such unconventional mechanisms are to be expected. Exworthy(2008) for example, states that in developing policies it may be more helpful to conceive the policy process as disjointed and messy; a point which is consistent with the views of John (2013) who averred that there is only a middle point in the policy process but no starting or endpoints.

The context for policy development. Study participants connected the ‘agenda setting’ process to NCD needs, implying that the HTN/ DM ‘agenda’ is influenced by the rising disease burden and the need to control these conditions. This is consistent with the findings of Ndinda et al. (2018), who found the increasing burden of NCDs in South Africa was a factor in making NCDs a priority on the health agenda. The realization that HIV/AIDS patients on antiretroviral therapy were living long enough to contract NCDs, thus adding to the mounting burden, was an added incentive to prioritize NCDs. On the other hand, economic considerations were reported as reducing the priority given to NCDs in Ghana, with the lack of economic resources having a negative effect (Section 4.2.4). This could explain why there is low commitment to NCDs in many African countries. For example, Juma et al (2018b) found that in some African countries (such as Nigeria, Malawi, South Africa and Cameroon), financial resources to facilitate NCD policy development were limited, with civil society organization (CVOs) and NGOs participating in policy meetings at their own expense. This has the potential to limit the way they can influence NCD policy, both preventing efforts to propel NCDs onto the policy agenda, and affecting subsequent stages of policy development in these countries (Aikins, Boynton, & Atanga, 2010).

Political considerations were also found to affect the extent to which NCDs were part of the health agenda in Ghana. In general, the way issues are framed regarding their impact on health, development, economic or equitable opportunities and the extent to which this appeals to key political actors influence how buy-in is achieved from various sectors. The impact of political considerations on the health agenda resonates with the findings of Rasanathan (2017), who found that the health benefits of the ‘sin’ taxes for tobacco and alcohol in the Philippines were not enough to sway political support for the legislation to be treated as a priority. However, support was forthcoming once additional revenues from these higher taxes were to be allocated to finance the

politically popular universal health care programme. This responsiveness to the political environment is seen elsewhere. For example, in Liberia and Burundi where pressure from opposition parties encouraged inclusion of NCDs on the health agenda, compelling leaders to make rapid decisions (Meessen et al., 2011). In other instances, including NCDs on the health agenda has been influenced by public opinion, as recorded in Zambia (Omar et al., 2010), or by international donor agencies; as was the case in Liberia, where such agencies are very influential (Meessen et al., 2011). Apart from the disease burden, economic and political considerations, other studies identify gaps in routine health performance as influencing the inclusion of NCDs on the health agenda, for example, in Uganda (Omar et al., 2010).

Stakeholder involvement. The present study found that various stakeholders (payers, patient organizations respondents, advocacy groups, etc.) are invited to participate in NCD policies. Similar results are reported in other studies on NCD policy development in Africa (Mwagomba et al., 2018; Nyaaba et al., 2017). In Ghana, it was obvious that not all stakeholders participated, despite some key informants advocating for the involvement and participation of private sector representatives. This may be due to a lack of interest in the process by these stakeholders but is in contrast to the situation in other countries such as Nigeria, Kenya and Malawi, where the private sector was involved in NCD policy development (Juma et al., 2018b). In general, the number of stakeholders involved in HTN/DM policies in Africa differs from country to country and from policy to policy. Stakeholder inclusion was high in Malawi during the alcohol legislation (Mwagomba et al., 2018) and in Nigeria, during the development of the tobacco policy but low during the development of the other NCD policies (Oladepo et al., 2018). In South Africa, it was a concern that a lot of institutions involved in the sale of food to the public were not involved in salt legislation (Juma et al., 2018a).

In this study, an important issue was found to be the method of stakeholder engagement. Findings revealed that policy makers are now planning to go to individual stakeholders, rather than bringing all stakeholders together in one place for engagement, an indication that previous policies could have benefited from a more targeted engagement process. The findings also showed that the way the engagement process has been conducted over the years allowed the input of some stakeholders to be marginalized. For example, the study found that representatives from patient organizations feel intimidated when all stakeholders come together. Additionally, some stakeholders do not send the most qualified and experienced representatives to policy discussions. Thus, although stakeholders were engaged, the full benefit of their participation may not have been achieved. This

corresponds to Juma et al. (2018b) who found that in many African countries, stakeholder engagement has often been characterized by nominal inclusion rather than a multi-sectoral collaborative effort, with most representatives just reporting to policy meetings without making any contribution. This is concerning when one considers that NCD policy development process in many African countries begins with a lack of information (as in Ghana and Zambia) or inadequate and inappropriate information (as in South Africa and Uganda) (Omar et al., 2010).

Stakeholder engagement in HTN/DM policy development presents different challenges in different countries. In Ghana these included: the way stakeholders were assembled, some agencies not turning up for meetings especially when the process was spearheaded by the GHS, and the ‘right’ people not being sent by agencies. The challenges in other African countries are different. In Malawi, lack of resources to engage a wide variety of stakeholders, competing interests from different stakeholders, and coordination problems have been noted, especially in the development of the alcohol policies (Mwagomba et al., 2018). In Nigeria, a lack of clarity on authority and ways of obtaining resources, conflict of interest regarding the modus operandi of different sectors and their relationship with the tobacco industry as well as coordination challenges, negatively affected stakeholder engagement in the development of tobacco policies (Oladebo et al., 2018). Also, as reported in Ghana, the policy development process in some African countries has been poorly documented, making it difficult to track the actual contribution of each stakeholder to the policy development exercise (Juma et al., 2018b).

7.3.2 Implementation of policies. The study also investigated how policies for controlling HTN/DM are being implemented. The approach, institutions, and some key implementation issues are discussed.

Implementation approach. In Ghana, a statutory body, the GHS, is the lead agency for the implementation of NCD policies in a top-down approach with other agencies. The GHS is responsible for implementation planning for all districts and municipalities, with lower level institutions responsible for carrying out implementation decisions of the national agencies. The findings of the study indicate that NCD policy implementation is not particularly successful. An earlier study by Amoah et al (2000) detailed the effectiveness of a top-down diabetes programme about two decades ago, but with the increasing prevalence of DM since the mid-2000s, it appears that this programme had only a temporary effect. This notwithstanding, the implementation of HTN and DM policies from a central decision making source could promote standardized protocols

(e.g. clinical guidelines) with the additional advantage of enhanced accountability (Sabatier & Mazmanian, 1980; Matland, 1995). However, evidence also points to the suitability of bottom-up implementation approaches particularly in HTN/DM programmes both in HICs (Mendenhall et al. 2010) and LMICs such as Pakistan (Jafar et al., 2011) and Nigeria (Adeyemi et al., 2013). In other instances, a combination of the top-down and bottom-up (integrated) approach has been useful, as was the case in Vietnam (Nguyen et al., 2011). Ghana's approach to NCD policy implementation might therefore require more flexibility, with HTN/DM programmes demonstrating more emphasis on local decision making and exigencies. Policy implementers also need to keep themselves abreast of the evolution of implementation thinking and consider how implementation science techniques, proven to be useful in HICs (Magee et al. 2015), might be helpful in LMICs.

Specific NCD implementation bodies. The WHO expects national bodies tasked with implementation (such as the GHS) to approach implementation planning based on their resources and specific needs (WHO, n.d.). However, apart from the crucial roles of such national bodies, the WHO requires member countries to create inter-sectoral oversight NCD committees that meet regularly to review progress made in policy implementation (WHO n.d.). In Ghana, a National Multi-Sectoral Steering Committee on NCDs has been created for implementation action as stated in the Strategy document, but the extent to which this enhances HTN/DM policy implementation remains, as in other African countries, unclear. For example, although Cameroon established a Multisectoral Expert Group to facilitate effort on tobacco control in 2004, this body was inactive until 2015 (Nyaaba et al., 2017). An Interministerial and Parliamentary Committee has been established in South Africa, Nigeria established the Interministerial National Tobacco Control Committee, while Malawi created an Interministerial Committee for Drugs and Alcohol. These bodies, however, have been ad hoc committees created and disbanded after the performance of specific tasks due to resource constraints, contrary to the recommendations of the WHO for such bodies to meet regularly to plan, develop and review policies and programmes (Nyaaba et al., 2017). In contrast, only a few African countries have functioning institutions for NCD policy implementation. An example is Kenya, where the National Authority for the Campaign against Alcohol and Drug Abuse is well-established and has permanent structures that meet regularly to review implemented programmes (Nyaaba et al., 2017). The institutional framework for NCD policy must therefore be strengthened in Ghana and other African countries for effective policy implementation.

Overemphasis of implementation effort on communicable diseases. Despite the policies developed to manage NCDs, their implementation has been compromised by an overemphasis on communicable diseases. The main reason for this, as reported in this study, has been the misconception held by health authorities in Ghana that communicable conditions pose a greater threat to public health than do NCDs. However, as reported above, HTN/DM are among the leading causes of admissions and deaths in Ghana, and the prevalence of risk factors make these conditions both a threat to socio-economic development and to public health. This is in congruence with Aikins and Koram (2017) that the dominant view in Ghana has been that HTN/DM and other NCDs do not constitute significant threats to the health system compared to infectious diseases, hence their exclusion “from policy analysis and decision making” (p.380). Historically, healthcare in Africa has been designed to respond to infectious diseases, with NCDs and diseases related to environmental conditions and pollution (Vaughan, 1991) receiving less attention in terms of policy and response effort from health planners and national authorities.

