Original Research

How best can Kenya strengthen its health policy to improve non-communicable disease care at the primary health care level?

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Abstract

Background: Kenya faces a growing burden of non-communicable diseases (NCDs), which account for over 50% of hospital admissions and 55% of in-hospital mortalities. Despite their prevalence, integrating NCD care into primary healthcare (PHC) remains a challenge due to infrastructural limitations, funding shortages, and policy gaps. This study investigates how Kenya's health policy can be strengthened to enhance NCD care delivery at the PHC level.
Methods: A qualitative, descriptive design was employed, incorporating stakeholder interviews, document reviews, and thematic analysis. Using Kingdon's framework and Bardach's eightfold path for policy analysis, data from key stakeholders—including policymakers, healthcare providers, and patients—were collected from three counties in Western Kenya. NVIVO software was used to identify themes and patterns related to barriers, facilitators, and opportunities for improving NCD care.
Results: Findings highlight systemic challenges, including inadequate healthcare worker training, poor dissemination of policies, resource shortages, and cultural barriers. Stakeholders underscored the need for increased funding, consistent access to essential medications, community outreach programs, and enhanced collaboration between the national and county governments. Integration of NCD care into PHC was identified as a critical priority to address these gaps effectively.
Conclusions: Strengthening NCD care at the PHC level requires policy reforms, sustainable financing, enhanced training for healthcare workers, and multi-sectoral partnerships. Recommendations include developing county-specific NCD frameworks, fostering public-private collaborations, improving community-based initiatives, and expanding health worker capacity. These actions align with Kenya's health policy goals and the global agenda for universal health coverage (UHC).

Keywords: Bardach's framework, health policy, Kenya, Kingdon's framework, non-communicable diseases, policy analysis, primary healthcare.

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Ethics Statement: This study was approved by the Moi Teaching and Referral Hospital Institutional Review Committee and the Indiana University Institutional Review Board. All participants provided informed verbal consent before participation.

Data Availability: The data collected in this stusy is available from the corresponding author upon request.

Introduction

1.1 Non communicable Disease Burden in Kenya

The burden of Non Communicable Diseases (NCDs) in Kenya is on the rise with an estimated 51 percent of the adult population suffering from at least one NCD (1). According to the 2015 STEPwise national survey by the Ministry of Health on risk factors for NCDs, NCDs accounted for 50 percent of all hospital admissions and 55 percent of all in hospital mortalities in Kenya (2). Like other countries in Sub Saharan Africa (SSA), Kenya faces the double burden of communicable diseases and NCDs against the backdrop of scarce resources. If not addressed appropriately and in a timely manner, the economic burden that comes with NCDs has the potential to cripple economies at both the household and national levels (3, 4). Prioritization of addressing the growing prevalence of NCDs in the Kenyan health policy agenda has become paramount to prevent the morbidity and mortality associated with these conditions.

1.2 Role of PHC in NCD care

Extension of NCD care to the primary health care level (levels 1-3) promises earlier diagnosis and management of NCDs (5, 6). Combating NCDs is not possible, however, without adequate, appropriate, sufficient resources, including human resources, a sustainable commodity supply chain, infrastructure, and health products and technologies (HPT). An enabling policy environment is also necessary for any NCD programs to succeed (7).
In 2020, the WHO put together the WHO Package of Essential NCD interventions (PEN) to help improve the coverage of appropriate services for people with NCDs services in primary care settings. There is, however, evidence that most African countries have yet to adapt the WHO recommendations of integrating NCD care into the primary care setting. (8). This can be attributed to lack of the right infrastructure necessary to offer NCD care at the PHC level. The MOH PHC strategy aims to reverse the rising burden of NCDs through health promotion and early case finding through institutional and community-based screening and referral.

1.3 Addressing NCDs in Kenyan Health Policy

The rising burden of NCDs globally has put the problem on the priority list of many national policies and intergovernmental agendas. The third sustainable development goal (SDG) aims to reduce premature mortality from NCDs by the year 2030 (9). The WHO developed population-wide strategies and policies to address the risk factors of NCDs and individual healthcare strategies for preventing and managing NCDs. The WHO Package of Essential Noncommunicable Disease Interventions for primary health care (PHC) in low resource settings is a prioritized set of cost-effective interventions for integration of essential NCDs in PHC. In its effort to achieve this goal, the Kenyan government in the Kenya Health Policy 2014 – 2030 has prioritized the halt and reversal of the rising burden of NCDs using various strategies. These include strengthening advocacy for health-promoting activities aimed at preventing increased burden NCDs, decentralizing screening for non-communicable diseases to lower levels to increase access and early detection, and provision of NCD care at the Primary Health Care (PHC) level (10). One of the major milestones achieved by the

government since the inception if this policy, is the creation and staffing of the department of NCDs in the Ministry of Health (MOH).
One of the main achievements of this department is the launch of the strategic plan for the prevention and control of NCDs 2021/22 – 2025/26. This strategic plan was informed by the need to strengthen comprehensive multi-sectoral responses to the increasing NCD burden. It provides a multi sectoral approach towards NCD prevention and control by accelerating efforts to reduce suffering, disease, and death, thus contributing towards the national aspiration of halting and reversing the burden of NCDs (11). One of the guiding principles of the strategic plan is to provide NCD care across the care continuum with a goal to improve the capacity of primary health care to address NCDs.

1.4 Primary Healthcare Organization in Kenya

In 2013, Kenya transitioned into a devolved system of governance comprising two levels: the national government and 47 semiautonomous county governments. Under this new governance system, the health service delivery function was transferred to county governments while the national government retained policy and regulatory functions.
Kenya's healthcare system is structured in a hierarchical manner consisting of six levels of care: Level 1: Community, Level 2: Dispensaries, Level 3: Health centers, Level 4: Primary referral facilities, Level 5: Secondary referral facilities, Level 6: Tertiary referral facilities. Levels 1, 2 and 3 constitute the primary care units with community health volunteers, nurses and clinical officers running these facilities, respectively. The range of services is limited to preventive services and treatment of mild, uncomplicated illnesses. All three lack inpatient facilities or capacity for more advanced and specialized care. The PHC in Kenya is challenged by low levels of staffing, lack of health products and technologies, poor financing and ineffective reporting systems (12).

1.5 Primary Health Care Policy Environment in Kenya

Universal Health Coverage (UHC) has been defined by the WHO as a state in which people have access to the full range of quality health services they need, when and where they need them, without financial hardship. It covers the full continuum of essential health services, from health promotion to prevention, treatment, rehabilitation, and palliative care across the life course (13).
In 2017**,** President Kenyatta launched the Big Four Agenda – a strategy that seeks to transform the country's economy and help Kenya realize Vision 2030. Achieving UHC was one of the four big agenda items, and this set in motion events and actions geared towards achieving it (14). One of the main realizations that came about as a key element towards achieving UHC was the need to have a robust system of PHC, especially in rural and other underserved areas. This spurred the development of the primary healthcare strategic framework to improve PHC in Kenya. One of the main strategic directions involves improving systems for the supply chain, improving services for NCDs, and strengthening the referral system (12).
The initial UHC pilot was confounded by challenges. These included:

- People were still going to the higher-level health facilities to obtain primary health care services;
- Health services for the community were not available at the point of need;
- There were weak linkages between the PHC facilities and the community; and
- Trust within primary health care service delivery was at a low level.

These challenges resulted in a renewed effort to strengthen PHC. Multiple stakeholders called upon to assemble Primary Healthcare Network (PHN) Guidelines. The aim of the guidelines is to bring about coordination of the PHC services in Kenya (15).

1.6 Gap in Utilization of PHC for NCD Management in Kenya

Despite overwhelming evidence of the rising burden of NCDs and the important role played by primary health care in combating them, PHC facilities are less well-prepared to provide NCD care compared to higher level facilities in Kenya (16). This is true despite the MOH having invested heavily in the development of strategies for improvement.

