2017

NATIONAL DIABETES PROGRAM END TERM EVALUATION REPORT

Faustine Njau
UNITED REPUBLIC OF TANZANIA

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1. ABBREVIATIONS

AIDS	Acquired Immunodeficiency Diseases Syndrome
APHFTA	Association of Private Health Facilities in Tanzania
CCHP	Comprehensive Council Health Plan
CHMT	Council Health Management Team
CHOPs	Comprehensive Hospital Operational Plans
CHW	Community Health Worker
CMO	Chief Medical Officer
DC	District Council
DCS	Director of Curative Services
DHIS	District Health Information System
DHO	District Health Officer
DM	Diabetes Mellitus
DMO	District Medical Officer
DPP	Director of Policy and Planning
HCP	Health Care Providers
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HT	Hypertension
HTN	Hypertension
KCMC	Kilimanjaro Christian Medical Center
KII	Key informant interview
LGA	Local Government Authority
MNH	Muhimbili National Hospital
MoHCDGEC	Ministry of Health Community Development, Gender, Elderly and Children
MOI	Medical Officer In charge
MOI	Muhimbili Orthopaedic Institute
MTUHA	Mfumo wa Taarifa za Huduma za Afya
NACP	National Aids Control Program
NCD	Non-Communicable Diseases
NDP	National Diabetes Program
PATH	Program for Appropriate Technology in Health
PORALG	President's Office, Regional Administration and Local Authorities
PS	Permanent Secretary
RCH	Reproductive Child Health
RHMT	Regional Health Management Teams
RHO	Regional Health Officer
RMO	Regional Medical Officer
SDGs	Sustainable Development Goals
SNHI	Single National Health Insurance
TANCDA	Tanzania Non Communicable Diseases Alliance
TB/HIV	Tuberculosis/Human Immunodeficiency Virus
TDA	Tanzania Diabetes Association
USAID	United States Agency for International Development
WDF	World Diabetes Foundation
WHO	World Health Organisation

2. EXECUTIVE SUMMARY

Non-communicable diseases are progressively assuming the leading role in morbidity and mortality in the world. Recent data suggest that out of 56 million deaths, 64% or 36 million are caused by this cluster of diseases of which two thirds or 28 million deaths occurs in lower and middle income countries alone. The drivers for non-communicable diseases such as increasing life expectancy; changes in life styles, and environmental pollution have resulted in increased burden of non-communicable diseases.

Globally, the burden due to diabetes has been on the increase. It has been estimated that by year 2014 alone there were 382 million people living with diabetes worldwide with almost half of them undiagnosed. It is also estimated that the number will have reached 592 million people by year 2035, an increase of about 53% of current cases. The estimated global healthcare expenditure to treat diabetes and prevent complications totalled at least US Dollars (USD) 465 billion in 2011 and this figure is expected to increase to over USD 595 billion by year 2030. Most people with diabetes or around 80% live in the economically less developed regions, which also includes Tanzania where 78% of people living with diabetes are undiagnosed.

Although there are few literatures specific to Tanzania, available evidence shows that, the burden is high, and risk factors are almost as high and some are even higher than in countries with similar economy and culture. While there is evidence of high NCD incidence and prevalence, health care systems and the population in general lack capacity to address this raising challenge. In 2008 the Ministry of Health developed and launched a five Year National Non-Communicable Diseases Strategic Plan 2009/2010 – 2014/2015, which was later superseded by a more comprehensive National NCD Strategic plan 2015/2016 – 2020/2021 which incorporated results from STEPs Survey of 2012 and took into consideration WHO global action plan and various guidelines and policy documents developed under Health Sector Strategic Plan IV (HSSP IV), Big Results Now (BRN) and Sustainable Development Goals (SDGs).

In 2012, Tanzania received a generous support from the World Diabetes Foundation (WDF) to operationalize the National NCD program with overall goal of reducing the mortality and morbidity due to diabetes and other noncommunicable diseases in Tanzania through development of holistic and cost effective model for strengthening the quality of diabetes/NCD care and its complications. Through this initiative the capacity of the health care system (Zonal, Regional and District hospitals) were greatly bolstered through provision of essential training program on the management of NCDs, provision of essential tools and equipment and raised public awareness on diabetes/NCDs, its risk factors and prevention. The general objective being increasing the health system capacity to prevent, detect and manage diabetes and its complications and other non-communicable diseases by establishing comprehensive system of care all over the country.

The program specific objectives were to:

SO. 1 Strengthening the capacity for care at district, regional and referral hospitals through training and provision of essential tools and material to enable early diagnosis and appropriate treatment.

SO.2 Integration with other programs of chronic care through development of specific training curriculum for NCD care and treatment in other diseases programs

SO.3 Establishing and strengthen the referral systems

SO.4 Link with communities, and use the platform for NCD awareness creation

SO.5 Strengthening the surveillance and the monitoring system for non-communicable diseases by leverage the existing HMIS

SO.6 Strengthening the NCD Section of the Ministry of Health in coordination and supervision of the NCD care, supporting advocacy and influencing of policies, support for increased funding for NCDs and sector wide engagement

National Diabetes Program

The National Diabetes Program was coordinated through the Ministry of Health under the NCD section and was directly placed under the National NCD steering committee. The implementation of the program activities took place under Tanzania Diabetes Association in collaboration with the project implementation committee.