This study found that overemphasis on infectious diseases may be propelled by the demands and priorities of donor agencies and development partners. With close to one in every six dollars spent on health coming from donor inflows in LMICs (Farag et al., 2009), donors exert a powerful influence over what health needs are targeted. In general, studies conducted in the 2000s indicate poor support for NCDs with regards to donor funding. According to Ravishankar et al. (2009), although development assistance for health was estimated at about USD 21.8m in 2007, one-third of this was allocated to infectious disease control, one-third to health sector support, and one-third not specifically designated. Stuckler (2008) et al. demonstrated in their study that in 2006/2007, the WHO devoted 87% of its total budget to infectious diseases and only 12% to NCDs, and 1% to injuries and violence. An assessment by Sridhar and Batniji (2008) on the spending patterns of the four largest health donors (World Bank, the US Government, the Bill and Melinda Gates Foundation, and the Global Fund) concluded that in 2005, donor spending was USD 3 per annual death from NCDs compared to USD 1030 per annual death from HIV/AIDS.

Nugent and Feigl (2010) add their voices to this discussion, stating that the continued focus on communicable conditions and the inertia with which donor agencies have responded to the voices of LMICs on the need for increased NCD support, has hindered LMICs from adapting their health and governmental systems to a new set of health risks. Recent evaluations appear to confirm the status quo. For example, in 2014 NCDs accounted for half of the burden of disease worldwide but received less than 2% of global health aid in contrast to HIV/AIDs which, although accounting for

4% of the burden of disease, received approximately 30% of global funding (IHME, 2016). This has been the case for the past fifteen years as international funding for NCDs has remained at 1-2% (IHME, 2016; Allen, 2017). It appears this trend is set to continue into the immediate future. For example, the UN Millennium Development Goals only focused on communicable diseases (e.g. HIV/AIDS, Malaria, etc.). Although current global initiatives expressed in the Sustainable Development Goals identifies NCDs under goal 3, the targets are more focused on infant and maternal mortality, and the eradication of HIV/AIDS, Malaria and TB (UN, 2019). A reorientation of focus that gives adequate attention to NCDs in terms of resources is therefore crucial for the implementation of NCD policies and programmes.

Resourcing NCDs. The most common issue according to key informants and documentary sources in this study was inadequate funds to implement policies. Although the main reason found for low funding for NCD policy implementation in this study was low budgetary allocations, other reasons affected the limited NCD funds for policy implementation in Africa. In the case of Malawi, a lack of sustainable NCD prevention financing mechanisms as well as competing interests among stakeholders, are the main issues facing the implementation of alcohol policies (Mwagomba et al., 2018). In Nigeria, the exceptionally high rates of NCDs means that financial and other resources to implement policies are a big challenge (Uwakwe et al., 2009).

A number of ‘myths’ appear to account for poor support for NCD policy implementation by governments and donor agencies. Among these include the idea that NCDs usually affect rich countries, are the consequences of people’s irresponsible behaviour compared to communicable conditions, are the result of unavoidable consequence of the ageing process, and that these diseases cannot be controlled in a cost-effective manner (Aikins & Koram, 2017). These misconceptions and ambivalence have resulted in a low priority for NCDs by the donor community. A logical question is whether the NCD need is captured in a way that appeals to donors. Some researchers believe that advocates for increased NCD spending usually use disease burden data to present their case. The reality, however, is that donor agencies and governments of most LMICs do not determine their spending proportionately to the burden of disease (Nugent & Feigl, 2010) and are unable to compete with the moral and public health arguments used by communicable disease advocates (Ravishankar et al., 2009).

An alternative argument which appears to contradict the reports in this study, or downplays the seriousness of this argument, states that NCDs receive more attention and funding than actually

reported. Nugent and Feigl (2010) explain that studies on NCD funding assessment usually focus on official pathways of information such as OECD or direct budget information from WHO and other sources, but it has been difficult to obtain or track funding from both profit and non-profit organizations. According to Allen (2017), a significant percentage of NCD funding comes from private philanthropy, and the UK and US governments. However, this information comes from the IHME which does not count money that goes towards NCDs that falls under ‘other’ compartments such as health sector support. Thus, NCD financing is certainly underestimated (Allen, 2017). Nugent (2016) reports that donor funding for NCDs may be 2.5 % higher than presently estimated although this would only account for approximately 4% of total donor support. Although donor support is estimated to rise in the coming years, it may be useful for LMICs to assume more responsibility in financing NCDs by introducing innovative ways of financing (impact investments, loans, engagement with the private sector) while developing mechanisms to boost tax revenues for NCDs (Nugent, 2016; Allen, 2017).

The way forward for Ghana may be a reorientation of the health system towards giving equal priority to the implementation of both communicable and NCD policies. This will not only allow Ghana to address two disease classifications of public health importance, but will also help to reap the benefits that come with integrated and synergistic effort, as is being pursued in South Africa, where the management of the ‘colliding epidemics’—HIV/AIDS and HTN/DM—has resulted in innovative responses which are being extended to patient groups with similar needs for long-term care (Levitt, Steyn, Dave, & Bradshaw, 2011). This is consistent with the current classification of HIV/AIDS as a chronic disease (Nugent & Feigl, 2010).

Intersectoral collaboration. In Ghana, implementation of NCD policies has been affected by a lack of intersectoral collaboration. Although multisectoral action is acknowledged and implemented to some extent during NCD policy development, the same cannot be said during policy implementation. In general, there is a consensus that policy action for NCD management should include support from non-health sectors such as education, trade, agriculture, urban development and information (Mendis, 2010), although in LMICs written policies to this effect do not automatically guarantee implementation (Mendis, 2010). Research in Ghana and Africa suggests that intersectoral action for NCD management remains inadequate, making it difficult for different stakeholders to play their role effectively. Findings here correspond to Juma et al. (2018b) who found that although NCD policy development has been largely consultative in most African countries, this is not entrenched in policy implementation due to inconsistencies in sectoral

engagements. Another study found that the involvement of other sectors in policy implementation has been risk-factor dependent, with more sectors involved in tobacco and alcohol policy implementation but fewer in nutrition-related policies (Juma et al., 2018a).

One reason cited for the low involvement of other sectors in NCD policy implementation is the absence of clear national mechanisms or guidelines in many African countries for engaging stakeholders (Juma et al., 2018a). As found in the current study, this is not the case in Ghana, where there is a Common Management Arrangement Framework (a clear guideline) which sets out the modalities for collaborative effort in the health sector. In Ghana's case, any inadequacies in the process could be attributed to lapses in the leadership role of the health sector. For effective intersectoral action, the health sector is expected to demonstrate a collaborative and distributive leadership across the different sectors. This is demonstrated by the health sector strengthening governance and raising leadership capacity across various ministries and departments. This could assist in building consensus over common commitments and objectives in policy implementation. Ghana can perhaps look into the success stories of other countries such as Rwanda, where it has been realized that controlling NCDs requires a multi-pronged approach and works best where sector-wide initiatives on NCD management have been implemented (Binagwaho, 2012).

Prevention and treatment. The implementation of policies on the management of HTN/DM needs to focus on both prevention and treatment. However, this study has shown that implementation efforts have been largely clinical, with much remaining to be done on the preventive front. In general, studies have shown that implementation of preventive interventions demands emphasis on screening and early detection (Azevedo & Alla, 2008), as well as on population-wide and individual interventions that focus on risk factors. The establishment of dietary and nutritional guidelines, improvements in the physical environment to support physical activities (e.g. creation of parks, community centres, street lighting, etc.), smoking cessation programmes, access to healthy food, counselling programmes, as well as education and advocacy programmes are all known to be crucial in the prevention of NCDs (Guthold et al., 2011). However, these have not been the focus of NCD effort in many LMICs. This is not peculiar to Ghana, with Aikins and Koram (2017) noting that policies in most LMICs neglect prevention and early detection and concentrate on the treatment of NCDs and its complications, and that this has minimal population health impact.

In Ghana's case, the pursuit of short-term visible results in health by governments is attributed to a lack of resources for prevention and the general orientation of the health system. That Ghana's implementation of HTN/DM policies have been clinical is not surprising because NCDs have primarily been conceived as a biomedical problem with response being largely epidemiological and clinical (Aikins et al, 2014). Thus, the concentration on clinical aspects is probably a natural consequence of Ghana's conceptualization and organizational understanding of NCD management. For effective control of HTN/DM, the implementation of an integrated approach to prevention in primary care has been mooted (Kaner et al., 2018). The argument usually put forward is the limited evidence on the care of, for example, type 2 diabetes in primary care in LMICs (Aikins et al, 2014). However, as Beaglehole and others (2008) have suggested, there is no justification, in principle, why LMICs should not adopt the proven integrated primary care approaches used in high-income countries and use behavioural interventions to support clinical services for managing HTN/DM. There are also proven success stories in LMICs, such as Brazil, the focus is now widened to encompass emphasis on health promotion, prevention and inter-sectoral effort leading to a considerable decline in NCDs (Schmidt et al., 2011).

7.3.3 Monitoring and evaluation. For effective NCD control, surveillance systems have been recommended for effective monitoring (WHO, 2003a). Crucial to this discussion is the surveillance and monitoring of risk factors for NCDs. Surveillance is also crucial to evaluating interventions and monitoring progress. This study found NCD surveillance systems were inadequate in Ghana. This finding was consistent with the situation in most LMICs, and particularly in high NCD burden countries where surveillance systems are reported as inadequate (Alwan et al., 2010). Surveillance methods available for policy makers include the WHO STEPs surveillance system, the Global NCD Info base, and the global tobacco surveillance system (adult and youth tobacco surveys).