1.7 Significance of the study

This study holds profound significance in the context of Kenya's healthcare landscape, specifically concerning the rising burden of Non-Communicable Diseases (NCDs). With approximately 51 percent of the adult population in Kenya afflicted by at least one NCD, and these conditions accounting for a staggering 50 percent of all hospital admissions and 55 percent of in-hospital mortalities, it is evident that NCDs pose a critical health challenge (Smit et al., 2019; Ministry of Health, 2015).

The study's primary significance lies in its dedicated effort to address this pressing issue by focusing on strengthening the Kenya Health Policy 2014 – 2030 at the primary healthcare (PHC) level. Enhancing NCD management at the PHC level is pivotal in mitigating the NCD burden and aligning with global health objectives, such as Sustainable Development Goal 3 (UNDP, 2021). By exploring the social, economic, political, and organizational factors influencing NCD care policies and engaging with various stakeholders, this research aims to foster a more comprehensive, contextually relevant approach to managing NCDs in Kenya. Through this study, the recommended policy enhancements will aim to create a more robust PHC system, thereby contributing to a substantial reduction in the burden of NCDs and aligning with national health goals. The research's findings will not only inform policy development but will also enhance the overall understanding of NCD care at the PHC level in Kenya. Consequently, this will catalyze future research, policy reform, and programmatic efforts, ultimately leading to better NCD care delivery and improved outcomes for Kenyan citizens.

1.8 Research Objectives

- To describe the social, economic, political, and organizational conditions that constitute the environmental context for Kenya Health Policy 2014 – 2030 with regard to NCD care at the PHC level.
- To identify and provide detailed descriptions of primary stakeholders through a comprehensive analysis, facilitating the exploration of potential alternatives or

modifications to the Kenya Health Policy 2014 – 2030 aimed at enhancing NCD care at the PHC level.

- To conduct an in-depth analysis of the Kenya Health Policy 2014 – 2030, assessing and evaluating potential policy options or modifications designed to enhance NCD care at the PHC level. This evaluation will focus on aspects of feasibility, effectiveness, sustainability, and alignment with national health goals and priorities.
- To develop well-grounded, evidence-based policy recommendations and formulate a plan for change based on the findings of the policy analysis, aimed at improving NCD care at the PHC level.

Methods

2.1 Study Design

This non-experimental, descriptive study was conducted in three phases: Document review, stakeholder identificationan and engagement, policy analysis and recommendation development. The study adopted a triangulated research approach combining interpretivism, post-positivism, and pragmatism to address the complexity of integrating NCD care into primary healthcare (PHC) in Kenya.

Interpretivism: This paradigm was crucial for understanding the lived experiences of stakeholders such as healthcare providers, patients, and policymakers. By employing qualitative methods like in-depth interviews, the study captured the nuanced socio-cultural and contextual factors that influence NCD care delivery, such as cultural beliefs about chronic illnesses, community health practices, and local attitudes toward healthcare systems. For example, interpretivism helped uncover that some patients attributed their conditions to witchcraft, delaying treatment and complicating care-seeking behaviors.

Post-Positivism: Post-positivism allowed for objective data collection and analysis, focusing on measurable aspects of the problem. This was particularly useful in evaluating the gaps in policy implementation and resource allocation, such as infrastructure inadequacies and medication stock-outs. The use of systematic thematic coding in NVIVO, along with Bardach's eightfold path for policy analysis, ensured that the findings were grounded in evidence and provided a robust foundation for policy recommendations.

Pragmatism: Pragmatism bridged the theoretical and practical aspects of the research. It focused on actionable solutions to the identified gaps, emphasizing what works in specific contexts. For example, the study prioritized recommendations like strengthening health worker training, improving supply chain systems, and fostering public-private partnerships, which are immediately applicable in Kenya's healthcare landscape. Pragmatism ensured that the study's findings were not only descriptive but also geared toward driving meaningful change.

How Triangulation Enriched Insights
The integration of these paradigms enriched the research by offering a holistic view of the challenges and solutions. Interpretivism provided deep contextual understanding, post-positivism added rigor and evidence-based analysis, and pragmatism ensured the results were grounded in actionable recommendations. Together, they allowed the study to address the "what," "why," and "how" of improving NCD care at the PHC level, ensuring a comprehensive understanding of the problem and viable pathways for intervention.

2.2 Stakeholder Engagement
2.2.1 Stakeholder Sampling
Stakeholders were purposively sampled based on Kingdon’s framework, ensuring representation across all relevant stakeholder groups. The classification was as follows ,

- **Problem Stream:** Stakeholders that identify and define the issue of NCD management gaps in PHC settings, contributing to agenda-setting.
- **Policy Stream:** Stakeholders that propose and implement solutions to improve NCD care, focusing on resource allocation, capacity building, and policy adherence.
- **Political Stream:** Decision-makers and influencers who allocate funding, drive political will, and align healthcare priorities with national development agendas.

Table 1: Stakeholder Categories by Kingdon's Framework

Kingdon's Category	Stakeholder Groups	Number of Stakeholders	Description
Problem Stream	NGOs in NCDs	2	Advocate for health equity, raising awareness on NCD challenges.
	Patients with NCDs	1	Highlight challenges in accessing quality care and advocate for better healthcare services.
	Community Opinion Leaders	3	Amplify community concerns about NCD care gaps and help identify local health challenges.
	Researchers & Academicians	2	Provide evidence and data highlighting the burden of NCDs and gaps in service delivery.
	Media (if indirectly referenced under stakeholders)	Assumed part of other data	May contribute to framing the issue of NCDs for public and policy attention.
Policy Stream	Health Professionals	6	Key implementers who provide care, advocate for resources, and

			support policies that enhance the NCD care framework.
	Professional Associations (e.g., medical/nursing organizations)	3	Advocate for healthcare worker needs and provide expert input on NCD care integration.
	Healthcare Providers	6	Deliver services at primary healthcare facilities and identify practical challenges in implementing NCD policies.
	County Directors of Health	3	Ensure implementation of policies and allocate resources for NCD care at the county level.
Political Stream	MOH Health Policy Dept. and Principal Secretary	2	Drive national policy formulation, coordination, and implementation of NCD-focused initiatives.
	Political Leaders	3	Advocate for health budget allocation, provide political support, and align health priorities with UHC and development goals.

2.3 Inclusion and Exclusion Criteria
2.3.1 Inclusion Criteria

- Stakeholders involved in primary healthcare.
- Government representatives engaged in health policy.
- Patients living with NCDs.
- Community leaders.
- County government health department representatives.
- Participants consenting to the study.

2.3.2 Exclusion Criteria

- Stakeholders unable to participate due to reasons other than refusal to consent.
- Individuals under 18 years of age.

2.4 Data Collection
Data were collected through an extensive literature search of existing data both locally and globally, utilizing reputable search engines such as Google Scholar, PubMed, and Scopus. White papers and government documents were scrutinized to give a comprehensive picture of the conditions that together constitute the environmental context for the Kenya health policy. These data were complemented through stakeholder interviews. Interviews were conducted

with key stakeholders after obtaining informed consent. These in-depth interviews, lasting approximately 30 minutes each, were carried out either in person or via Zoom, depending on participant availability. Data collection continued until saturation, defined as the point where no new information emerged, was reached (Glaser & Strauss, 2017).

2.5 Data Management and Analysis

Recorded data were transcribed following each interview session . All transcripts were coded using NVIVO, followed by a thematic analysis. A code book was first generated to guide the subsequent analysis. Codes were generated deductively guided by the research question, and inductively as the coding progressed. Elements of raw data that were meaningful regarding the research question were coded. The analysis, first commenced with the coder becoming familiar with all the transcript data and the questions/probes used during the interview sessions. This was followed by the reading of every sentence and inductively coding every relevant segment of data that provided the information. During the thematic analysis, repeated patterns were identified, analyzed and reported across the scripts. Deeper meanings to the themes were documented and discussed among researchers before finalizing the final report. Descriptive summaries and quotes representing the main themes were captured and summarized. Quotes which best exemplified and supported the described themes were selected.