The rollout of NDP program was made to utilize the already existing health infrastructure to bring out comprehensive diabetes & other NCD services to the primary, secondary and tertiary levels of care while also introducing; nutrition & counseling in the clinics, foot examination, eye screening component and establish linkages with the Reproductive & Child Health clinics to target gestational diabetes. Public private partnerships with (FBOs, Private, and other health care providers) together with appropriate and effective referral system were put in place. Community involvement was strengthened through creation of awareness and education session on prevention and control of NCD risk factors. This led to an increase in demand for NCD care and services in the country.

Evaluation design

The overall aim of this evaluation was to inform the implementer on the project performance and specifically establish the veracity of project achievements on the set strategic objectives (Verification of performance by strategic objective), to determine project efficiency, effectiveness and independent attribution. It covers the period from the beginning of April 2012 to May 2017.

Evaluation assumption and logic were based on theory of change using various assumptions built in the model to anticipate the attainment of the stipulated goals and objectives. Assessment of goals were achieved through two main pathways such as increased quantity of quality care through training of health care providers coupled with provision of clinic space, tools/equipment and utilities; and increased demand and use; through client/consumer behavior change. Assessment on NCD unit formulation at the Ministry of Health was done via verification on adaptation of policies for NCDs, Increased NCD visibility through data and advocacy and creation of enabling environment.

The evaluation team was composed of a senior public health specialist who was also a team leader, evaluation specialist, and a group of experienced research assistants.

The evaluation used various methods depending on each objective and parameter of evaluation. Mixed methods were a preferred choice, to enable triangulation, and contextualization of project performance. The evaluation utilized primary data collected through key informant interviews, and analysis of secondary data reported by health facilities in District Health Information System II.

Limitations included limited time to conduct the evaluation and develop a report, and lack of primary program data, baseline data and appropriate comparison groups.

Evaluation findings, conclusions and recommendations

NDP Implementation

The implementation of National Diabetes Program had a high success rate for all targeted objectives except objective number 5, whereby HIMS leverage was very low.

2,548 health care providers were trained in all seven, health zones compared to the initial set target to train 1,777 health care providers. This translates to a success rate of 143%. The additional numbers of health care providers trained reflect the new additional districts and regions as a result of the reorganisation of internal administrative structures in Tanzania.

NCD starter kits (equipment and materials) were distributed to 135 hospitals against a target of 105 hospitals located at the zonal, regional and district levels, representing a 128% success rate.

The program implementation has been very strong as evidenced by strong support and buy in at all levels. Inauguration of the second NCD Strategic and Action Plan 2015/2016 – 2020/2021 together with the appointment of NCD coordinators at the regional level and also active engagement of the private partners (Insurance companies and banks) is a testimony to the program achievements.

"Challenges that were observed during the implementation of this program. The NDP team had not been robust enough to cover all targeted regions. This is evidenced by inability to carryout field supportive supervisions to all targeted regions, longer and bureaucratic procurement systems had delayed the procurement and supply of eye and foot equipment for the zonal referral hospitals. High staff attrition rates resulted into staff not trained on diabetes management working in diabetes clinic."

Relevancy

However NDP implementation has been a direct interpretation and translation of the SDG 3.4 into Tanzanian context. SDG 3 calls for increased access; NDP addressed this by establishing and strengthening of NCD care clinics countrywide, with expectant increase in access to quality NCD care. Support of juvenile diabetes care, diabetes in pregnancy and diabetes in general enabled people of all ages to access these important services.

Implementation of this program is the first systematic national response towards NCD control and as a result there is now a very strong visibility of NCD in the country as supported by the launching and championing of National NCD Strategic and Action Plan 2015/2016 – 2020/2021 by high level government leaders that included The Vice President of the United Republic of Tanzania, Her Excellency, Mama Samia Suluhu Hassan, Hon. Minister for Health, Ummy Mwalimu and Deputy Minister for Health, Hon. Dr. Hamisi Kigwangalla.

There is an increased awareness and understanding of NCDs and the importance of prompt response to this burden across all levels. Managers at all levels understood and were accountable for the NCD response. Also there is a tangible evidence for incorporation of NCD activities and interventions in health plans (CHOPs and CCHPs). Key players and stakeholders

"NCD response requires significant investment. Much remain desired in financing NCD response from country own resources and from development partners.

Integration and leverage of existing financing mechanisms is yet to be realized, as a result NCD remains to be a minimally funded area as compared to other disease blocks.

Sector wide response for NCD is still at its infancy; Governance and management of NCD services is sector-wide and thus challenging to coordinate"

in the health sector are already interested and contributing/financing the NCD response. Involvement of the National Health Insurance, and other private sector actors supporting provision of health education, screening and supporting quality and appropriate NCD care is seen.