Studies of the policy process have given little attention to monitoring in Africa. This has been attributed mainly to a lack of data to monitor outcomes, as well as difficulties in implementation (Juma et al., 2018b). Juma et al. (2018a) noted that among the countries in Africa, only South Africa has implemented salt legislation with ongoing monitoring of commercial products, although the legislation overlooks the content in food prepared by institutions such as schools, hospitals and hotels. Using an adapted alcohol policy index, Ferreira-Borges et al. (2015) analysed the restrictiveness of national alcohol policies with respect to price, availability, marketing and drink-driving in 46 African countries in 2012. With low scores indicating low policy restrictiveness, a

mean score of 44.1 of 100 points possible was attained across countries, with scores that ranged from 9.1 in Sao Tome and Principe to 75.0 in Algeria. The study suggested the need for stronger alcohol policies in Africa due to the negative correlation between policy restrictiveness and alcohol consumption. In another study, Bruijn et al. (2014) provided an update on the monitoring of alcohol advertising in Ghana, Gambia, Madagascar, Nigeria and Uganda. Of these countries, Gambia had the most stringent alcohol marketing regulation while Ghana and Uganda offered only limited protection from outdoor alcohol advertising. The study suggested the use of legal instruments to protect against harmful exposure to alcohol.

The present study linked evaluation and monitoring to implementation. For example, key informants stated that policies can only be evaluated or reviewed after implementation, so when policies are yet to be implemented, they cannot be evaluated. This appears to be the case in many African countries as difficulties in implementation have undermined evaluation efforts. Broadly, studies examining the policy process in Africa put little emphasis on evaluation of policies due to challenges in implementation. Non-communicable disease studies in Cameroon (Mapa-tassou et al., 2018), Nigeria (Oladebo et al., 2018), South Africa (Ndinda et al., 2018), Malawi (Mwagomba et al., 2018), and Kenya (Mohamed et al., 2018) have all indicated problems in implementation and the effect on evaluation. In a comprehensive evaluative study of NCD targets across Africa, Nyaaba et al. (2017) found that more than half the countries did not achieve the NCD targets set for 2015 and 2016 in the WHO Global Action Plan 2013-2020. The study found that initial gains appear to be waning across all regions of the continent, with the Southern part appearing to have made the least progress.

7.3.4 The role of evidence. The need for policy development and implementation to be grounded in sound evidence cannot be overemphasized. Policy makers need evidence to clarify which services or programmes to offer, how best to provide these services as well as the financial and managerial arrangements needed to get this done. With specific regard to HTN/DM, it is particularly important that policies and programmes be based on current evidence about the nature and magnitude of these conditions, their impact, and their distribution patterns within populations. Also, HTN/DM programmes already rolled out need to be monitored and evaluated to determine whether goals are being achieved. Epidemiological information on the number of people who die or suffer from particular disease conditions (such as HTN and DM) are the most commonly used measures (as found in this study) and widely available for meeting these needs (Oxman et al.,

2009). It was reported in this study that in addition to cause-specific mortality information, surveys and GBD data are used in the policy process in Ghana.

Epidemiological information. The use of cause-specific mortality for NCD policy development and implementation is in line with the recommendations of the WHO, who through the Action Plan for the Global Strategy for the Prevention and Control of NCDs in 2008, has advocated for the integration of epidemiological evidence in national NCD health policies. In Ghana, the availability of mortality and morbidity information on HTN/DM has been affected by lack of completeness and timeliness. This includes lack of information from teaching and mission hospitals, both important contributors to the services. The picture is similar in many African countries. Nyaaba et al. for example (2017), found that over two-thirds of countries in Africa are not equipped with the infrastructure to track cause-specific mortality data routinely, hence information of NCD mortality are lacking. The strengthening of vital registration systems is particularly important in LMICs where several challenges have been noted in the registration of causes of death. In many LMICs, vital registration systems cover only parts of the country (mainly urban areas), reporting of deaths may be affected by cultural stigma, suddenness of deaths or deaths involving minority groups may not be captured, and deaths may not be reported at all (particularly in parts of Africa and Asia) as many people die at home (Jha, 2014; Maduekwe, Banjo & Sangodapo, 2017). To address these problems, there is a need for a commitment to long-term socio-economic development with the establishment of autonomous institutions, a political commitment or will and a compulsory reporting of cause of death information in a most consistent and timely way (Cao et al., 2018).

Even when epidemiological information is available, its quality may not be adequate. In this study, it was reported that the quality of epidemiological information is affected by errors. This is consistent with the situation in other LMICs. After evaluating a total of 983 death certificates in Cape Town, South Africa, Nojilana and colleagues (2009) found a major error rate of 43%. Other studies have found significant errors in cause-specific data for public health action (Nyaaba et al., 2017; Jha, 2014).

The present study found the main reasons for the poor quality of epidemiological information to be weak institutions and inadequate numbers and training of personnel. Other studies report that the quality of information in LMICs has been affected by the selection of a single cause of death, which is problematic especially in the case of the death of the elderly, who often suffer from

multiple conditions. For example, in a South African study, it was found that of 38 people recorded as being HIV positive, 6 died from causes not directly related to HIV but stroke, hypertension and renal failure (Nojilana et al., 2009). Other reasons cited for poor quality information in LMICs include registration of deaths without a medical opinion, a lack of training for medical students or doctors to correctly identify cause of death, and ill-defined coding (Nojilana et al., 2009). Jha (2014) attributes the problem to historical neglect and a lack of resources in LMICs.

To improve the quality of cause-specific information for policy development and implementation, a concerted effort must be made to widen coverage by increasing the percentage of mortality certified by physicians, educating personnel in the data capture process on the significance of accurate reporting and, if possible, the avoidance of ill-defined codes (Mathers et al., 2005). Ghana could learn from LMICs such as Rwanda which has implemented a comprehensive programme integrating cause-specific mortalities (including diabetes and cancers) into programmes while simultaneously strengthening the health system to address other conditions (Binagwaho, 2012).

Surveys. Policy experts have recommended the integration of NCD indicators into national surveys (Juma et al., 2018a). This approach has been taken in Ghana with the Ghana STEPS Survey 2006 providing a vivid picture of the prevalence of risk factors of HTN/DM for policy makers. However, more funds are needed to conduct these types of surveys as efforts need to go beyond one-off surveys for effective policy implementation (Mendis, 2010). Several countries in Africa (including Malawi, Zambia, and Nigeria) have used evidence from the Global Youth Tobacco Surveys and the Global Adult Tobacco Surveys to guide their tobacco policies as well as NCD strategies (Warren et al., 2009; Nyaaba et al., 2017). Although risk factor surveys have been conducted in more than half of countries in Africa, research shows that not much progress has been made in controlling diet, weight and physical activity, and that inadequate survey data on these risk factors is partially responsible for this (Nyaaba et al., 2017). Other studies have identified inadequate surveys as a contributory factor to the poor intersectoral action and implementation of national NCD strategies in LMICs (Maher, Sekajugo, et al., 2010; Rahim et al., 2014). South Africa is, however, managing this situation well and has instituted a number of surveys (e.g. the South African Demographic and Health Survey, the Agincourt Health and Sociodemographic Survey and the South African Stress and Health Survey) to collect data for policy development and implementation (Mayosi et al., 2009). Considering the significant resources required to undertake survey research in LMICs, researchers have suggested the integration of the WHO STEPs into the

more-established infectious disease systems in LMICs as this offers a simple and standardized way of collecting and disseminating useful data on NCD risk factors (Nyaaba et al., 2017).

Global Burden of Disease. The GBD is more useful and realistic for NCDs because it reflects disability as well as mortality. The GBD provides an independent, evidence-based approach to public health policy formulation, with some advocates believing that this is a more realistic estimate of disease than the disease-specific information that is usually published (Murray & Lopez, 1996). In Ghana's case, the GBD estimates became a reliable source of information on the leading causes of death in the country and how these trends were changing, especially at a time of health transition. GBD data has been a useful source of evidence for policy makers in both high income and LMICs (Murray et al., 2012). Like Ghana, South Africa is a good example of countries that have used GBD estimates as evidence for NCD policy development. For example, through the 2000 burden of disease study, a rigorous review of cause-of-death estimates in South Africa adjusted for under-registration and misclassification of causes were combined with available morbidity data for extrapolation of estimates of DALYs. This has informed the development of NCD policies and programmes in South Africa (Mayosi et al., 2009).

7.4 Commentary on Discussion

This chapter has examined a range of issues pertaining to the prevention and control of NCDs from a local perspective to a global level. A conceptualization of the policy framework was discussed, followed by a discussion of the management of the policy process.

From an international perspective, this study has shown that there is a concerted effort now within LMICs to focus on NCDs as threats to health systems and economies. Given this, it is unhelpful to criticise any attempt to address NCDs because this is likely to be construed as thwarting efforts aimed at confirming the place of NCDs in the global arena (Glasgow & Schrecker, 2016). However, despite the efforts of the WHO and other global players, there are fundamental issues in the conceptualization of the NCD policy framework at the global level that need further consideration. As was discussed in section 7.2, four main risk factors (unhealthy diet, physical inactivity, excessive alcohol intake and tobacco use) have been the focus of WHO policy frameworks (WHO, 2000; 2008). This is laudable since a significant proportion of NCDs could be controlled if these risk factors were reduced, but the emphasis on risk factors, nevertheless, raises some questions.

First, is the way these four risk factors have been perceived to be the ‘cause’ of NCDs. For example, WHO’s 2010 Status Report (WHO, 2011, p.6) and a UN background paper to the 2011 NCD Summit (UN Secretary General, 2011 p.11) both stated that NCDs are ‘caused’ by these four main risk factors. However, this argument may be incomplete as risk factors and behavioural aspects of health only account for a portion of the socioeconomic gradient in health (Rowlands et al., 2015; Hosseinpoor et al., 2012). The second aspect of this discussion, flowing from the ‘incomplete’ argument, is that global policy discussions have led LMICs to focus more on behavioural aspects of NCDs and less on the upstream social determinants of health. The argument here is that the WHO itself perceives the NCD challenge largely in behavioural terms although this is only a part of the problem, a position that Glasgow and Schrecker (2016) refer to as ‘selective view of the relevant bodies of research’ (p.281). As noted already, this position relies on the neoliberal idea of ‘choice’ and the notion that people will make the best decisions about their health, a standpoint that is well entrenched in HIC and being transferred to LMICs. The result is the neglect of the social production of disease and ‘risk privatization’ which have been largely ignored in global NCD policy approaches (Krieger, 2008).