2.6 Policy Analysis and Recommendation

The study applied Bardach's eightfold path for policy analysis. It commenced with problem identification, clearly articulating the gaps in addressing non-communicable diseases (NCDs) at the primary healthcare level. The next step involved assembling evidence, which included stakeholder interviews and document reviews to identify barriers, facilitators, and opportunities for improvement. Alternatives to enhance policy effectiveness were then developed, drawing on insights from evidence gathered. These alternatives were evaluated against a set of criteria, including feasibility, cost-effectiveness, equity, and alignment with the Kenya Health Policy's goals. Based on this evaluation, specific policy recommendations were formulated. The process concluded with outlining actionable next steps and a strategic advocacy plan to advance the selected recommendation, leveraging stakeholder collaboration and leadership principles.

2.7 Ethical Considerations

2.7.1 Institutional Review Board (IRB) Approval

The study was approved by the MTRH-IRB, with reciprocal approval from Indiana University IRB.

2.7.2 Confidentiality and Data Protection

Patient data were de-identified and stored securely in a password-protected computer accessible only to the principal investigator, ensuring participant privacy and anonymity.

2.7.3 Informed Consent

Participants were provided with detailed information about the study, including its purpose,

potential risks, benefits, and confidentiality measures. Consent forms included provisions for participants to receive study findings via email.

2.7.4 Voluntary Participation

Participation was entirely voluntary, with participants informed that they could withdraw at any stage without affecting their healthcare services.

2.7.5 Participant Well-being

Measures were taken to ensure participant well-being throughout the study, including maintaining open communication channels for addressing any concerns.

2.8 Study Limitation

A key limitation is the potential bias introduced by self-reported data. To mitigate this, triangulation with literature and other data sources was employed, and data collection continued until saturation was reached.

Results

3.1 Objective 1: To describe the social, economic, political, and organizational conditions that constitute the environmental context for Kenya Health Policy 2014 – 2030 with regard to NCD care at the PHC level

The Kenya Health Policy 2014–2030 aims to address the country's growing health challenges, particularly the increasing burden of NCDs. NCD care at the primary healthcare level is central to this strategy as it promises awareness creation, early detection, prevention, and treatment. However, the policy operates within a complex environmental context shaped by social, economic, political, and organizational conditions, which critically influence the success of NCD management at the PHC level.

Social Context

Kenya is experiencing a demographic transition with an aging population, urbanization, and lifestyle changes that contribute to the increasing prevalence of NCDs such as diabetes, hypertension, and cardiovascular diseases(17). An estimated 51% of the adult population suffers from at least one NCD, and NCDs now account for 50% of hospital admissions and 55% of hospital deaths (2). This epidemiological shift presents a significant challenge for the health system, which has traditionally focused on combating infectious diseases. In an addition to these challenges the lack of health seeking behaviour among the population remains a major hinderance to accessing health services. There is still a gap in awareness and knowledge about NCD prevention, leading to late diagnoses. Many Kenyans, especially in rural areas, are more familiar with seeking treatment for communicable diseases rather than NCDs.(18, 19).
Cultural barriers play a significant role in influencing peoples access to care. In most cases chronic diseases are stigmatized, and people prefer to access alternative care, which is also most times cheaper and more reliable(18). These factors have exemplified the need to have a inclusive health policy that addresses health needs and challenges within the unique context in which they occur. Community focused approaches have been adopted by the Ministry of Health in Kenya in an attempt to address some of these social determinants of health. The

realisation that UHC was only achievable with a shift in focus to the community lend to the establishment of the primary health care startegy in 2021(20). Kenya's primary health care strategy heavily relies on community health volunteers who play a critical role in health promotion, screening, and early detection of NCDs at the community level. The PHC strategy emphasizes their role in improving public understanding and encouraging healthier lifestyles.(21)

Economic Context

NCDs contribute to significant out-of-pocket expenses due to long-term care, medication, and hospitalizations, which disproportionately affect poorer communities. The cost of NCD care is very high in Kenya, putting the people at a high risk of catastrophic health expenditure(22). This is situation is worsened by the fact that a large proportion of Kenya's population lives below the poverty line, limiting their ability to afford healthcare services, especially for chronic conditions that require long-term treatment (23).

In 2001 African heads of state signed the Abuja declaration in which they committed to dedicate 15 percent of their national budgets to health . An audit showed that commitment was yet to be achieved, with health remaining grossly underfunded in most African countries(24).The scenario is just as bleak in Kenya where the funding for health remains below 5 percent of the national budget(25) and continually suffers from drastic budget cuts further aggravating the strife (26). Although Universal Health Coverage (UHC) is a national priority under the Big Four Agenda(27), the actualization of UHC has faced hurdles, including inconsistent financing and limited capacity at the primary care level(25, 28) .

The primary health care level remains the most accessible care points for most people as these services are provided close to their homes . Many PHC facilities, which provide more affordable care, are ill-equipped and underfunded to manage NCDs (29) (30).

Political Context

Kenya's devolution of healthcare services in 2013, which transferred the responsibility for service delivery to the 47 county governments while leaving policy formulation and regulation with the national government, has significantly impacted the organization of PHC services. Devolution has led to unequal resource distribution across counties, with wealthier counties better able to invest in health infrastructure and services, while poorer counties struggle with limited funds (31, 32). This has directly affected the ability of PHC facilities in many counties to manage NCDs effectively.

The Big Four Agenda, launched by President Kenyatta, placed UHC at the heart of Kenya's national development goals. The Kenya Health Policy 2014–2030 aligns with this by prioritizing the reduction of NCD morbidity and mortality(10). However, the initial UHC pilot programs revealed inefficiencies, such as weak linkages between community-based care and higher-level facilities and a tendency for patients to bypass PHC facilities for higher-level services (33, 34). Kenya's commitment to global health frameworks, such as the Sustainable Development Goals (SDG), particularly SDG 3(35), which seeks to reduce premature deaths from NCDs by one-third by 2030, has helped shape the national NCD

agenda. An audit of the national progress toward attaining this shows many gaps that need to be addressed (36). The current political regime took over power in 2022 and has maintained the need to focus on UHC. There is an increased emphasis on the need for improved collaboration between the national and county government to improve care delivery. The new government has also rolled out a new social health funding model aimed at attainment of UHC(37).

Organizational Context

Kenya's healthcare system is structured into six levels, with the PHC strategy focusing on strengthening the first three levels: community units, dispensaries, and health centers. These form the bedrock of healthcare service delivery and are critical for ensuring equitable access to essential health services, including the prevention and management of NCDs (12) .

A key organizational reform within Kenya's health sector is the introduction of Primary Care Networks (PCNs), designed to improve service delivery, coordination, and referral systems between healthcare facilities. PCNs are structured to link community units and PHC facilities with higher-level hospitals, ensuring smoother referrals and continuity of care for patients. This linkage is crucial for effective NCD management, as it allows for seamless transitions between different levels of care, from prevention and early diagnosis at the community level to specialized treatment in referral hospitals (20).

Despite the reforms, many PHC facilities and PCNs face challenges that hinder their effectiveness. Poor infrastructure, insufficient funding, low human resources for health (HRH) and unreliable supply chains often result in frequent stock-outs of essential medicines and diagnostic equipment necessary for NCD care (29). These challenges are particularly acute in rural and underserved regions, where health facilities struggle to meet the increasing demand for NCD services.