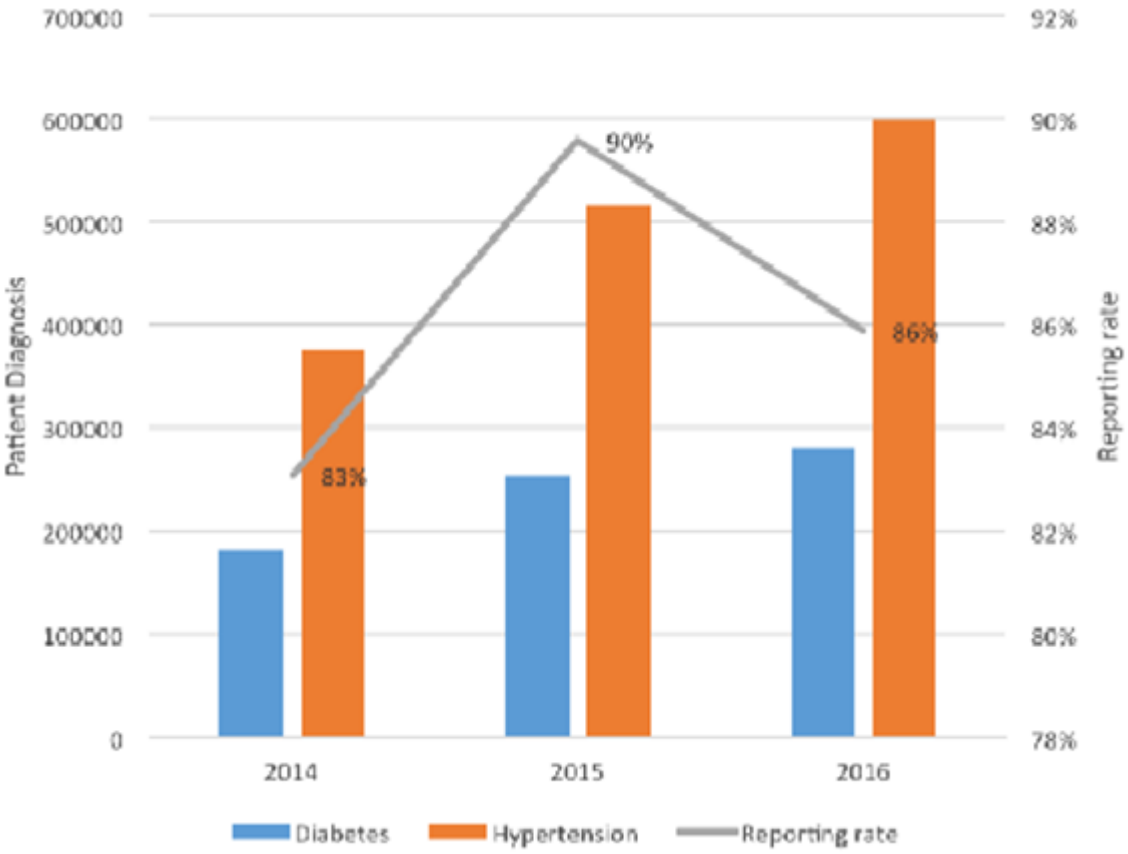
Efficiency

Routinely collected data reported through the Health Management Information System (HMIS, DHIS2) were used to assess the number of people reached with NCD services using diabetes and hypertension as proxy indicators. As shown in Figure1, the attendances for both conditions markedly increased between 2014 and 2016.

Increased diagnosis and care for NCD is alluded to special focus placed on NCDs. All visited health facilities had dedicated days in a week where NCD care (Diabetes and cardiovascular diseases clinics) were provided. There were also dedicated clinic space with equipment and staff trained on provision of NCD care.

These findings were congruent with monitoring report, and midterm evaluation report.

Figure 1: NCD Diagnosis and Reporting Rates: HMIS 2014-2016



Eighty-five percent (85%) of staff were trained on Diabetes screening and classification, and about 60% were trained on management of hypertension. (NDP- Monitoring report, 2015).

70 - 75% of health facilities had either dedicated space for Diabetes and hypertension or a dedicated clinic day(s) (NDP Midterm evaluation report, 2016)

Effectiveness and Impact

Number of all patients diagnosed with NCDs as reported through the HMIS from all zones using diabetes and hypertension as proxy indicators has shown on average there were 526 more patients per district per month in districts where NDP was implemented, as compared to districts where NDP has not yet been implemented. Likewise the project effect on Hypertension was on average 1224 more patients per district per month in NDP districts as compared to others.

The project effect was found to be statistically significant (P-values are <0.05). In summary, the NDP was observed to increase access to Diabetes and Hypertension care.

Sustainability

The program has succeeded to make NCD a formal agenda within the existing health care system in that:

- NCDs have been placed at the Vice president's office and recently we have witnessed the launch of the NCD Action plan for 2015/2016 – 2020/2021.
- At the national level, NCDs are being coordinated through a network of NCDs coordinators at all levels.
    - NCDs are incorporated in their CCHPs and CHOPs such that during planning and budgeting, NCDs-related activities will also be considered for funding. All these activities highlight the program's impact and ensure its sustainability.
    - NCDs are currently financed through NHIF, CHF as well as other insurance schemes
- The use of continuous medical education (CME) during clinical meetings and different avenues as part of capacity building for NCDs also contributes to the sustainable form of NCD training.
- Sensitization for Corporate Social Responsibility (CSR) to support key sustainable activities and provide more support to patients have effectively worked out well with more funding observed for NCD activities at all levels.
- Patients associations and support are being initiated
    - This enable patients to support each other, request for more services and support from the community and CSR including voicing their concerns when services are not up to the mark

The presence of National Costed NCD Action Plan, that shows long term targets and what resources are needed to get there ensures incorporation of NCD activities in comprehensive plans at hospital and council levels, adaptation of alternative low cost capacity building strategies, such as on job training and continuing medical education, engagement of other partners and stakeholders for co-financing, e.g. NHIF, CHF and other private health insurance schemes.