The impact of international corporations on the policy framework of LMICs has been discussed. The failure of LMICs to fully use regulations to minimize the effects of international food, tobacco and alcohol corporations is worth noting. Some transnational corporations have been known to fuel ‘industrial epidemics’ as they have developed sophisticated campaigns that undermine public health interventions for NCDs (Moodie, 2013 p.671). Reduced restrictions on foreign investments (a key aspect of the legal framework that characterise neoliberal approaches) are implicated in the diffusion of processed food and domination of dietary choices by international fast-food chains and supermarkets in LMICs (Hawkes et al., 2009; Thow et al., 2015). It appears the global economic framework has failed to safeguard the interests of LMICs in this regard. For example, there has been a dramatic increase in the exportation of high fructose corn syrup from the US to Mexico following the North American Free Trade Agreement. This is perceived in the US as economically important for the disposal of surplus corn, hence the ‘export of obesity’ from the US to Mexico (Goran et al., 2013). In effect, global policy discussions on NCDs should consider the effects of transnational corporations on the policy efforts of LMICs since industry influence on policy making has the potential to undermine other control mechanisms (Goran et al., 2013).

Apart from the international level, this chapter examined the prevention and control of HTN/DM from the local perspective. It was seen in Ghana that political will, poverty, corruption, illiteracy

and superstitious beliefs are key determinants of both health overall and NCDs. As already discussed, these issues can be addressed through a concerted effort to develop the whole country both socially and economically. This means expanding people's freedoms through the improvement of access to education, health, eradication of poverty and the provision of infrastructure to enable people to live better lives and not only in the growth of GDP and other economic indicators (Sen, 1999).

Policies in Ghana have been developed to manage risk factors. However, as already noted, implementation approaches there follow the global pattern and focus on individual behaviourism, as people are expected to make the best decisions regarding their health. In addition, policy makers recognize the role of health services in the prevention and control of HTN/DM and are responding through the provision of education, advocacy, screening services, and programmes in NCD control and regenerative health. However, a common thread that characterises these services is inadequate funds. Policy makers recognize the financial implications of effective NCD prevention and have introduced social health insurance to absorb the burden of accessing services. However, access to care remains a big challenge (Aikins et al., 2010). Cost effective interventions are recommended especially in the provision of primary care and treatment services (Gaziano & Pagidipati, 2013).

In Chapter one, it was noted that policy levels (global, national environment, population health and health services) must be 'nested' into each other for effective linkages and a coordinated approach to the prevention and control of HTN/DM and other NCDs. In Ghana, it appears such policy linkages are weak. For example, the lack of intersectoral collaboration among institutions and ministries means population health policies have not been integrated into environmental policies addressing gaps in education, health and poverty. The extent to which sectors such as agriculture, trade, sports and urban design influence the development and implementation of NCD policies is limited. Besides, although global NCD frameworks and resolutions have been ratified, the degree to which these influence the planning and implementation of policies on health services and social determinants of health remain unclear.

The study also examined the processes through which policies were developed and implemented in NCD prevention and control. It was found that in Ghana there is lack of clarity of process and a more coordinated effort is needed in policy initiation. Also, a more inclusive stakeholder engagement process is required. This is already under discussion and may change the method of engagement with stakeholders participating at the organizational level rather than inviting all

institutions to gather at one place. Political commitment and will are needed to get NCDs on the health agenda in Ghana. However, as noted by policy makers and confirmed by documentary sources, the most crucial stage of the policy process that requires urgent attention is implementation. Challenges in implementation have also affected monitoring and evaluation. With policies yet to be implemented, monitoring and evaluation is impossible. Implementation has been difficult particularly because of funding. However, other factors such as weak regulatory systems, inadequate intersectoral collaboration, and competing priorities with infectious diseases have negatively affected implementation. The weak implementation of policies can be improved by the provision of resources and continued engagement with all stakeholders in the implementation effort. However, political will is central to this effort, as was the case in Kenya, where considerable progress has been made in tobacco control due to the increased political commitment to fight NCDs (Mohamed et al., 2018). The policy process has been underpinned by epidemiological information, surveys and GBD data. However, availability and quality of information for the policy process remain a big challenge.

CHAPTER EIGHT

Conclusion

This chapter provides an overall assessment of the study and suggests a way forward. In particular, the study's main strengths and limitations are outlined and its contributions are highlighted. The final part of this chapter focuses on future research considerations and policy directions for Ghana and other LMICs on HTN/DM prevention and control.

The present study outlined broad policy issues with respect to NCD prevention and control in Ghana. The purpose of the study was to understand the health policy process for controlling HTN/DM in Ghana. To achieve this purpose, the objectives of the study were;

- To assess how policies for the prevention and control of hypertension and diabetes are developed and implemented in Ghana.
- To assess the way in which evidence is incorporated in hypertension and diabetes policy development and implementation.
- To examine how stakeholders understand and respond to the problem of hypertension and diabetes in Ghana.
- To identify the factors hindering the management of hypertension and diabetes in Ghana

These objectives were achieved, with the findings presented in Chapters 4-6 and discussion in Chapter 7.

8.1 Strengths and Limitations of the Study

8.1.1 Strengths of the study. The strengths of the study include:

Firstly, data were collected from different sources including key informants, documents and focus groups, with the use of multiple data sources enhancing the credibility of study findings.

Secondly, data were collected from participants performing different roles at varying levels of HTN/DM prevention and control. This included patients, doctors, nurses, health managers, policy makers and administrators, patient organization respondents and advocacy group members, ensuring that different views were explored which thickened data and enriched study findings.

Thirdly, the framework method of analysis employed ensured a systematic, transparent, and credible way of analysing data.

Fourthly, the involvement of a Ghanaian researcher with prior experience in the Ghanaian health system to personally collect and analyse the data over four months in the field ensured a consistent and informed understanding of the phenomenon under study.

Fifthly, there were strengths beyond the scope of a robust methodology. The broad scope of the research allowed it to offer insights into various aspects of NCD prevention and management, including urban and rural considerations, understanding different stakeholder perspectives, and key levels of service delivery (both national and district levels). Perhaps even more important, while the study originally focused on the technical aspects of managing the policy process, the insights of the respondents and flexibility of the researcher allowed the study to develop into a broader conceptualization of how policy can be understood in a wider system.

8.1.2 Limitations of the study. A number of limitations of the study have been identified. Firstly, the study involved relatively few respondents from stakeholder institutions. Although saturation of data was achieved, there were others who, because of time and resources, were not able to be considered but whose input could have further illuminated study findings and conclusions.

Secondly, although the researcher's familiarity with the Ghanaian health system was a source of strength, there is a possibility that this may have led to some bias. However, as explained in section 3.7 (case study rigour), a concerted effort was made to ensure that personal judgment of the researcher did not influence the study. Participants were encouraged to give their own perspectives and on occasion supervisors challenged interpretation of findings.

Thirdly, at the district level, only two municipalities were studied. Findings on HTN/DM service delivery are therefore likely to be influenced by the specific approaches and progress (as well as peculiar challenges) made by these districts in managing these conditions and this may differ from other rural or urban areas not considered in the study.

Fourthly, some aspects of the methods were a limitation. For interviews and focus groups, questions were pre-designed to focus on study objectives. While this was essential due to limitations of time and resources for writing a PhD thesis, the researcher acknowledges that when participants raised issues that fell outside study objectives, these were not pursued as vigorously as he might have wished, and that this had the potential to restrict the richness of the data.

Finally, the inability to generalize freely from a qualitative study such as this is a limitation. Nevertheless, careful use of comparable literature from similar countries allows informed discussion of potential implications across settings.

8.2 Contribution of the Research

As there is only limited research into NCD policy processes, and despite the caveat above regarding generalization, the findings from this thesis have implications and relevance not only for Ghana, but Africa and other LMICs also. The contribution of this research can be seen in two ways: Firstly, in the conceptual approach to NCD policies, and secondly in the provision of insights into the policy making process for prevention and control of HTN/DM in Ghana and other LMICs.

8.2.1 Conceptual contribution. This study has highlighted the relevance of the policy framework for the prevention and control of HTN/DM and NCDs. This is particularly important in three areas: an integrated approach to thinking about NCDs; development perspectives on NCD control and management; and new approaches to risk factors.

Many LMICs have been slow in establishing the requisite policies to combat NCDs partly due to limited understanding of the complex forces that characterise NCD prevention and management. This study has, however, put forward a logical approach that invites policy makers to consider NCDs in an integrated manner, recognising a health services policy perspective, and national environmental policy perspective, and the global policy level, with policy levels being nested into each other. This is to ensure a coordinated approach to NCD policies rather than the pursuit of partial interventions that yield piecemeal results.

This study has stressed the need for LMICs to conceptualize the NCD challenge from a development perspective. This calls for a broader understanding and approach to the prevention and control of NCDs by targeting strategies aimed at reducing poverty and deprivation, with health policies structured in ways that feed into the overall development agenda. The synthesis of NCD policies with other national policies in education, agriculture, social welfare, and economic planning is therefore vitally important. Policy makers in LMICs can think about NCDs as a developmental problem that requires a whole-of-society approach rather than as just a health issue. This involves a concerted effort to expand the freedoms and resources of people in terms of access to education, health, food, etc.

The prevention and control of risk factors is an important aspect of NCD policy. This research has demonstrated the need for policy makers in LMICs to consider the relevance of context in their approach to risk factors. This includes the need to go beyond the ‘individual behaviourism’ that characterizes some risk factor efforts in HICs to a broader perspective involving social and cultural aetiologies. As was noted in this research, the role of lay influences such as community groups, schools, and the mass media are crucial in understanding health risk, prevention and intervention strategies in LMICs although these have been somewhat neglected in the design of global strategies for the reduction of risk factors.