In addition to the structural and policy reforms within the healthcare system, various stakeholder groups play crucial roles in the implementation of NCD management strategies at the PHC level. These stakeholders include government entities, healthcare providers, community health volunteers (CHVs), non-governmental organizations (NGOs) academicians, professional groups, and the general public. A review of these stakeholders, based on their level of influence and interest/engagement, is depicted in the following 2x2 matrix.

Table 2: Stakeholder Matrix

Stakeholder Group	Level of Influence	Level of Interest/Engagement
Ministry of Health (MOH)	High	High
Healthcare Providers	High	High
County Directors of Health	High	Medium
NGOs in NCDs	Medium	High
Patients with NCDs	Medium	High
Researchers & Academicians	Medium	Medium
Community Health Volunteers	Medium	High

Professional Associations	Low	High
Political Leaders	High	Low
Community Opinion Leaders	Low	Medium

3.2 Objective 2: To identify and provide detailed descriptions of primary stakeholders through a comprehensive analysis, facilitating the exploration of potential alternatives or modifications to the Kenya Health Policy 2014 – 2030 aimed at enhancing NCD care at the PHC level.

To identify and provide detailed descriptions of primary stakeholders through a comprehensive analysis, facilitating the exploration of potential alternatives or modifications to the Kenya Health Policy 2014 – 2030 aimed at enhancing NCD care at the PHC level.

Table 3: Detailed Stakeholder Analysis

Stakeholder	Role	Source of Power	Level of Influence	Interest
Ministry of Health (MoH)	Primary policymaker, develops national health policies, and manages NCD frameworks and guidelines.	Authority over national policy, health funding, and regulations. Control over the allocation of resources.	High - Influences national health priorities and funding.	Effective NCD management, improving health outcomes, reducing mortality, and achieving UHC goals.
County Governments	Responsible for implementing healthcare services at the local level, including NCD care.	Devolved power over health facility management, local health funding, and service delivery.	Medium - Local political power affects service delivery.	Efficient service delivery, better access to quality healthcare, and adequate funding for NCD care.
Healthcare Workers & Associations	Directly involved in delivering health services at PHC facilities, including NCD care.	Professional authority, ability to advocate for better working conditions, and service delivery.	Medium to High - Can influence policy through advocacy and expertise.	Better working conditions, training opportunities, and resources to improve NCD care.

Development Partners/Donors	Provide funding, technical assistance, and support to healthcare programs.	Financial resources, technical expertise, and alignment with global health goals like SDGs.	High - Significant influence due to financial and technical resources.	Ensuring transparency, sustainability, and alignment with global health agendas.
NGOs and Civil Society	Advocate for health equity, mobilize communities, provide health services at grassroots levels.	Grassroots mobilization, advocacy, and community-based evidence.	Medium - Strong at the local level, but limited at national policy level.	Improved health equity, better community health systems, and effective implementation of NCD policies.
Private Sector (Pharma, Health Insurance, Private Facilities)	Provides healthcare services, medications, and insurance.	Financial influence, healthcare infrastructure, and access to innovation.	Medium to High - Influences healthcare access, particularly in urban areas.	Profitability, sustainable partnerships, and access to NCD care for their clientele.
Patients and General Public	Primary beneficiaries of health services, including NCD management.	Collective action through advocacy, feedback mechanisms, and public opinion.	Low to Medium - Limited individual influence, but can exert collective pressure.	Affordable, quality healthcare services, improved health literacy, and access to preventive care.
Kenya Medical Supplies Authority (KEMSA)	Manages medical supply chain, including essential medicines for NCD care.	Control over procurement processes, distribution, and inventory management.	High - Directly impacts the availability of medications and medical equipment.	Efficient supply chain management, ensuring essential medicines for NCDs are available.
Academic and Research Institutions	Conduct research and generate	Research expertise, ability to influence through	Medium - Influence through	Continued support for health research

	evidence to inform NCD policy.	evidence-based recommendations.	research, though limited in direct policy change.	and its application to NCD policy and practice.
Media	Raises public awareness about NCDs and health policies.	Influence over public opinion, ability to shape discourse through coverage.	Medium - Significant in influencing public opinion and policymaker priorities.	Promoting public health awareness, transparency, and accountability in the healthcare system.

3.2.1 Stakeholder perceived challenges of implementation of NCD care at lower facility levels

The implementation challenges are multi-faceted ranging from individual level (patient related factors), structural (contextual or environmental factors) and policy related factors.

Table 4: Codebook for the thematic analysis

Cadres	Who were the cadre of respondents? Were they patients? Health care workers (what cadre), policy makers? Academicians? policy implementers? Politicians?	19	21
Cadre involvement in NCD policy	Description on the level of involvement in NCD policy at the primary health care	19	31
Description on current state of NCD care	A description on the current state of NCD care in the country as perceived by different stakeholders/ respondents? Is it adequate?	18	19
Challenges	A description of the challenges on the current state of NCD are in the country as perceived by different stakeholders/ respondents.	12	27
NCD care gaps	A description of the existing gaps on the current state of NCD care in the country as perceived by different stakeholders/ respondents?	13	17
NCD care wins	A description of the wins/gains on the current state of NCD care in the country as perceived by different stakeholders	9	13

Health policy knowledge	An exploration of the knowledge on the health policy among the respondents.	17	23
Involvement at policy level	How are the stakeholders involved at any policy level	5	5
Perception on whether the policy addresses NCD care at PHC	An exploration of the perception on whether the policy adequately addresses the NCD care at the PHC level	14	23
Gaps in current policy	Gaps within the policy that hinders effective NCD care	8	10
Patient experiences on NCD care	A description of the experience of patients receiving and NCD care at PHC level.	2	2
Challenges experienced by patients at NCD care	Describing the challenges perceived by patients receiving NCD care at the PHC level	2	4
NCD care improvement proposals	Ways stakeholders in different groups feel NCD care at PHC can be improved	7	23
Challenges faced by care providers when offering NCD care	Challenges faced by care providers in offering care for NCDs at the PHC level?	8	20
Patient challenge	Patient related challenges	5	7
Proposals by care providers on improvement of NCD care	Proposals from care providers on improvement of NCD care (aimed at dealing with the challenges they raised)	10	24
Facility related challenges	Description of facility related challenges as stated by the health care providers	3	5
Strategies to address challenges	Health care workers describing strategies that were put in place to address the challenges mentioned	5	8
Stakeholder identification and influence level	What are the stakeholders identified by the respondents, what is their level of influence	15	23
NCD care models referenced	What other NCD care models have worked in other areas that can be referenced to improve our own policy	16	18
NCD policy improvement by policy makers	What are the current improvement, if any attempted by the policy makers to improve NCD care	6	8
Other Government attempts to improve NCD care	Other attempts by the government to improve NCD care at PHC level in Kenya	8	8

Other stakeholder experiences in offering NCD care	Excluding the patient, what do other stakeholders say about experiences in when offering NCD care.?	4	5

Challenges in the dissemination of policies
Respondents identified several challenges that hinder effective implementation of non-communicable disease (NCD) care. Respondents acknowledge that while policies have been formulated to address effective NCD care, the lack of resources to ensure that these policies are implemented remain a significant challenge. Due to resource limitations, the dissemination of policies from formulation to practical implementation has been difficult. As a result, good policies are often underutilized or fail to reach the intended beneficiaries.

> *So one of the problems is time. There is still a gap in terms of disseminating the policy to the lower level because you find maybe there are no resources to do that because they can do at the higher level and then we do not have the commensurate dissertation at the lower level. So there will be always gaps in terms of implementing the same policy.*

Infrastructural and system limitation
Respondents highlight infrastructural limitations in the implementation of NCD care at the primary level, which are critical for effective management and prevention. This is a significant gap because rehabilitation facilities are essential to comprehensive care, ensuring recovery and long-term management of patients with NCDs. A lack of building infrastructure such as consultation rooms, coupled with a limitation of trained staff, overburdens the system. NCDs require consistent, long-term follow-up, which requires creative strategies within the available resources. Such a strategy is delegating the follow-up of NCD patients to Community Health Promoters (CHPs) which introduces an additional challenge. Payments of stipends to CHPs are sometimes delayed, leading to low motivation and, consequently, inconsistent follow-up for NCDs patients. This inconsistency hampers patient monitoring and adherence to long-term care plans, further complicating the management of NCDs at the community level.