Challenges:

"Blanket exemption means that some who can afford care and are covered in health financing schemes will still receive free care.

This strategy may not work well due to limited funding for NCDs and less support from donor"

The process of establishing Single National Health Insurance (SNHI) will support NCDs through the universal coverage concept and the anticipation is when the scheme is fully

operational it will lead to more NCD care being made available to majority of the population.

Also the formation and strengthening of patients associations will ensure the availability of more resources for NCDs including medicines, equipment, education and mutual support.

Overall Conclusion

Based on the findings, also taking into account methodological strength and limitations in this evaluation, the team concluded that NDP achieved and exceeded the set expectations based on the objectives and evaluation questions mandated in this evaluation.

Conclusion based on specific objectives

- ✓ **Relevance:** The NDP addressed the sustainable development goal 3.4., and through its implementation, translated the national Health Sector Strategic Plan IV 2015-2020, and the national NCD plan into actual implementation.
- ✓ **Efficiency**: NDP was implemented reaching almost all targets on time. Investment in training of health care professionals and equipping health facilities is likely to have long term sustained gains and positive spill over to overall quality of health care.
- ✓ **Effectiveness and Impact**: There is a weak to moderate evidence of program effectiveness on direct increase in NCD care. Data used to measure this effectiveness is secondary HMIS – DHIS that is potentially weak. However, use of this non-NDP data to verify effectiveness increases authenticity of achieved effectiveness.
- ✓ **Sustainability**: NDP has managed to build ownership and accountability at all levels, while at national level the Vice President of the United Republic of Tanzania champions and spearhead the national NCD 2016 – 2020 strategic plan and NCD response. At regional, councils and hospital levels, NCD interventions are strongly advocated for by the PORALG, and are incorporated and integrated in their plans. Funding for NCD remains gloomy; this threatens sustenance of current and future gains in the NCD block of diseases.

NDP managed to achieve its set goal on specific objective 1 and 2 by more than 90% in strengthening capacity for provision of NCD care. However, with all this success rate there have been some downsides as well; trained staff attrition rates have been observed to be very high in some places thereby affecting the quality of NCD care by having health care providers not trained in the management of NCDs running the services at the clinic. There is also no evidence of change in pre- or in-service health training curricula nor actual integration of NCD care in HIV/AIDS, TB and Leprosy clinics.

NDP managed to strengthen existing referral system partly by achieving objective 1,2 and 4. Capacity of health care providers in health facilities and in the community were built to enable them to correctly identify, manage and refer patients to higher levels when needed, though there was no specific data on referrals to objectively measure this.

The program managed to establish links with communities through training of community health workers (CHWs) as specified in objective 4, by linking health centres and communities. 481 community health workers were trained equivalent to 179% of target in the set objective. These were clinicians/nurses at Health Centres. The real community health

workers now being trained two per village - were not in place, hence the program management decided to train the community facility workers in preparation of the next move of training CHW when they are deployed. However, their curriculum and job description includes NCDs, thanks to NDP been very visionary to build the bridges up front.

However, due to lack of sufficient data little is known on the effect of this objective on demand creation, awareness and behaviour change at population level.

Institutionally, the program managed to elevate NCDs and establish the NCD unit within the structures of Ministry of Health, which culminated to the development of the National NCD Strategic and Action Plan 2015/2016 – 2020/2021. The NCD unit is appropriately staffed with Assistant Director NCDs as the head of the unit and other eight well skilled professional staff and other support staff to manage the NCD program.

All the above-targeted objectives were successfully accomplished during the program implementation except only for specific objective 5, which had not been accomplished within the set time frame of program implementation.

General recommendations

Due to high level of success observed in the implementation of NDP, the evaluation team strongly support continuation of implementation of the program with the following recommendations:

Funding for NCDs should be increased to match demand for care and prevention especially for population that cannot afford care, or cannot travel far to access care. This could be achieved by creative funding, e.g. ***Expanding AIDS trust fund to include chronic diseases, increasing insurance cover for all people through pre-financing insurance premiums (NHIF, CHF, TIKA) by the local governments.***

There should be also an increase in scope of implementation to involve lower levels of health facilities especially management of uncomplicated NCD cases at health centre levels, thus alleviating patient's opportunity cost related to access to care in higher and specialized health facilities, which are also prohibitive for poor beneficiaries.

More NCD prevention activities should be implemented and monitored. Such as establishment of physical exercise culture in work places, schools, communities and even at household level.

There should be robust data for NCDs. The existing health management information system should be strengthened to address this need.

There is a need to build a team of supervisors at regional level to provide supervisory and mentoring role to the districts and its facilities and increase supervision coverage and improve prompt response and troubleshooting as NCD programs takes hold. Also the central supportive supervision should be strengthened and the program should brace itself to do supervision monitoring visits.

Recommendations by objectives

For Specific objective 1; the NDP should assess the extent of trained staff attrition, equipment versatility, and availability of kits and develop mitigating strategies to project gains in the current project.

In objective 2; the valuation did not find integration of NCD care in other chronic care clinics, e.g. HIV/AIDS, TB and Leprosy. Further investigation is warranted to understand why this did not occur and formulate strategies for meaningful integration of services over and above curricular and training integration. Centralized triaging or screening for diabetes at

specialized clinics should be considered for future implementation this will ensure capturing of more patients with diabetes comorbidities who otherwise would have been missed. Also an intervention strategy needs to be in place for detecting pregnant women with diabetes as early as possible and initiate treatment so that their blood sugar levels become normal, that way we can reduce the risk of adverse pregnancy outcomes. In addition, because of their increased risk of developing type 2, diabetes later in life, women with pregnancy related diabetes are an ideal group for primary prevention of type 2 diabetes hence strategies need to be in place to scale up the component of prevention of diabetes in pregnancy and health promotion especially nutritional aspects of pregnant women at our health facilities.