8.2.2 Insights into the management of the policy process. As the first study on HTN/DM policy processes in Ghana, this study has revealed critical issues in policy development with useful lessons for both Ghana and Africa. An examination of the policy process has shown role ambiguity between key institutions with respect to policy initiation, suggesting the need for better coordination among institutions with regards to policy development.

This study specifically addressed the crucial area of stakeholder involvement in NCD policy processes. It had been assumed that all stakeholders participated in health policy development and implementation in Ghana. However, this study has shown that not all stakeholders are invited to participate and that there are inadequacies in the process. For example, it was noted that private sector representatives have not been part of NCD policy processes in some countries, including Ghana, although they can play a major part in influencing risk factors. In particular, participants considered that a more collaborative effort in stakeholder engagement would ensure more effective policy outcomes.

Closely related to the above, this study has contributed new insights into the mode of engaging stakeholders in NCD policy processes in Africa. The study details the defects of the static engagement process of inviting all stakeholders to one place for policy discussions, a method used in most African countries. For example, in some countries stakeholders were unable to accept invitations because they had to fund arrangements themselves. The study has shown that for effective stakeholder engagement, policy makers must change approach and go to stakeholders in their respective organizations rather than stakeholders coming to them.

At the national level, this study has shown the need for policy makers to align with key political actors in order to place HTN/DM and other NCDs on the health agenda. NCDs have not been a

priority in many LMICs because they have not achieved buy-in with key political actors. The study has demonstrated a need for policy makers in LMIC to align with civil society organizations and the mass media to ‘catapult’ NCDs from mere ‘social’ issues to ‘public’ issues via their inclusion in political discussions. This alignment will ensure support to propel NCDs onto the health agenda so that the requisite policies and programmes can be designed to address them.

Implementation remains a problem in Africa and a relatively new area for research. This study identified a number of issues in NCD policy implementation in LMICs, including the provision of resources, reduction in emphasis on infectious diseases and clinical treatment, and the need for better intersectoral collaboration.

The study offered insights into the use of evidence for NCD policy processes, an area that is largely unexplored in NCD research in Africa. Findings revealed weak institutions leading to poor availability and quality of data. While progress in Ghana has been made in establishing infrastructure and institutions for data management such as the CHIM and the DHIMS, more needs to be done to maintain the availability and quality of data. For example, it was reported that the implementation of the cross-programmatic efficiency initiative to align the NCD Control Programme with other programmes was negatively affected by the unavailability of data.

The study provided a good update of the policy and health services response to NCDs. It was shown that while policies have been introduced (e.g. National NCD Policy and Strategy, policies on tobacco, alcohol etc.) more effort needs to be placed on strengthening institutions for implementation to be more effective. The study also offered insights on how current response programmes for HTN/DM in Ghana (such as the NCD Control Programme and the Regenerative Health and Nutrition Programme) are operating and the need to address human resource and financial challenges.

NCD risk factor studies in Africa have paid little attention to how these are perceived or understood from different stakeholder perspectives, and the underlying issues that influence management of risk factors. This is the first study in Ghana to have explored HTN/DM risk factors from the perspectives of different stakeholder groups using multiple data sources and in both urban and rural contexts, thus offering more insight into how the problem could be tackled in a comprehensive way.

The study has offered more insights on NCD control in Africa by identifying the key areas for attention. The study showed the policy process must integrate programmes involving community members (which, although known to contribute to successful HTN/DM efforts, are yet to be integrated in HTN/DM programmes) and responsive health services for effective NCD prevention.

While the study identified risk factors as one of many areas for ongoing attention for NCD policy in Africa, it also highlighted the positive strides African countries have made in responding to the NCD challenge through the development of various policies. It also provided insights into the barriers hindering the prevention and control of NCDs from various stakeholder viewpoints, such as lack of resources and political will.

8.3 Future Considerations

8.3.1 Future research considerations. Although this study has contributed new information on NCD policy process in Ghana, gaps still exist, and suggestions are made here for future research into NCD policy and control.

The present study explored the views of some stakeholders in HTN/DM management in Ghana. However, as discovered in the findings, effective control of HTN/DM calls for investigating the perspectives of stakeholders beyond those considered in this study. In addition, it was indicated that there are limits to what health policies can do with respect to HTN/DM prevention, as stakeholders outside the health sector are critical to effective prevention. Future research needs to investigate the perspectives of a wider network of stakeholders from trade and industry, agriculture, urban planning and development, and private sector interests for further insight into those perspectives not covered in this study.

Additionally, this study was limited to 26 key informant interviews and at district level was limited to the Ga South and the Effutu Municipalities. Future studies should explore the views of more stakeholders within the same stakeholder groups but representing a wider range of service settings in the country.

This study showed that although HTN/DM are among the leading NCDs in Ghana, other NCDs such as cancers and mental health conditions are also on the rise. In order to inform policy, it is important that future research in Ghana focus on all NCDs, since many are related through their shared risk factors and can also be addressed through common service settings, such as primary

health care. Health services research projects to evaluate the impact of integrated risk factor or treatment initiatives would be helpful.

The current study investigated whether policies for managing HTN/DM are in place. However, the impact of specific NCD policies (e.g. the alcohol and nutrition policies) on the HTN/DM situation is yet to be explored and could be a good topic for future research. This also calls for investigation into other policy processes (e.g. tobacco control, alcohol, nutrition) in Ghana.

This study revealed that although a number of funding sources are being explored, NCD financing remains a daunting challenge in Ghana. Since studies on NCD financing are rare in Ghana, future research in this area could offer more insight into the social and health impacts of underfunding and what is needed to ameliorate the situation.

8.3.2 Possible actions. Clearer documentation of the processes of policy development and implementation will help avoid role ambiguity and enable stakeholders coordinate effectively for NCD control. For example, the present study detailed a series of activities in the development and implementation of policies on HT/DM that can be improved by a clearer policy initiation and implementation strategy, and a well-organized stakeholder engagement process.

Reprioritization of efforts to give adequate attention to NCDs and to reflect preventive aspects of NCD policy are required. Policy makers in Africa have indicated that HTN/DM are among the diseases of public health significance through the development of appropriate policies and programmes. For maximum impact, however, response effort to HTN/DM should also reflect an emphasis on preventive aspects and programmes. This requires strengthening primary care as the basis of preventive services and a stronger public health and health promotion effort.

Better implementation is a key issue for NCD policies in Ghana and Africa. This may require some flexibility in approach, with more emphasis on policies fashioned to encourage engagement of community members in implementation decisions. Additionally, the potential of implementation science techniques needs to be explored by policy makers in an effort to ensure the identification of both barriers to, and enablers of effective HTN/DM policy implementation. This knowledge can then be applied to the development of innovative and evidence-based approaches to delivering HTN/DM programmes.

Findings of the present study show that availability of evidence for chronic disease management continues to be a challenge in Africa. The strengthening of vital registration systems is imperative for ensuring robust data on cause-specific mortality. Alternative methods for generating information for chronic disease policy development such as verbal autopsies can also be considered.

For effective response to NCDs, policy effort should reflect the health needs of different population segments, including the most vulnerable. The study reported that the response effort for and attention to HTN/DM is more concentrated in the urban centres in Ghana. Thus, stronger policy guidance needs to be given on equity between rural and urban areas and out-of-pocket costs for medicines.

The need for broader policy focus on social and economic development of Ghanaian society is an important area for action through recognizing the need to addressing the social determinants of health as a fundamental measure for the control and prevention of NCDs. This includes improving the conditions in which people are born, live, work and age. This requires policy processes to address issues of income, education, physical environment, and access to health, and the alignment of the policy process with broad policies on sectors such as agriculture, trade and industry, sports, information, etc.

The study indicates awareness of the difficulties of stakeholder engagement and there are plans to improve these practices. Enhancing the unique roles of stakeholders offers opportunities for success in both policy engagement and service delivery and will be a priority area for action.

Opportunities can be sought to expand funding sources for NCDs. The WHO ‘best buy’ interventions offer an opportunity to do this while tackling risk factors. For example, raising taxes on alcohol (which is a major risk factor in Ghana and other African countries) will not only help to raise additional revenue, but will also go a long way to decrease the demand for alcoholic products. With evidence showing that such interventions can be highly beneficial in LMICs due to the price elasticity in these countries, policy interventions that make use of the WHO ‘best buy’ interventions can be implemented as a matter of urgency. In Ghana, although additional funding sources are being explored (such as corporate levies, bonds, tobacco excise taxes, voluntary solidarity contributions), progress in implementing these has been slow. These funding sources would be in addition to strengthening current sources such as health insurance.

The prevention of HTN/DM requires a strong primary care response. In Ghana, primary care for HTN/DM has been weak but the Buddy Doctor Initiative and Base of the Pyramid project are specific HTN/DM primary care approaches being implemented in the Ga South Municipality. Such initiatives need to be adopted in other areas beginning with those municipalities experiencing high incidence of HTN/DM. Attention should also be given to strengthening other primary care institutions for HTN/DM care in Ghana such as the CHPS through the provision of financial and human resources.

Finally, the policy process should integrate mechanisms that empower individuals to acquire, process and understand basic health information on HTN/DM to enable them make the necessary behavioural changes. Health literacy should therefore be a priority for policy makers in Ghana and other LMICs. To achieve this, priority needs to be given to making HTN/DM information available to the community, and empowering populations to make good decisions and choices about their health.