> *So talked about availability of commodities. And lab tests. Another thing for NCD plans. Remember this condition, some of the conditions are not good say they're not like any other disease. So a patient needs follow up. Like, hypertension, diabetes, these patients need to be followed up more frequently. As it stands, this work is left to the CHPs community health promoters. And we all know that the stipends that comes from the national government and the county government is not consistent. So you find there's nothing to motivate the CHPs to do follow ups.*

Respondent welcomed the idea of implementing NCD care at primary level facilities, however they believed that specific challenges as elaborated below would hinder effective NCD care at primary care facilities.

a. **Equipment**

Lower level facilities lack of essential equipment. This equipment is necessary for the timely diagnosis and management of NCDs. Having the tools readily available within the patient's vicinity would enable healthcare providers to measure and monitor patients as soon as symptoms arise, improving early detection and intervention. This would also reduce effects of lack of resources on the part of patients having to travel to further-off facilities for care.

b. Community outreach

In the absence of regular support for community outreaches by the Ministry of Health (MoH), there is a failure in early case identification and prevention; thus, it costs the government more to deal with cases that are more complex and at advanced stages. Financial constraints remain a major obstacle for frequent educational seminars and health promotion activities to be conducted at the primary care level facilities into the community. This shortage in resources not only compromises health education but the quality of care in general.
(Eeeh) at the primary care level, a lot of services are not in place (background noise) we currently don't have the rehabilitation centers and also the number of educational seminars that are done on the primary level (knock on the door) are very few, maybe we need to increase the number of sessions at the primary care level.

While community education and health promotion are essential components of NCD prevention, respondents emphasize the urgent need for more trained staff particularly in Chronic Disease Management (CDM), which focuses on NCDs. The training is especially crucial across all levels of healthcare, especially at level two, three and four hospitals, where resources and staff expertise are limited compared to higher level facilities.

c. Workforce constraints

Staffing has been mentioned as a primary concern for implementation. Apart from limited staffing most lower level facilities are managed and fully run by nurses, and usually just one nurse. Respondents are concerned about the level of skills and training of nurses who manage NCDs. It is also challenging to train them because of workforce constraints. A respondent report that while he has tried to offer mentorship to clinics he has been unable to do so because the healthcare worker at the PHC facilities has to attend to other patients leaving no time for him/her to learn NCD care and management. This challenges sustainability of the services within the PHC facilities.

> *Yeah there is for example policy gaps where nurses are still the ones to prescribe and the other one who find at level three level two and then there is …*

d. Resource allocation

Respondents report that lower level facilities do not charge for service provision, hence the concern regarding financing for NCD medication. Additionally, ensuring that dispensaries are equipped with the necessary medications and resources for managing NCDs is important in ensuring quality of care. This would include training staffs and providing the required tools and supplies. Furthermore, the respondents underscore the scarcity of community programs

such as educational and health promotion activities, which are essential for raising awareness, improving prevention efforts, screening and empowering communities to manage NCD risks. Most screening campaigns are currently supported by implementing partners, highlighting a lack of sustainable support from the Ministry of Health (MoH) for community programs, such as facility outreaches.

Leadership and political goodwill

Lack of leadership and political goodwill are critical gaps in implementation of NCD care. The issues highlighted by respondents can be directly linked back to leadership and political leadership.

These issues require multi-faceted approach such as increasing funding, integration of relevant policies, ensuring availability of equipment, health product and technology, and ensuring leadership are informed and committed to the course. Below are highlights of leadership and political factors that affect implementation of NCD care at PHC facilities.

- ***Funding Prioritization***

Respondents reveal that the primary issue is the need for leadership commitment to adequate funding for NCDs. The respondent points out that the country needs to reprioritize health funding to meet the Abuja Declaration's commitment of allocating 15% of GDP to healthcare, a target that has yet to be achieved. Without sufficient funding, it is challenging to support and sustain NCD care effectively.

- ***Policy Integration***

Beyond funding, respondents indicated that there is a need for policy reform. They state that effective integration of NCDs into primary care is hindered by broader health policies not directly related to NCDs, such as those concerning human resources for health. These are the policies that need to be addressed, and this is because NCDs are long-term management diseases, unlike acute diseases such as malaria. Health workers' retention, motivation, and engagement would, therefore, mean sustaining the care over time. Policies have to be aligned to support the specific needs of chronic disease management.

Policy frameworks for diabetes and hypertension care are not outlined by the health policy. Care often does not include management at the dispensary level, whose typical mandate is basic diagnoses and primary care. The policy framework can lead to fewer access points for patients, especially in remote or underserved areas.

> *So I think, traditionally, and as guided by the health policy, care for diabetes and hypertension does not begin at the dispensary level. And this is the part of the primary health care level, the dispensary is for basic diagnosis. So if left to strictly go by that by the health policy, it means fewer facilities offering care for diabetes and hypertension, fewer and far off. So in some way, this is reducing access to care. Okay. Yeah. And, you know, if we, if we look at it that way, too, it means that no drugs, and then the workforce at the dispensary, does not support care for diabetes and hypertension.*

- ***Availability of health products, equipment and technology***

Another significant barrier mentioned by respondents is the lack of health products and technology at the primary care level.respondents cited the long and tedius public procuremnt processes, the delays in KEMSA and the lack of funds in health facilities to cover deficits. Policies related to health technology and the availability of commodities need to be strengthened and adapted to ensure that necessary resources are accessible. Without these resources, efforts to manage NCDs will remain ineffective, with good intentions failing to translate into meaningful action.

- ***Leadership and governance***

Respondents underscore the importance of leadership and governance. Effective NCD management requires leaders who deeply understand the chronic nature of NCDs and the long-term benefits of investing in their management. The challenge is that NCDs often do not provide immediate, visible results, which can make them less attractive for political prioritization. Emphasizing the long-term benefits of NCD investments and building a robust investment case could enhance leadership support and ensure that NCDs receive the attention they deserve.

Patients' beliefs and practices

Respondents identified several structural and organizational barriers to NCD management, however one aspect is community norms such as cultural beliefs. One key issue is that many individuals do not associate their health problems with lifestyle factors, instead attributing their conditions to causes like witchcraft or spiritual beliefs. This perception delays treatment, as some people rely on traditional medicine, believing it to be the only solution. Consequently, they often seek medical care only when it's too late.

Additionally, the prolonged nature of NCD treatment, such as for diabetes or hypertension, is misunderstood by some patients. They expect these conditions to be treated as quickly as acute diseases like malaria, where short-term treatment leads to recovery. This misunderstanding results in poor adherence to long-term care and medications, exacerbating health outcomes.

> *…basically some of them are administrative …others are cultural aspects of the clients themselves or society (eehm) because people still believe that their problems might not be associated with lifestyle … they are associated by sometimes witchcraft maybe somebody did not see them well … others believe that traditional medicine is the only medicine which can cure them so they come very late and some because of the long …(in distant voices) long type of treatment patients feel that lifestyle diseases should be treated like maybe malaria which they just have to treat and get well and be on drugs (in distant voices) so patients attitude on treatment , finance and cultural aspect.*

Drug stock outs and commodity shortages

Patients frequently encounter situations where necessary medications are not available at dispensaries. This leads to interruptions in treatment, which can adversely affect patient health outcomes and complicate the management of NCDs. There are also reports of shortages in laboratory equipment and supplies, which hinder the ability to conduct necessary diagnostic tests. This lack of diagnostic capability affects the ability to monitor and manage NCDs effectively, as timely and accurate testing is crucial for appropriate care.