Although the evaluation was able to document some level of referral strengthening for objective 3, there has been poor documentation of how the NCDs referral system works. There is a need for further investigation to know how the capacity strengthening of NCD clinics and communities have strengthened the referral systems. Data on successfully referrals need to be routinely captured and reported.

For specific objective 4, there was some evidence of increased demand and referral from communities as a result of community engagement. However there was no data to measure how many patients in care are actually referred from communities or lower health care levels. Data systems should be strengthened to also measure successful referrals of patients.

In specific objective 5, there was no evidence of integration or strengthening of existing HMIS to adequately capture NCD data for monitoring and surveillance. NDP should make this a priority before program closure or in the subsequent cycles of the program. The future strategic direction should include; Data recording and capture in terms of number of patients in care, newly diagnosed and those already registered in clinics and. well controlled. The data should be disaggregated to basic complications, referred, lost to follow up and include other parameters as may deem necessary. The data intervals may consider aligning with reporting requirement; half yearly/quarterly as in DOTS/HIV program. This will provide basis for robust program evaluation, quality as well as support to the supply logistics. Specific objective 6 had shown evidence of strengthened NCD unit and also more integration into the departments of preventive services and others. NCDs are Multisectoral, and have been elevated to Prime Minister’s Office (PMO’s) for coordination into other sectors. The linkages with the regions and districts and coordination need to be strengthened.

3. CHAPTER 1: INTRODUCTION

3.1 INTRODUCTION

Non communicable diseases are progressively becoming the leading cause of morbidity and mortality: currently NCD causes more deaths (36 million out of 56 million deaths from all causes) than all other causes combined, two third (28 million) in lower and middle income countries.(1) This is partly attributed to increase in life expectancy, but also changes in life style.(2) Although there are few literatures specific to Tanzania, available evidence shows that, the burden is high, and risk factors are almost as high and some are even higher than in countries with similar economy, and culture.(3) While there is evidence of high NCD incidence and prevalence, health care systems and the population in general lack capacity to address this increasing challenge.(3-5)

To address this impending disaster, in 2008 the Ministry of Health developed and launched a five Year National Non-Communicable Diseases Strategic Plan 2009/2010 – 2014/2015, which was later superseded by a more comprehensive National NCD Strategic plan 2015/2016 – 2020/2021 which incorporated results from STEPs Survey of 2012 and took into consideration WHO global action plan and various guidelines and policy documents developed under Health Sector Strategic Plan IV (HSSP IV), Big Results Now (BRN) and Sustainable Development Goals (SDGs).(6)

In year 2012, Tanzania received generous support from the World Diabetes Foundation (WDF) to operationalize the strategy. Under the WDF support the Ministry of Health and Tanzania Diabetes Association (TDA) laid down the following goal and objectives to be achieved by the end 2016:

Overall Goal: To reduce the morbidity and mortality of people with diabetes in Tanzania by developing a holistic and cost-effective model for strengthening the quality of diabetes care & its complications at all the District, Regional and Referral Hospitals in the country (mainland) and raising public awareness of diabetes, its risk factors and ways of prevention.

General objective: To increase the health system capacity to prevent, detect and manage diabetes and its complications and other non-communicable diseases by establishing comprehensive system of care all over the country.

Specific objectives (SO):

SO 1: Strengthening capacity for care at district, regional and referral hospitals through training and provision of essential tools and material to enable early diagnosis and appropriate treatment.

SO 2: Inclusion of specific training program on diabetes eye diseases, diabetic foot, gestational diabetes, nutrition, other non-communicable diseases (hypertension, stroke) and metabolic complications in patients with HIV/AIDS.

SO 3: Establishing an effective referral system (where non existing) and strengthening the existing referral system so as to ensure that health care personnel at each level knows where to refer patients to the next level to decrease the level of serious/fatal complications.

SO 4: Establishing linkages with the community vide community health workers and initiating community sensitization programmes.

SO 5: Strengthening the surveillance and the monitoring system for non-communicable diseases within the existing Health Management Information System (MTUHA) for the

purpose of disease surveillance, health status monitoring and health sector planning and policy-making.

SO 6: Strengthening the NCD Section of the Ministry of Health and Social Welfare to undertake the role as overall coordinator and supervisor of the implementation of the National Strategy for non-communicable diseases and to establish partnerships to mainstream NCD activities into all relevant sectors and intervention areas through coordinated effort lead by the Ministry of Health and Social Welfare.

3.2 PURPOSE OF THE EVALUATION

3.2.1 Objectives of the Evaluation

The overall aim of this evaluation is to inform the implementer on the project performance.

Specifically,

1. To verify project achievements of the set strategic objectives
2. To determine project efficiency and effectiveness

3.2.2 Evaluation Questions

The evaluation team responded to the above objectives by answering the following evaluation questions:

Relevance

- To what extent did the project support achievement towards the SDGs
- To what extent did the project bring about the desired changes in the health system?
- To what extent did the project reach the targeted population?
- How well did the project respond to the needs of targeted beneficiaries, including how these needs evolved over time?