8.4 A Final Word

Informed by prevalence studies in HT/DM in Ghana and Africa, the researcher was well aware of the extent of these NCDs and their potential impacts when proposing the research study. Based on the role national policies play in the prevention and control of these conditions, one would have assumed more studies would exist in this area, but the researcher was surprised to find a relative lack of research into NCD policy processes in Africa and LMICs. This provided added motivation for the study. Whilst data collecting in the field in Ghana, the researcher queried why more progress had not been made when participants, who themselves demonstrated passion and commitment, shared insights and maintained that policies were in place. Data collation and analysis went some way to explaining why progress in NCD prevention and control had not been more evident. Most notably, although significant efforts have been made by stakeholders in NCD control, multiple issues were found to persist at every level of the policy framework and stage of the policy cycle. The task ahead is enormous, but it is hoped that the comprehensive nature of this study and the conceptual and practical insights it offers, provide a strong foothold in policy thinking to inform the growing response to the ever-growing NCD problem in LMICs.

This thesis encourages LMICs to first seek a better conceptualization of the policy structure of NCDs but also to focus on the processes through which these policies are developed. Therefore,

not only should the policy approach focus on the content, but also on a better understanding of the milieu in which policies are developed and implemented. Particularly, this thesis asks policy makers in LMICs to conceptualize the NCD policy framework as embedded levels (from health services, through population and environmental policies, to global NCD policy frameworks). In addition, policy makers are encouraged to pay attention to the stages of NCD policy process and make decisions based on the best available evidence in agenda setting, stakeholder engagement, implementation, and evaluation of policies. Understanding of the policy environment for NCDs through a well-conceived policy framework, along with an increasingly well-managed policy process informed by the findings of the current study, has the potential to result in better NCD outcomes in Ghana and other LMICs.

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Appendices

APPENDIX A. HEALTH INFORMATION 2016 – 2018 GA SOUTH MUNICIPALITY

Table A1.
Top ten causes of OPD attendance 2016-2017

2016			2017			2018		
Data element	Total	%	Data element	Total	%	Data element	Total	%
Skin Diseases	15769	30.8	Skin Diseases	17270	32.9	Uncomplicated Malaria Tested Positive	6278	26.4
Upper Respiratory Tract Infections	8238	16.1	Upper Respiratory Tract Infections	8228	15.7	Skin Diseases	3881	16.3
Acute Eye Infection	5540	10.8	Uncomplicated Malaria Tested Positive	5305	10.1	Upper Respiratory Tract Infections	3688	15.5
Uncomplicated Malaria Tested Positive	5028	9.8	Acute Eye Infection	4935	9.4	Rheumatism & Other Joint Pains	1850	7.8
Acute Urinary Tract Infection	3458	6.8	Acute Urinary Tract Infection	4457	8.5	Typhoid Fever	1598	6.7
Hypertension	2998	5.9	Rheumatism & Other Joint Pains	3271	6.2	Diarrhoea Diseases	1478	6.2
Diarrhoea Diseases	2935	5.7	Hypertension	2479	4.7	Acute Urinary Tract Infection	1458	6.1
Rheumatism & Other Joint Pains	2756	5.4	Diarrhoea Diseases	2461	4.7	Hypertension	1291	5.4
Other Acute Ear infection	2285	4.5	Typhoid Fever	2177	4.1	Septicaemia	1230	5.2
Typhoid Fever	2121	4.1	Anaemia	1950	3.7	Anaemia	1069	4.5

Table A2.
Causes of admissions 2016-2018

	2016			2017			2018		
	Condition	Freq	%	Condition	Freq	%	Condition	Freq	%
1	Diarrhoea	713	17.3	Septicaemia	614	21.3	Diarrheal Diseases	499	14
2	Malaria	688	16.7	Hypertension	456	15.8	Suspected Malaria	391	11
3	RTI	385	9.4	Diabetes & Hyperglycaemia	349	12.1	Sepsis	266	8
4	Hypertension	253	6.1	UTI	352	12.2	Hypertension	199	6
5	Diabetes & Hyperglycaemia	228	5.5	Anaemia	245	8.5	Anaemia	187	5
6	UTI	218	5.3	Sepsis	210	7.3	Pneumonia	159	5
7	Anaemia	202	4.9	Skin Dx & Ulcers	196	6.8	Diabetes	151	4
8	Septicaemia	190	4.6	Diarrhoea	180	6.2	Urinary Tract Infection	146	4
9	Sepsis	166	4.0	Malaria	153	5.3	Retro Viral Infection	84	2
10	Skin Dx & Ulcers	161	3.9	RTI	134	4.6	Enteric Fever	72	2

Table A3.
Causes of death 2016-2018

	2016		2017		2018	
	Condition	%	Condition	%	Condition	%
1	Diarrhoea	19	Gastritis	20	Hypertension	16
2	HIV/AIDS	17	UTI	13	Aspiration Pneumonia	10
3	RTI	15	Pneumonia	13	Bilateral Pneumonia	9
4	Alcohol Intoxication	13	Congestive Heart Failure	13	Diabetes Mellitus	9
5	Hypoglycaemia	12	Bilateral Pleural Effusion	7	Infective Gastroenteritis	6
6	Hypertension	11	Myocardial Infraction	7	Alcohol Liver Disease	5
7	TB	5	Septicaemia	7	Cystitis	4
8	Hypovolemic Shock	4	Hepatic Encephalopathy	7	Retroviral Infection	4
9	Gastritis	4	Kidney Impairment	7	Severe Malaria	4
10	Chronic Hepatitis	4	Acute Kidney	7	Pulmonary TB	4

APPENDIX B. HEALTH INFORMATION 2016 – 2018 EFFUTU MUNICIPALITY

Table B1.

Top ten causes of OPD attendance

TOP TEN CAUSES OF OPD ATTENDANCE											
2015				2016				2017			
N o	DISEASE	CASE S	%	N o	DISEASE	CAS ES	%	N o	DISEASE	CAS ES	%
1	Malaria	1638	25.4	1	Malaria	2317	24.6	1	Malaria	2658	19.7
2	Rheumatism & Other Joint Pains	1016	15.8	2	Upper Respiratory Tract Infections	1336	14.2	2	Rheumatism & Other Joint Pains	2491	18.7
3	Upper Respiratory Tract Infections	922	14.3	3	Rheumatism & Other Joint Pains	1322	14.0	3	Upper Respiratory Tract Infections	1940	14.6
4	Acute Eye Infection	861	13.4	4	Acute Eye Infection	1053	11.2	4	Anaemia	1744	13.1
5	Anaemia	445	6.9	5	Anaemia	817	8.7	5	Hypertension	1326	10.0
6	Diarrhoea Diseases	386	6.0	6	Acute Urinary Tract Infection	693	7.4	6	Acute Urinary Tract Infection	1256	9.4
7	Hypertension	347	5.4	7	Hypertension	623	6.6	7	Acute Eye Infection	584	4.4
8	Gynaecological conditions	312	4.8	8	Gynaecological conditions	510	5.4	8	Diabetes Mellitus	496	3.7
9	Skin Diseases	261	4.0	9	Diarrhoea Diseases	396	4.2	9	Diarrhoea Diseases	457	3.4
10	Acute Urinary Tract Infection	259	4.0	10	Pneumonia	353	3.7	10	Gynaecological conditions	393	3.0

Table B2.

Top ten causes of admissions

TOP TEN CAUSES OF ADMISSIONS											
2015				2016				2017			
	DISEASE	CASES	%	N O	DISEASE	CASES	%	N O	DISEASE	CASES	%
1	Malaria	285	27.2	1	Malaria	296	19.6	1	Malaria	321	15.8
2	Septicaemia	160	15.3	2	Sepsis	259	17.2	2	Neonatal Sepsis	300	14.8
3	Anaemia	159	15.2	3	Anaemia	193	12.8	3	Anaemia	263	13.0
4	Gastroenteritis	88	8.4	4	Septicaemia	152	10.1	4	Septicaemia	257	12.7
5	Hypertension	81	7.7	5	Abortion	123	8.2	5	Hypertension	234	11.5
6	Abortions	70	6.7	6	Neonatal Jaundice	118	7.8	6	Neonatal jaundice	196	9.7
7	Bone fracture	54	5.2	7	Pneumonia	106	7.0	7	Diabetes Mellitus	133	6.6
8	Uterine fibroid	52	5.0	8	Hypertension	89	5.9	8	Inevitable Abortion	120	5.9
9	ARTI	49	4.7	9	Gastroenteritis	87	5.8	9	Diarrhoea	109	5.4
10	Diabetes	48	4.6	10	Urinary Tract Infection	86	5.7	10	Uterine Fibroid	97	4.8

Table B3.

Top 10 causes of death

TOP 10 CAUSES OF DEATH						
2016				2017		
N O.	DISEASE	CASES	%	DISEASE	CASE S	%
1	Sepsis	15	10.3	Hypertensive heart diseases	31	15.3
2	Birth Asphyxia	14	9.7	Cerebrovascular diseases	20	9.9
3	Hypertension	11	7.6	Diabetes mellitus	20	9.9
4	CVA	10	6.9	Other and unspecified <u>perinatal</u> conditions	18	8.9
5	Preterm	10	6.9	<u>Anaemia</u>	17	8.4
6	Chronic Liver Disease	9	6.2	<u>Septicaemia</u>	17	8.4
7	Anaemia	8	5.5	Prematurity	13	6.4
8	HIV Infection	8	5.5	Other and unspecified diseases of the respiratory system(Aspiration Pneumonia)	12	5.9
9	Pneumonia	8	5.5	Other diseases of the digestive system	8	4.0
10	Malnutrition	5	3.4	Other and unspecified diseases of the digestive systems(NNJ)	7	3.5

APPENDIX C. INTERVIEWEE INFORMATION SHEET



Department of Health Sciences

Telephone: +64 221361203

Email: mark.owusu@pg.canterbury.ac.nz

May 7, 2017.