> *So yeah at the dispensary level there are, there are challenges. The challenges you'd face is sometimes you go to a certain dispensary you are out of your eh medications and when you arrive there they don't have stocks of those medications. The second challenge you can face is maybe you've gone there you need to get some tests done and you find that eh the lab equipment are not available so it becomes a challenge.*

Health financing

NCD patients report that they experience financial challenges when managing their chronic conditions due to the high costs of medications and treatment. They state that the medical coverages available to them are not sufficient to cover all their needs and, in addition, they do not have access to higher level facilities which have better quality services.

> *Medication is very expensive and eh national, the health cover is not sufficient to cover for all our medical needs when need arises, you will find that some facilities which have got the proper medication and facilities are shut down to us people from the grass root.*

Referral system gaps

Healthcare workers report that there is often no proper or efficient referral system in place. When patients present with challenges that require specialized care or senior review, the process of referring them to higher facilities can be in-effective. The healthcare worker is unsure if the patient will heed the referral or they will get services where they are referred to. The inefficiency contributes to the overall challenges of managing NCD patients with available limited resources.

> *sometimes you don't have a proper way or referral system of clients when you have some clients who have some challenges that need maybe a senior review when you refer them they don't maybe go to the referral or get the services there. Those are part of the challenges that we do get.*

Patient healthcare facility preference

Respondents report that there was a concerted effort to attempt to streamline the referral system, which aimed to guide patients from the community level to dispensaries, health centers, and then to higher level facilities. However, this system is not working effectively due to patient preference and attitudes. One major barrier to receiving care at PHC is that patients prefer larger, higher level-facilities such as level 4 hospitals, where they believe they

will receive comprehensive care. The perception that they will receive better services at larger facilities, affect their willingness to utilize lower-level care options.

Proposals for improving NCD care at the PHC setting

- **Community outreaches**

Respondents emphasize the need for an elaborate community outreach program that includes educational activities such as community dialogues specifically tailored for NCDs and NCD-specific screenings. These outreach programs are crucial for raising awareness, facilitating early detection, and empowering communities to manage non-communicable diseases effectively. However, respondents stress that for such programs to be sustainable, adequate financial resources are required. Without consistent funding, these outreach initiatives may remain irregular and ineffective, limiting their impact on NCD prevention and management. Respondents suggest that the training should include lessons about nutrition, lifestyle changes importance of early diagnosis and the importance of health insurance coverage.

> *Mmh, maybe also health education in the in the facility general health education, not to uuh not to NCD clients alone but also the general population for address the same maybe the importance eeh early diagnosis so that the condition will be arrested early*

For patients a strategy was devised to have them in something akin to a support group which met on a regular basis. During these meetings a healthcare provider was sent to educate the group on health matters. The strategy did not work as expected though it was going to solve patient time of travelling long distance and also provide education. This can be a viable solution if all multi-faceted factors, such as patient beliefs, are addressed.

> *The….the strategy of maybe forming a group where patients can meet outside of the facility so that health education can be done , others can receive medication in most facilities hasn't happened . The turn up is very low.*

- **Supply of commodities**

  Respondents believe that ensuring the availability of drugs in a timely manner, laboratory commodities, and equipment at lower-level facilities is critical for the consistent management of non-communicable disease (NCD) patients. Equipping these facilities with the needed resources could provide them with the capacity for effective diagnosis, treatment, and management of NCDs within their systems, hence minimizing the need to travel to higher-level hospitals which are far away. It would enhance access to care, timely interventions, and continuity in the management of NCDs at the community level.

> *And also the government making sure that we have medicine at the primary health care facilities because it's a drawback when we get even, when you get a proper health worker and there is no medication. Then his work all his work is in futility because at the end you won't get any medication.*

The problem of drug and other day-to-day supplies is related to reorder levels that result in the shortage of some essential drugs. Drugs, and even other supplies and commodities, such

as batteries and glucose strips, are sometimes not available. Respondents said that inefficiency of the reordering processes may result in stock outs, therefore impacting on the availability of critical medications, supplies and commodities needed for patient care. Health facilities thus can minimize shortages by streamlining these processes and ensuring that access to essential medications is uninterrupted for patients.

> *Sometimes you get that you are in that facility you sometimes ah maybe screening tools ah they may lack simple things like batteries they go faulty you are not able to do what is expected sometimes even you you find the glucose level...the strips get ah they get out of stock they are not being replaced immediately and another challenge to me, the drugs, common drugs are still not available in the facilities for the patient. So you find that patients are not getting insulin, they are not getting metformin they have to go and buy and then the common ah the services or the lab services they lack imaging services they lack, yes and many others.*

- **Continuous training**

It is also vital to ensure that continuous training is available for health professionals, particularly on the management and investigation of NCDs. Continuous education and skills development were identified by the respondents in maintaining knowledgeable staff at the healthcare facility. According to the respondent, all cadres of staff need training on NCD management. The respondent associates the reduction of complications such as amputation and dialysis with trained staff who, in addition, impart the knowledge to their patients. This is the unified effort for better patient outcomes by all health workers, and this can be strengthened for success.

> *Measures that can be put to overcome these challenges eeeh, like they can supply for commodities on time and continuous training of staff or all healthcare providers, continuous training of all healthcare providers.*

- **Elaborate patient tracing and follow-up**

Defaulter tracing: The respondents report that community health promoters play a very important role in the management of NCDs by tracking and following up defaulters. CHPs can involve the community in identifying those who have stopped their treatment and encourage them to return for medication in health facilities.

> *The strategies, maybe uumh also, uuh with these community health promoters, they can also assist us in finding the defaulters in the community those who have been using the drugs and they are not using, they can make follow ups to ensure that those ones who are defaulted to come back for the medications.*

Respondents suggest that healthcare workers can call patients although this is challenging due airtime costs, language barrier and coherence of some patients who require caregiver to assist them communicate their needs.

Referrals: CHPs should not only follow up on defaulters (patients who have stopped treatment) but also assist in referring patients within the community to appropriate healthcare facilities when needed.

Follow-up: Respondents believe that follow-up (delivery of drugs) can be done at the participant's home or near the home of the participants. This was thought to provide solution to the follow-up problem but respondents report that it was not sustainable. The issue was patients needed investigation for reported sickness during the visits.

> *We have a strategy which was put in place I hope it should be last year…where patients have been mobilized and drugs taken to the villages (eeeer) but sustainability was a problem then number two when the health care providers take medications where the patients stay or near the patient majority have other complains that may need to be addressed by a health care worker or by a clinician or a physician.*

- **Continuous screening**

Early diagnosis is essential for NCDs. They reported that routine screening would be an effective way of early identification of the cases to intervene early and manage. The CHPs are playing a very vital role in taking blood pressure readings and blood sugar levels at the community level.

> *R-okay the other strategies that we have now days is CHBs who are now taking their blood pressures from community level …they are now taking (eerm) blood sugars from the community and at least that one is working and at least they are also being led and health education they are also being given from their background unlike in the past where they were to come to the facility first.*

- **Health financing**

Respondents revealed challenges associated with patient paying for services and treatment. Some health facilities have improvised ways such as revolving fund to ensure patients can access care with little success. This highlights the challenge the community members go through to access care, and it would benefit the community in having healthcare access. In relation to NCDs, health financing is an important aspect since these conditions require long-term care and continuous management.

Respondents highlight the difficulty of asking patients for co-pays for services at PHC facilities for NCD services at the primary health care facilities. The community generally expects healthcare services at PHC facilities to be free, in line with provision of other basic health services.