Effectiveness

- To what extents are results that are reported a fair and accurate record of achievement?
- To what extent has the project delivered results that are value for money? To include but not limited to:
    - How well the project applied value for money principles of effectiveness, economy, efficiency in relation to delivery of its outcome;
    - What has happened because of project funding that wouldn't have otherwise happened; and
- To what extent has the project used learning to improve delivery?
- What are the key drivers and barriers affecting the delivery of results for the project taking into consideration all the project assumptions

Efficiency

- To what extent did the project deliver results on time and on budget against agreed plans?
- To what extent did the project understand cost drivers and manage these in relation to performance requirements?

Sustainability

- To what extent has the project leveraged additional resources (financial and in-kind) from other sources?
- What effect has this had on the scale, delivery or sustainability of activities?
- To what extent is there evidence that the benefits delivered by the project will be sustained after the project ends?

Impact

- To what extent and how has the project built capacity of the health system?
- How many health care providers have received training from the project that otherwise would not have received training?
- How many health facilities have received equipment and tools from the project that otherwise would not have received?
- To what extent has the knowledge on diabetes/NCDs affected people's life by incorporating lifestyles changes?
- To what extent and how has the project affected people in ways that were not originally intended?

Learning

What are the lessons learnt from the project implementation in terms of

- Innovative approaches/strategies adopted – e.g. localized capacity building for health care providers, NCD competencies at the regional and district levels.
- Reducing knowledge gap in the community
- Good practices that can be up-scaled and replicated

Over and above the questions in the ToRs, our evaluation team have answered the following additional questions:

1. What is the influence of NDP on NCD Policy by and the policy outputs such as strategic planning and budgeting?
2. What are NDP's Health System improvements for NCD Management?
    a. Health financing - Linkage with National Health Insurance Fund (NHIF) acceptance to prioritize and pay for NCDs (Diabetes) treatment and inputs as per NDP objectives and activities
    b. Information: positioning indicators for Diabetes Programme & NCDs in MTUHA

c. Medicine, specialised equipment, reagents and appropriate Technology including ; supply logistics for NCDs and supporting updating the National Essential Medicines list (NEDLIST) – to include Diabetes & NCD needs down to dispensary levels (Services). There is a need of the diabetes program to repackage NCD medicines and make the same available at the level of facilities through prime-vendors, private pharmacies, ADDOs following the PPP approaches

d. Leadership and Governance – Central to periphery: Ministries, Regions, Districts (Management and supervision)

3.3 ORGANIZATIONAL CONTEXT

The program was coordinated by the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), through the national NCD UNIT, the secretariat to the national NCD steering committee, while the implementation of the activities were done by the TDA.

This program was implemented using existing structures, while at the same time further strengthening the system by:

- Bringing comprehensive diabetes & other NCD care to the primary, secondary and tertiary levels of health care.
- Introducing nutrition counselling in the clinics through a targeted nutrition-training course for clinicians and nurses to increase the capacity in the health care system to provide appropriate advice and counselling to people with diabetes and at risk groups.
- Introducing foot examination and eye screening component in the clinics through a targeted approach so as to identify “at risk” patients earlier and refer them for appropriate care & treatment.
- Linking with Reproductive & Child Health clinics to identify women with gestational diabetes
- Establishing appropriate and effective referral system from primary over secondary to tertiary level.
- Strengthening community awareness and involvement in the process to enable early diagnosis and prevention of diabetes and its complications.
- Linking with FBO and private health facilities.

Specifically, the Program targeted the following levels of health care system.

Table 1: Facilities Targeted by NDP

Health facilities	Health care providers & Community Health Workers
4 Zonal Referral Hospitals	48 Health Care Providers
27 Regional Hospitals	324 Health Care Providers + 108 Health Care Providers for advanced training
158 District Hospitals	1264 Health Care Providers
437 Health Centres	874 Community Health Workers from Government Health Centres
Total	*2510 health care providers & Community Health Workers*

Regional Secretariat (RHMTs & DHMTs)	234 Regional and District Management Teams Members

According to the plan's monitoring and evaluation framework, the implementation was to be measured by the following indicators:

Hierarchy of objectives	**Aggregate Indicators**
Overall Goal:	
To reduce the morbidity and mortality of people with diabetes in Tanzania	OG1. % Decrease of facility case fatality rates due to diabetes and its complications in Tanzania (mainland)
	OG2. % Increase of patients achieving recommended clinical and biochemical outcomes levels
	OG3. % Decrease of rate of diabetes acute complications in Tanzania (mainland)
	OG4. % Decrease of rate of diabetes chronic complications in Tanzania (mainland)
	OG5. % Increase of patient satisfaction rate
General objective:	
To increase the health system capacity to prevent, detect and manage diabetes and its complications and other non-communicable diseases	GO1. % Of targeted hospitals with functional diabetes/NCDs clinics
Specific objectives	
SO1: Strengthening capacity for care at district, regional and referral hospitals through training and provision of essential tools and material to enable early diagnosis and appropriate treatment.	SO1.1. Proportion of targeted health facilities with required trained HCP and essential tools and material to enable early diagnosis and appropriate treatment
SO2: Inclusion of specific training program on diabetes eye diseases, diabetic foot, gestational diabetes, nutrition, other non-communicable diseases (hypertension, stroke) and metabolic complications in patients with HIV/AIDS.	SO2.1. Proportion of targeted health facilities with required Health care professionals (HCP) provided with training in diabetes eye diseases, diabetic foot, gestational diabetes, nutrition, other non- communicable diseases (hypertension, stroke) and metabolic complications in patients with HIV/AIDS.
	SO2.2. Proportion of targeted districts and regions with required trained Health care professionals (HCP**)**
SO3: Establishing an effective referral system (where non existing) and strengthening the existing referral system	SO3.1. Proportion of targeted hospitals provided with equipment to diagnose and manage diabetes complications (foot and eye)
SO4: Establishing linkages with the community vide community health workers and initiating community sensitization programmes.	SO4.1. % of public health centres with required number of health workers trained in diabetes/NCDs
SO5: Strengthening the surveillance and the monitoring system for non-communicable diseases within the existing Health Management Information System (MTUHA)	SO5.1. Proportion of targeted hospitals well equipped to monitor the indicators proposed in the National Diabetes Program
SO6. Strengthening the NCD Section of	SO.6.1. Active NCD Section in place at the