Research Topic: Effective management of non-communicable diseases in Ghana: the case of hypertension and diabetes mellitus

Information Sheet for Interviewees

My name is Mark Owusu, a PhD student of the University of Canterbury, New Zealand, and the Principal Investigator for this research. The purpose of this study is to understand the health policy process for the prevention of hypertension and diabetes mellitus in Ghana. Hypertension and diabetes are the most prevalent non-communicable diseases in Ghana and among the leading causes of admission and mortality. National health policies can play a critical role in managing these diseases although studies in Ghana have largely focused on the prevalence of these diseases. This study is therefore aimed at examining the processes of policy development as this goes a long way to determine the effectiveness of policies and health programme choice. As a key stakeholder, your views, experiences and perceptions are crucial to the effective management of hypertension and diabetes in Ghana.

If you choose to take part in this study, your involvement in this project will be to engage in a conversation with the Principal Investigator on your views and experiences on the prevention and control of hypertension/diabetes in Ghana as a relevant stakeholder. This conversation will be recorded with an audio tape recorder solely for the purpose of this research for a time not exceeding one hour.

As a follow-up to this investigation, you will be asked to make clarifications or provide additional information where necessary. At any point in time, you have the right to contact the researcher or his supervisors to check on this research project or make a complaint.

In the performance of the tasks and application of the procedures, there are no risks or discomforts that are anticipated from your participation in the study. The data and information collected during this study will remain confidential in secure premises during the study without linking it to you in any way. To guarantee your safety, you can be sure that;

- Whether you decide to take part or not, your position or status will not be affected by your decision.
- If you agree to be involved, you can change your mind before or during the process and you do not have to give a reason.
- If you decide after the interview you do not want to take part, you can inform the Principal Investigator within four weeks and your recordings will be destroyed.
- Your information will be treated as confidential. In the research report, your name will not be connected with anything you say.

Participation is voluntary and you have the right to withdraw at any stage without penalty. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, the researcher will remove information relating to you. However, once analysis of raw data starts in November 2017, it will become increasingly difficult to remove the influence of your data on the results.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: your identity will not be made public without your prior consent. To ensure anonymity and confidentiality, the Principal Investigator will use codes to identify participants in the thesis and academic reports. Identification data will be kept on the principal Investigator's hard drive on a password-protected computer provided by the University of Canterbury. Back-ups will be kept securely on University of Canterbury Servers. Hard copies of data will be locked in the Principal Investigators cabinet at the University of Canterbury campus. Only the Principal Investigator and his supervisors will have access to the data. Data will be stored for a period of 10 years after which it will be destroyed. A thesis is a public document and will be available through the UC Library.

Please indicate to the researcher on the consent form if you would like to receive a copy of the summary of results of the project.

The project is being carried out as a requirement for a Doctor of Philosophy degree by Mark Owusu under the supervision of Dr. Arindam Basu and Assoc. Prof. Pauline Barnett who can be contacted at arindam.basu@canterbury.ac.nz and pauline.barnett@canterbury.ac.nz. They will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in the study, you are asked to complete the consent form and return to the Principal Investigator.

Mark F. Owusu

APPENDIX D. INTERVIEWEE CONSENT FORM



Department of Health Sciences

Telephone: +64 221361203

Email: mark.owusu@pg.canterbury.ac.nz.

Effective management of non-communicable diseases in Ghana: the case of hypertension and diabetes mellitus

Consent Form for Interviewees

- ☐ I have been given a full explanation of this project and have had the opportunity to ask questions.
- ☐ I understand what is required of me if I agree to take part in the research.
- ☐ I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- ☐ I understand that any information or opinions I provide will be kept confidential to the researcher and his supervisors and that any published or reported results will not identify the participants and their respective institutions. I understand that a thesis is a public document and will be available through the UC Library.
- ☐ I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after ten years.
- ☐ I understand the risks associated with taking part and how they will be managed.
- ☐ I understand that interviews may be recorded. However, where this is not possible, notes will be taken by the researcher.
- ☐ I understand that I can contact the researcher Mark Owusu Fordjour (mark.owusu@pg.canterbury.ac.nz) or supervisor Dr. Arindam Basu (arindam.basu@canterbury.ac.nz) for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)
- ☐ I would like a transcript of my interview to be sent to me
- ☐ I would like a summary of the results of the project.
- ☐ By signing below, I agree to participate in this research project.

Name:___Signed:_____Date:___

Email address (*for report of findings, if applicable*):_

This form should be returned to the researcher

APPENDIX E. INTERVIEW GUIDES



School of Health sciences, University of Canterbury, New Zealand

Interview guide for stakeholders, 2017.

Project title: Effective management of non-communicable diseases in Ghana: the case of hypertension and diabetes mellitus.

Ministry of Health/Ghana Health Service

1. How do you describe the hypertension/diabetes situation in Ghana at the moment?
2. What is the policy situation for non-communicable disease management in Ghana?
3. How do you describe the nature of health policy for managing non-communicable diseases (with emphasis on hypertension/diabetes) in Ghana? How are these policies made?
4. What is the role of evidence in the NCD policy process?
5. What evidence do you consider important for hypertension/diabetes policy. How do you access such evidence?
6. How do you incorporate this evidence into the policy process?
7. What is the role of other stakeholders in the NCD policy process? Do you think they understand and appreciate the challenge of hypertension/diabetes in Ghana?
8. How do you engage with stakeholders? How are they (stakeholders) responding to the challenge of hypertension/diabetes in Ghana?
9. How do you incorporate patient views into hypertension/diabetes strategies, plans and policies?
10. What do you consider to be the main risk factors for hypertension/diabetes incidence in Ghana? Please explain.

11. What specific policy interventions have been employed in managing risk factors? How would you describe their effectiveness? How are these monitored and evaluated?
12. Do you see any policy gaps in the management of these conditions currently in Ghana?
13. As policy makers, what challenges do you encounter in the management of hypertension/diabetes in Ghana?
14. What do you suggest can be done to improve hypertension/diabetes management in Ghana especially from the policy perspective?

National Health Insurance Authority

1. As payers, how do you describe the current non-communicable disease situation in Ghana? Any implications of this on your operations?
2. As a major stakeholder in the management of health in Ghana, please describe your role in the management of non-communicable disease policy in Ghana.
3. How do you influence the policy process for NCD policy in Ghana?
4. As payers, do you think specific policies or interventions could be formulated that will have some implication on the cost of hypertension/diabetes care in Ghana? Please explain.
5. What challenges are you facing as payers in the management of non-communicable diseases in Ghana?
6. What do you suggest can be done to improve the situation?

Providers (doctors/senior nurses)

1. As providers, how would you describe the hypertension/diabetes situation in this municipality?
2. What do you think are the main causes of hypertension/diabetes in the municipality?
3. How do you describe the current management system of hypertension/diabetes in Ghana? Do you think we have adequate policies and systems to manage these conditions? Please explain.
4. What are your views on the NCD policy situation in Ghana? How do your experiences with patients get across to policy makers?
5. How would you describe the nature of your engagement with the Ghana Health Service and the Ministry of Health as implementers of policies for managing hypertension/diabetes?
6. As providers, how are you responding to the hypertension/diabetes situation in your municipality?
7. What are the main challenges in managing hypertension/diabetes in this municipality?

Health managers/ Health Administrators

1. Annual reports in this municipality shows hypertension and diabetes are major public health problems. As the main planner and decision maker on health issues, could you explain the mechanisms in place to reduce the rising cases of hypertension/diabetes?
2. What is your role in NCD policy development or implementation?
3. Do you have specific plans and strategies for specific diseases such as hypertension/ Diabetes? How do you go about this process?
4. Could you describe resource allocation procedures for managing specific conditions such as hypertension and diabetes? How do you allocate resources to fighting diseases such as hypertension and diabetes?
5. Do you consider patient views into your plans at this level? How do you go about this?
6. How do you align or integrate your plans and strategies with that of the Ghana Health Service/Ministry of Health?
7. What challenges do you encounter in managing leading conditions such as hypertension and diabetes?

Ghana Diabetes Association

1. From the perspective of the Association, what is the current state of diabetes in Ghana?
2. Per your investigations, what are the main risk factors for diabetes in Ghana? What has been your role in the management of these risk factors?
3. Do you have any influence on policy making with regards to diabetes management? Please explain.
4. How do you describe your relationship with the Ministry of Health/Ghana Health Service on the formulation and implementation of policies on diabetes management?
5. In terms of policy, what do you think should be the key priority areas for the management of diabetes in Ghana?
6. In your estimation, what are the main challenges for diabetes management in Ghana?
7. From a policy perspective, what do you think must be done to improve the management of diabetes in Ghana?

Ghana Medical association

1. How do you describe the current state of hypertension/diabetes incidence in Ghana?
2. What role do you play in the control of hypertension/diabetes in Ghana?
3. From a policy perspective, do you think diabetes/hypertension have received the needed attention in terms of their management? Please explain.
4. What has been your contribution to the prevention of these conditions?

5. What key challenges have you identified in hypertension/diabetes management in Ghana?
6. What do you think is the way forward in the management of these conditions?

Focus Group Discussions

1. Could you please share your experiences on hypertension/diabetes care in Ghana? How do you describe the services and care you receive?
2. How do you describe access to hypertensive/diabetic care in Ghana? Are there financial or any other barriers? Please explain.
3. Which interventions do you think receive more attention- preventive, curative or both? Please explain.
4. Are you aware of the risk factors of these conditions? How are you receiving help to manage these risk factors?
5. As patients, which areas or issues do you think the Ministry of Health and the Ghana Health Service must focus in order to improve hypertension/diabetes care in Ghana? Please explain.
6. Do you think your views and experiences are considered in policies and strategies for hypertension/diabetes management? Why or why not?
7. As patients, do you feel some of your concerns are usually addressed through the care you receive? Please explain.
8. What do you consider to be the main challenges in hypertension/diabetes in management in Ghana?
9. What do you think can be done to make hypertension/diabetes care and management better in Ghana?

APPENDIX F. FOCUS GROUP INFORMATION SHEET



Department of Health Sciences

Telephone: +64 221361203

Email: mark.owusu@pg.canterbury.ac.nz

May 7, 2017.