> *The other thing is the issue of commodity. We tried to involve the revolving fund pharmacy to bring down the prices of drugs and then secondly to offer those drugs to the dispensary level through the tackle system but what happened is the community resisted because the community is used to free services in the dispensary and health center levels.*

Respondent's accounts emphasize that health financing plays a pivotal role in making NCD care, accessible, affordable, and sustainable. Without adequate financing, efforts to prevent, diagnose, and manage NCDs are severely constrained.

> *So far...we have cried but mostly on our side we started the welfare we're and we are setting out, we are doing some contributions so that we have a fund where when a member id not having money can borrow from us and the re...*
>
> *...but this has not been so successful because most of the patients with hypertension and eh and diabetes are...are people who are old and most of them are out of employment and they don't have any income, so it's usually very hard.*

According to respondents, the National Health Insurance fund does not work in lower level health facilities. On the other hand, this level of facilities offers most of services free of charge. Respondents believe that the National Health Care Coverage program policy should incorporate other stakeholders to have a more inclusive system of coverage when NCD services are offered at lower level health facilities.

Overall, health financing for services offered at the PHC facilities need to be streamlined to ensure equality and clarity for patients. Currently, NHIF is not applicable at lower level facilities and while services for other basic illnesses are offered free of charge, care and medication for NCD often require payments. These inconsistencies can create confusion for patients, particularly those with chronic conditions requiring long-term care. This can influence choice of facility.

The national health care insurance program, should ensure that the program covers a broad range of services related to NCDs and ensure that medications are available for patients.

> *Hmmh, another comment I think it's just that is, it's just that the government just putting in place, the government should involve stakeholders in its National Health Care Program Policy eh because in most cases you find the government like I was asking as a...as a peer leader in the group, I was asking we have facilities that can cater for us but you will find that the NHIF can...cannot cover us in those facilities.*

It is believed that when patients are unable to finance their health needs such as getting drugs and other services related to their illnesses, they may drop off from care, hence the need to ensure that efficient health financing is available for patients with NCDs.

- **Resource allocation**

Respondents report that to effectively manage NCDs at the grassroots level, it is crucial for the national government to implement robust funding measures and ensure timely disbursement of funds to county governments. Respondents reported that the allocated fund should thereafter be managed well to ensure that patients who need medications can have them.

> *I think the best thing is for the national government to, to put in place proper funding measures, disburse funds on time to the county government and the county*

> *government to manage the funds properly so that we may get eh proper medication here at the grassroot level.*

Prioritization of resource allocation is paramount for effective NCD care. Respondents believe that the resources should be allocated based on current need. For example, as much as an ICU is an important resource within a facility, it would be more impactful to equip facilities with equipment that would cater to a larger number of NCD patients. A respondent mentioned that adding dialysis machines, for example, would help the large number of people who need them. Additionally, emphasis was placed on prioritizing screening equipment to reduce the number of NCD patients.

> *The counties haven't done so well like for example county up to this stage does not have can an ICU, does not have an Eco cardiogram machine. So and you know if you look at the number of NCD patients as per the number of malaria patients the NCDs have so many numbers. So why would you prioritize having an ICU, why why don't you prioritize having all kind of equipment that help prevent NCDs because those people who are dying nowadays are dying because of NCDs.*

- **Collaboration with stakeholders**

Respondents report that collaborations with other stakeholders such as private health facilities, Community-Based Organizations (CBOs,) and Non-Governmental Organizations (NGOs) can enhance benchmarking of best practices, which can be adopted to improve services.

> *I think another maybe to, collaboration we need to do collaboration with the private ah facilities or the CBOs ah NGOs in doing the collaboration, borrow from them what they are doing well and implement in our facility*

- **Technical working groups**

Respondents believe that establishing technical working groups at the county level would be an effective strategy for addressing NCDs. Since NCDs cover a broad range of conditions, such as mental health, diabetes, injuries, hypertension, and cancer, tackling them on a disease-by-disease basis can be overwhelming. Technical working groups due to their nature, would have more specialized focus for each condition.

- **Strengthening the reverse referral system**

Respondents indicated that the current referral system has challenges. Such challenges include patient preference for higher level facility and drug stock outs. Both challenges are significant. Respondents report that, though rather slowly, the current strategy will ensure that essential drugs are in stock and patients are encouraged to seek services from the nearer PHC facilities.

- **Research and development**

Respondents propose that there is need for more research to iron out gray areas on NCDs that have not been well understood.

4. Final Policy Analysis Using Bardach Approach

4.1 Definition of the Problem

The Kenya Health Policy 2014-2030 acknowledges the rising burden of Non-Communicable Diseases (NCDs) and their impact on public health, especially at the primary healthcare (PHC) level. Despite this, NCD care remains under-resourced and poorly integrated into the PHC system. Challenges include inadequate training, insufficient resources, fragmented policy implementation, and the lack of a robust monitoring and evaluation framework.

4.2. Assembly of the Evidence

Stakeholder Interviews and Policy Documents (Kenya Health Policy, UHC Roadmap, etc.) reveal:

- A lack of adequate NCD training for healthcare workers at PHC.
- Poor infrastructure and stock-outs in public health facilities.
- Delayed integration of NCD care into the broader healthcare delivery system.
- Limited funding and political will at the county level, impacting policy implementation.

4.3 Construction of Alternatives

- Alternative 1: Strengthen NCD training and capacity building for healthcare workers across the country.
    - Pros: Improved service delivery, better diagnosis, and management of NCDs.
    - Cons: High costs for training and resource allocation; county governments may lack capacity to implement effectively.
- Alternative 2: Strengthen the integration of NCDs into PHC by creating a dedicated NCD policy and framework at the county level.
    - Pros: A targeted approach that addresses local needs, enhanced collaboration between counties and the national government.
    - Cons: Potential lack of funding or political will at the county level; requires substantial coordination across levels of government.
- Alternative 3: Encourage private-public partnerships (PPPs) for NCD care by involving private facilities, pharmaceutical companies, and insurance providers.
    - Pros: More resources, innovative solutions, and access to medications.
    - Cons: Risks of market-driven care leading to inequalities, and inconsistent quality of services.

4.4 Selection of the Criteria for Decision and project Outcomes

Table 5: Policy Decision Criteria and Outcomes

Alternative	Feasibility	Cost-effectiveness	Health Equity	Sustainability	Projected Outcome
Strengthen NCD training for healthcare workers	Feasible but resource-intensive, requiring investment in curriculum development, trainers, and logistics. County-level buy-in and continuous education are required.	Costly initially but may reduce long-term costs by improving service delivery and reducing NCD-related complications.	Strengthens health equity by upskilling workers in all areas, making NCD care available at the grassroots level, especially for underserved populations.	Requires continuous funding, but the benefits could be sustained through long-term training programs and partnerships.	Improved NCD management and better healthcare worker competence, leading to reduced morbidity and mortality rates.
Integrate NCDs into PHC with county-specific frameworks	Complex to implement due to variations in county resources and infrastructure. Requires alignment across county governments, healthcare facilities, and training systems.	High initial costs to overhaul infrastructure but could be offset by improved access and reduction in NCD burden.	Could improve equity by tailoring interventions to county needs, but disparities in resources between counties might widen the gap if not managed properly.	Integration would require ongoing funding, monitoring, and policy enforcement to sustain success.	Increased access to NCD care at the primary healthcare level, with potential challenges in ensuring equitable distribution of resources.
Foster Private-Public Partnerships (PPPs)	Feasible in urban centers but may face resistance in rural areas. Requires careful regulation and clear policies to ensure alignment with public health goals.	Initially cost-effective as PPPs can attract investment but may create long-term costs if partnerships are not managed well.	Risks widening inequality if private entities prioritize profit, especially in underserved regions. Poorer populations may lack access to the services provided by private partners.	Short-term gains from private sector investment, but long-term sustainability is uncertain without strong regulations to ensure equity in service delivery.	Potentially increased healthcare access due to private sector involvement, but may create disparities in care based on profit motives.