the Ministry of Health and Social Welfare.	Ministry of Health

3.4 LOGIC AND ASSUMPTIONS OF THE EVALUATION

The project plan, and therefore its evaluation is based on theory of change, with various assumptions built in the model to anticipate the attainment of the stipulated goals, and objectives.(7)

The program aimed at achieving its goal of reducing morbidity and mortality from Diabetes and its complications through two main pathways:

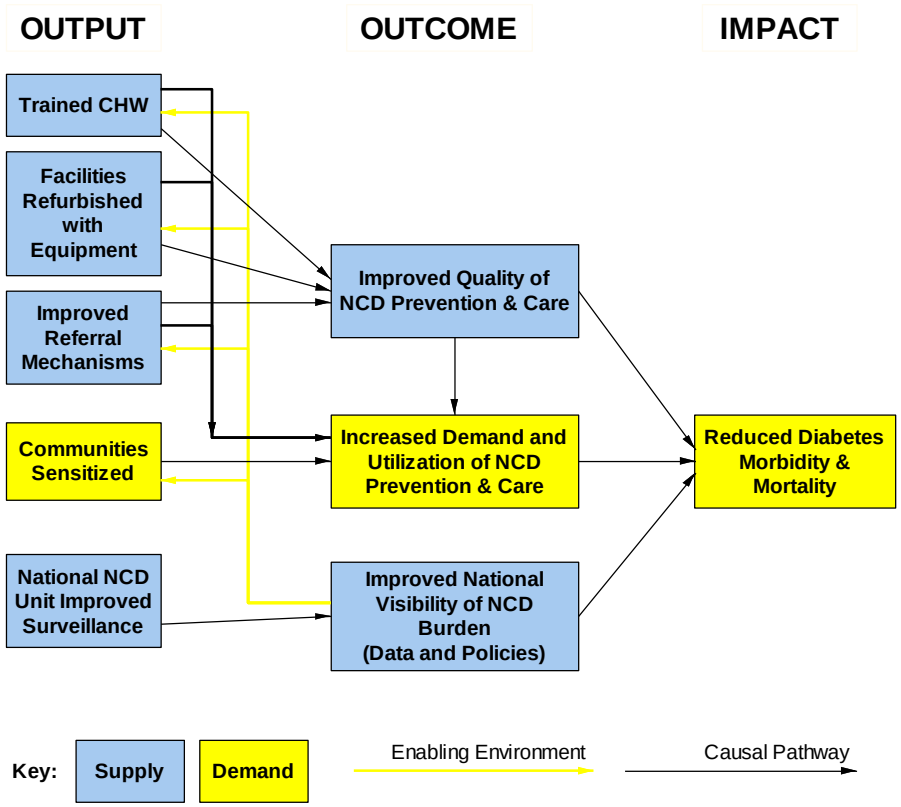
1 **Increase quantity of quality care:** through training of health care workers who will become competent and motivated to provide care coupled with provision of conducive platform (space, tools/equipment and utilities) for quality care provision. This would immediately absorb clients who were already demanding services that were not yet available, but also once services are available this might nudge clients to overcome that last huddle to use services.

2 **Increase demand and use:** through client/consumer behaviour change, this was to be achieved by creating community awareness, client education and improved communication on existing opportunities for prevention and care, (Risk assessment, counselling and support, referral, and affordable treatment).

The project further theorized that, if the NCD unit is formulated at the ministry of health, this unit would spearhead adaptation of policies for NCD prevention and control. And make NCD data available to inform those policies. This in turn will build enabling environment to improve supply and demand of quality NCD prevention and care services. Effectively making this step an important cog in the implementation of the project.

A diagram bellow depicts the theorized causal pathways under which the stipulated activities supported by WDF would have led to the expected outcomes and impact

Figure 1: Theoretical causal pathway of the project



For this causal theory to function however, the project made several assumptions that were beyond the control of the implementing entities, and thus also pose threats to the achievement of the project.

1. There would be enough and robust physical infrastructures to initiate/place NCD clinics (working space and utilities)
2. There would be enough health care workers (Clinicians, laboratory technicians and Nurses) to train, and that these people will have motivation and skills to subsequently translate training into practice
3. The project did not provide medicines and supplies; it was assumed that these will be availed by the health facilities themselves
4. Demand and utilization of health care services, is a behaviour, the project assumed that project activities (CHW community delivered screening, counselling and referral, awareness campaigns, and IEC) would achieve consumer behaviour change.