Research topic: Effective management of non-communicable diseases in Ghana: the case of hypertension and diabetes mellitus

Information Sheet for Focus Group Discussions

My name is Mark Owusu, a PhD student of the University of Canterbury, New Zealand, and the Principal Investigator for this research. Hypertension and diabetes are the most prevalent non-communicable diseases in Ghana and among the leading causes of admission and mortality. National health policies can play a critical role in managing these diseases although studies in Ghana have largely focused on the prevalence of these diseases. As a patient, your views and experiences on how policies have influenced the services you receive are important aspects for improving the management of hypertension and diabetes in Ghana. This study is therefore aimed at examining hypertension and diabetes management from policy, community and health services perspectives.

If you choose to take part in this study, your involvement in this project will be to engage in a conversation with other hypertensive/diabetic patients and a moderator on your views and experiences on hypertension/diabetes care and services in Ghana in English. This conversation will be recorded with an audio tape recorder solely for the purpose of this research for about one and half hours.

As a follow-up to this investigation, you have the right to contact the researcher or his supervisors to check on this research project or make a complaint.

In the performance of the tasks and application of the procedures, there are no risks or discomforts that are anticipated from your participation in the study. The data and information collected during this study will remain confidential in secure premises during the study without linking it to you in anyway. If you agree to be involved, you can change your mind before or during the process and you do not have to give a reason. If you decide after the discussion you do not want to take part, you can inform the Principal Investigator within four weeks and your recordings will be destroyed.

Your information will be treated as confidential and your name will not be connected with anything you say in the entire process.

Participation is voluntary and you have the right to withdraw at any stage without penalty. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, the researcher will remove data relating to you from the study. However, once analysis of raw data starts on November 15, 2017, it will become increasingly difficult to remove the influence of your data on the results.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: your identity will not be made public without your prior consent. To ensure anonymity and confidentiality, the Principal Investigator will use codes to identify participants in the thesis and academic reports. Identification data will be kept on the principal Investigator's hard drive on a password-protected computer provided by the University of Canterbury. Back-ups will be kept securely on University of Canterbury Servers. Hard copies of data will be locked in the Principal Investigators cabinet at the University of Canterbury campus. Only the Principal Investigator and his supervisors will have access to the data. Data will be stored for a period of 10 years after which it will be destroyed. A thesis is a public document and will be available through the UC Library.

Please note that this study is for hypertensive/diabetic patients between the ages of 25 and 60 years and that children, adolescents, pregnant women, the elderly and mental patients are excluded from the study.

Please indicate to the researcher on the consent form if you would like to receive a copy of the summary of results of the project.

The project is being carried out as a requirement for a Doctor of Philosophy degree by Mark Owusu under the supervision of Dr. Arindam Basu and Assoc. Prof. Pauline Barnett who can be contacted at arindam.basu@canterbury.ac.nz and pauline.barnett@canterbury.ac.nz respectively. They will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in the study, you are asked to complete the consent form and return to the Principal Investigator.

Mark Owusu

APPENDIX G. FOCUS GROUP CONSENT FORM



Department of Health Sciences

Telephone: +64 221361203

Email: mark.owusu@pg.canterbury.ac.nz.

Effective management of non-communicable diseases in Ghana: the case of hypertension and diabetes mellitus

Consent Form for Focus Group Discussions

- ☐ I have been given a full explanation of this project and have had the opportunity to ask questions.
- ☐ I understand what is required of me if I agree to take part in the research.
- ☐ I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- ☐ I understand that any information or opinions I provide will be kept confidential to the researcher and his supervisors and that any published or reported results will not identify the participants and their respective institutions. I understand that a thesis is a public document and will be available through the UC Library.
- ☐ I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after ten years.
- ☐ I understand the risks associated with taking part and how they will be managed.
- ☐ I understand that discussions among group members should remain confidential.
- ☐ I understand that group discussions may be recorded for the purpose of the research only.
- ☐ I understand that I can contact the researcher, Mark Owusu (mark.owusu@pg.canterbury.ac.nz) or supervisor Dr. Arindam Basu (arindam.basu@canterbury.ac.nz) for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).
- ☐ I would like a summary of the results of the project.
- ☐ By signing below, I agree to participate in this research project.

Name: __ Signed: _____ Date: __

Email address (*for report of findings, if applicable*): _

This form should be returned to the researcher

APPENDIX H. RECRUITMENT SCRIPT FOR FOCUS GROUPS



Department of Health Sciences
Telephone: +64 221361203
Email: mark.owusu@pg.canterbury.ac.nz.

RECRUITMENT SCRIPT FOR FOCUS GROUP DISCUSSIONS

Purpose: This study is meant to understand how Ghana is responding to the hypertension and diabetes challenge.

Method: We are conducting a focus group discussion with hypertension and diabetes patients on their experiences and views on hypertension/diabetes care in Ghana.

This focus group is scheduled to take place on:

Date..... Time..... Location:

Would you be interested in attending.....?

Do you mind being audio recorded.....?

I would like to send you a letter or give you a call to confirm your participation and to give you directions to the focus group location. May I have your address or phone number, please?

.....

Approximately a week before the focus group discussion, I will call you to confirm your participation and provide answers to any questions you may have about the event. Thank you for agreeing to participate. I look forward to seeing you soon.

APPENDIX I. EXAMPLE OF DATA ANALYSIS USING NVIVO

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Name	Sources	References	Created On	Created By	Modified On	Modified By
Evidence		19	68 7/12/2017 10:39 PM	MOF	1/08/2018 2:46 PM	MOF
Policy support (Response)		3	16 20/02/2018 7:57 PM	MOF	15/06/2018 3:58 PM	MOF
Other policies		4	17 15/06/2018 12:21 PM	MOF	15/06/2018 2:58 PM	MOF
Response to hypertension and diabetes		34	273 7/12/2017 10:51 PM	MOF	15/01/2018 10:36 PM	MOF
Advocacy		13	20 7/12/2017 11:30 PM	MOF	1/08/2018 5:54 PM	MOF
Basic structures		10	11 8/12/2017 12:13 AM	MOF	24/06/2018 12:22 PM	MOF
Education		16	34 7/12/2017 11:32 PM	MOF	1/08/2018 5:55 PM	MOF
Financing		7	14 25/03/2018 12:00 PM	MOF	5/08/2018 2:25 PM	MOF
Focus of our response		7	11 7/12/2017 11:54 PM	MOF	1/08/2018 5:53 PM	MOF
International attention and support		3	6 7/12/2017 10:53 PM	MOF	5/08/2018 1:03 PM	MOF
NCDPC		4	15 15/03/2018 11:46 PM	MOF	16/06/2018 6:15 PM	MOF
Pipeline activities		5	5 15/01/2018 11:00 PM	MOF	24/06/2018 12:22 PM	MOF
Policy		9	12 16/01/2018 8:12 PM	MOF	24/06/2018 12:16 PM	MOF
Regenerative health		10	13 24/03/2018 8:12 PM	MOF	5/08/2018 2:11 PM	MOF
Research		10	19 7/12/2017 11:31 PM	MOF	30/08/2018 9:22 AM	MOF
Respondents' recommendations		2	2 17/01/2018 1:30 AM	MOF	24/01/2018 3:07 AM	MOF
Response to risk factors		6	44 25/03/2018 10:17 AM	MOF	1/08/2018 5:54 PM	MOF
Screening programs		9	10 7/12/2017 11:57 PM	MOF	24/06/2018 12:14 PM	MOF
Service delivery		14	48 8/12/2017 12:15 AM	MOF	5/08/2018 12:51 PM	MOF
Strategic papers		1	8 15/03/2018 11:49 PM	MOF	15/03/2018 11:55 PM	MOF
Understanding of the challenge		17	91 7/12/2017 11:17 PM	MOF	20/02/2018 8:34 PM	MOF
Appreciation of the challenge		11	32 7/12/2017 11:43 PM	MOF	6/07/2018 1:53 PM	MOF
Comparison with infectious diseases		5	6 7/12/2017 11:20 PM	MOF	6/07/2018 1:49 PM	MOF
Priority areas		3	3 7/12/2017 11:52 PM	MOF	24/06/2018 12:16 PM	MOF
Risk factors		9	39 7/12/2017 11:27 PM	MOF	5/08/2018 2:14 PM	MOF

APPENDIX J. ETHICS APPROVAL FROM GHANA HEALTH SERVICE

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

*In case of reply the
number and date of this
Letter should be quoted.*



Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Tel: +233-302-681109
Fax + 233-302-685424
Email: ghserc@gmail.com

MyRef. GHS/RDD/ERC/Admin/App /638
Your Ref. No.

Mark Fordjour Owusu
University of Canterbury
Christchurch 8140

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	GHS-ERC: 15/06/17
Project Title	Effective Management of Non-Communicable Diseases in Ghana: The Case of Hypertension and Diabetes Mellitus
Approval Date	14 th July, 2017
Expiry Date	13 th July, 2018
GHS-ERC Decision	Approved

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report **after completion** of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
DR. CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra

APPENDIX K. ETHICS APPROVAL FROM UNIVERSITY OF CANTERBURY HUMAN ETHICS COMMITTEE



HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2017/49

18 July 2017

Mark Owusu
School of Health Sciences
UNIVERSITY OF CANTERBURY

Dear Mark

The Human Ethics Committee advises that your research proposal "Effective Management of Non-communicable Diseases in Ghana: the Case of Hypertension and Diabetes Mellitus" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your emails of 29th June and 12th July 2017, and the following:

please send the HEC a copy of the approval you receive from the Ghana Health Service prior to conducting your data collection.

Best wishes for your project.

Yours sincerely

pp. *R. Robinson*

Associate Professor|Jane Maidment
Chair
University of Canterbury Human Ethics Committee