4.5 Confronting the Trade-offs

- Alternative 1 vs Alternative 2: Training healthcare workers is more feasible in the short term but may not solve systemic issues like underfunding and inadequate infrastructure, whereas county-level integration directly addresses these issues but requires political will and substantial resources.
- Alternative 2 vs Alternative 3: A PPP model may provide financial and technological resources but could shift focus from public health goals to profit-driven motives, possibly undermining equity.

4.6 Decision making

Alternative 2 offers the most sustainable solution. It addresses the root causes of weak NCD care by emphasizing systemic changes at the county level. However, this must be paired with healthcare worker training (Alternative 1) to ensure that human resources are capable of managing NCDs effectively.

4.7 Implementation Plan

- Step 1: Develop a detailed NCD management policy at the county level, ensuring alignment with the national health policy and UHC goals.
- Step 2: Allocate funding and resources for capacity building, ensuring that healthcare workers are trained in NCD management and prevention.
- Step 3: Implement a monitoring and evaluation framework to track the progress of NCD integration and training efforts.
- Step 4: Advocate for PPP models that can supplement public health efforts, but ensure that these partnerships align with equity goals.

4.8 Evaluation Criteria for Implementation

- **Success will be measured by:**
    - Increased NCD training completion rates.
    - Reduced NCD-related morbidity at the PHC level.
    - Improved healthcare worker satisfaction.
    - Improved public access to essential NCD medications.
    - Monitoring progress through regular assessments of health system outcomes, with a focus on health equity and access to care.

5. Policy Recommendations for Improving NCD care in Kenya

- **Integrated NCD Prevention and Control Strategy**
    - Policy Integration: Embed NCD prevention and management into existing health policies, emphasizing a holistic approach that includes lifestyle changes, mental health, and nutrition.
    - Multi-Sectoral Collaboration: Engage sectors beyond health, such as education, agriculture, and urban planning, to address social determinants of health that contribute to NCDs.
- **Community Engagement and Education**
    - Public Awareness Campaigns: Launch comprehensive awareness programs focused on lifestyle modifications, risk factors, and the importance of early diagnosis, utilizing various media platforms to reach diverse populations.
    - Community-Based Health Programs: Promote community health initiatives led by trained community health workers to educate and empower residents regarding NCDs and encourage regular health screenings.
- **Strengthening Healthcare Infrastructure**
    - Resource Allocation: Increase budget allocations for lower-level health facilities, ensuring they are well-equipped with essential medications, diagnostic tools, and trained personnel.
    - Accessibility Improvements: Enhance the accessibility of healthcare facilities, especially in rural areas, by improving transport links and offering mobile health services.

- **Training and Capacity Building**
  - Continuous Professional Development: Establish mandatory, ongoing training programs for healthcare providers on NCD management to ensure they remain current with best practices and treatment protocols.
  - Peer Learning Networks: Foster peer learning among healthcare workers to share experiences, challenges, and solutions in managing NCDs.
- **Revamping Health Financing Mechanisms**
  - Comprehensive Health Insurance: Reform the National Health Insurance Fund (NHIF) to cover a wider range of NCD services and medications, ensuring affordability for all patients.
  - Innovative Financing Solutions: Explore community-based health financing models, such as cooperative health funds or micro-insurance, to alleviate financial burdens on patients.
- **Strengthening Referral Systems**
  - Efficient Referral Pathways: Develop clear and efficient referral guidelines to ensure patients are smoothly transitioned between different levels of care, with follow-up mechanisms in place to track patient outcomes.
  - Patient Education on Referrals: Educate patients on the importance of adhering to referral recommendations and the services available at lower-level facilities.
- **Data-Driven Policy Making**
  - NCD Surveillance and Research: Invest in robust data collection and surveillance systems to monitor NCD prevalence, risk factors, and treatment outcomes, using the data to inform policy decisions and resource allocation.
  - Community-Based Research: Encourage research on local community needs and perceptions regarding NCDs, ensuring policies are grounded in the realities of the populations they serve.
- **Emphasizing Multidisciplinary Approaches**
  - Multi-Disciplinary Care Teams: Promote the establishment of multidisciplinary teams for NCD management, incorporating doctors, nurses, nutritionists, and mental health professionals to address the multifaceted nature of NCDs.
  - Integration of Traditional and Modern Medicine: Acknowledge and integrate traditional medicine practices within the formal healthcare system to enhance treatment acceptance and adherence among patients.
- **Policy Monitoring and Evaluation**
  - Establish Performance Metrics: Create specific, measurable indicators to assess the effectiveness of NCD policies and programs, ensuring accountability at all levels.
  - Regular Policy Reviews: Conduct periodic reviews of NCD policies to identify gaps, successes, and areas for improvement, adapting strategies to changing health dynamics.

5.1 Prioritization Matrix for Policy Alternatives

After evaluating the current state of NCD care in Kenya, I assessed various policy alternatives to improve care at the primary healthcare (PHC) level. To guide decision-making and prioritize actionable solutions, I applied a Prioritization Matrix, which evaluates each alternative based on its feasibility and impact. The matrix below presents the results of this analysis:

Table 6: Policy Alternatives Prioritization Matrix

Policy Alternatives	Feasibility (1–5)	Impact (1–5)	Total Score (Feasibility × Impact)	Comments
Strengthen NCD training for healthcare workers	4	5	20	**High impact** in terms of improving service delivery and patient outcomes. Training healthcare workers will directly enhance their ability to manage NCDs effectively. Feasible but requires significant investment.
Integrate NCDs into PHC with county-specific frameworks	3	5	15	**High impact** through tailored approaches for each county. The feasibility is lower due to the complexity of aligning resources and governance structures across counties.
Encourage public-private partnerships (PPPs) for NCD care	4	4	16	**Moderate to high impact**, leveraging private sector resources and innovations. Feasible in urban areas but may face challenges in rural areas where private sector involvement is limited.
Improve supply chain management for NCD medications	5	4	20	**High feasibility** as it mainly requires enhancing current infrastructure. **Moderate impact** in addressing stock-outs and ensuring access to medications.
Increase community outreach and	4	4	16	**Moderate feasibility** due to funding constraints, but **high impact** on public awareness,

education programs				early diagnosis, and prevention.
Implement a dedicated NCD policy at the county level	3	4	12	**Moderate feasibility** given the need for political will and funding at the county level. **High impact** by ensuring a more localized and tailored approach to NCD care.

Key:

- **Feasibility (1–5):** This reflects how easy it is to implement the policy alternative based on factors such as resource availability, political will, and existing infrastructure. A score of 1 represents very low feasibility, while a score of 5 represents high feasibility.
- **Impact (1–5):** This assesses the potential effect of the policy on improving NCD care at PHC. A score of 1 means minimal impact, while 5 indicates a transformative effect on service delivery and health outcomes.
- **Total Score:** The total score is obtained by multiplying the feasibility and impact scores. The higher the score, the more desirable the policy alternative is.

5.2 Interpretation of the matrix Score

1. The **"Strengthen NCD training for healthcare workers"** and **"Improve supply chain management for NCD medications"** alternatives both scored highly (20 points), indicating they are both feasible and impactful. These alternatives should be prioritized.
2. **"Integrate NCDs into PHC with county-specific frameworks"** and **"Encourage public-private partnerships (PPPs)"** scored moderately well (15–16 points), but they are less feasible due to implementation challenges, particularly in rural areas or with regard to coordination between public and private sectors.
3. **"Increase community outreach and education programs"** and **"Implement a dedicated NCD policy at the county level"** scored somewhat lower due to feasibility challenges, such as funding and political support. However, they still hold substantial potential for long-term positive impact.

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