Over and above assessment of processes, outcomes and impacts of the project, the evaluation will assess whether these assumptions held truth.

3.5 OVERVIEW OF WDF FUNDED ACTIVITIES

Under WDF funding the National Diabetic Program (NDP) planned to implement the following activities in line with the project theory above:

3.5.1 Enabling environment activities

- ✓ Establishment of the NCD steering committee and NCD unit within the MOHCDGEC: The program planned and has successfully managed to hire the required staffs whose office is located within Muhimbili National Hospital and also supported the establishment of an NCD unit within the MOHCDGEC in the department of Curative Services
- ✓ Orientation of RHMTs and DHMTs on NCD: The program planned to conduct NCD orientation workshops with RHMTs and DHMTs to instil understanding, custodianship and accountability of the NCD programs at local level
- ✓ Establishment of the NCD political champion: This was planned with intention to increase national NCD visibility and accountability with a specific national focal point.

3.5.2 Health system strengthening and quality improvement activities

- ✓ Training and capacity building: The program planned to build capacity of in service health care professionals on diagnosis, care and management of NCDs and its complications. This was envisioned in various levels of health care and different departments. E.g. NCD care and management, Nutrition, Management of complications such as eye and foot care etc.
- ✓ Supply of equipment and diagnostic starter kits: Provision of starter kits for diagnosis of NCD to all hospitals at regional and district levels, while providing referral hospitals with equipment for eye and foot care.
- ✓ Integration of NCD indicators in the HMIS: Integration of NCD indicators and tools within the broader health management information systems.
- ✓ Monitoring and supportive supervision: Conducting scheduled monitoring and supportive supervision to NCD clinics and health management teams at hospital, districts and regions, in areas where the program was implemented
- ✓ Strengthening of referral systems: The program aimed to build capacity at lower health facilities to diagnose NCD and refer patients with diseases and risk factors to higher health facilities for care.

3.5.3 Awareness and demand creation activities

- ✓ Community awareness campaigns: The program planned to employ various means of community campaigns such as use of mass media to create demand and awareness on NCDs.
- ✓ Community outreach through health tents: the program planned to conduct community outreach visits for the purpose of screening and referring those with NCDs while at the same time educating those with potential risk factors for NCD.
- ✓ Distribution of IEC materials: The program planned to develop and distribute IEC materials at various levels of health facilities as a means to communicate with the large audience on NCDs.

4. CHAPTER 2: EVALUATION METHODOLOGY

4.1 EVALUATION PLAN

This evaluation took advantage of the recently concluded midterm evaluation as well as some of the program monitoring and implementation report's findings and complemented with additional qualitative data to answer the above questions and objectives. We used qualitative data to explain and contextualize the quantitative findings, but also qualitative methods were used to answer some of the key questions as depicted in the table below. Qualitative data was collected using in-depth interview of key informants (KII)

Evaluation questions	Illustrative indicators Or other assessment criteria	Data source/ Collection methods	Sampling/ Selection criteria	Data analysis method
Relevance				
1. To what extent did the project bring about the desired changes in the health system?	*1.* Number of health care workers trained *2.* Evidence of dedicated NCD clinics established *3.* Number of equipment, machines supplied	*1.* Documents: annual reports, quarterly reports, semiannual and annual program results, performance monitoring reports 2. Key informant interview (KII)	Not applicable Health managers at all levels	Review of existing reports, narrative and indicator results Thematic analysis
2. To what extent did the project reach the targeted population?	*1.* Number of clients reached over the years of plan *2.* Minimum set of services offered	Secondary data form HMIS, Program monitoring and evaluation reports	Not applicable	Comparative analyses: (1) pre-and post-interventions
3. How well did the project respond to the needs of targeted beneficiaries, including how these needs evolved over time?	Quality of NCD care	Secondary data form program reports, and M&E reports Client exit interview of NCD patients from clinics	Not applicable Exiting clients in the clinic day total 125 clients in four referral hospitals	Review of existing reports, narrative and indicator results Descriptive statistics

Evaluation questions	Illustrative indicators Or other assessment criteria	Data source/ Collection methods	Sampling/ Selection criteria	Data analysis method
Effectiveness				
1. To what extent, are results that are reported a fair and accurate record of achievements?	Verified Number of clients reached over the years of plan	Triangulation between program reports and HMIS data	Not applicable	Review of existing reports and triangulation with HMIS
2. To what extent has the project delivered results that are value for money?	Efficiency, and effectiveness in implementing program activities, and leverage to existing opportunities	1. Secondary data form program reports, and M&E reports 2. KII	Not applicable Health managers at all levels	Review of existing reports, narrative and indicator results Thematic analysis
3. To what extent has the project used learning to improve delivery?		KII	Health managers at all levels	Thematic analysis
4. What are the key drivers and barriers affecting the delivery of results for the project?		KII	Health managers at all levels	Thematic analysis
Efficiency				
1. To what extent did the project deliver results on time and on budget against agreed plans?	Activity completion rates within budget	1. Documents: annual reports, quarterly reports, semiannual and annual program results, performance monitoring reports 2. KII	Not applicable Health managers at national levels	Review of existing reports, narrative and indicator results Thematic analysis
2. To what extent did the project understand cost drivers and manage these in relation to performance requirements?		KII	Health managers at national levels	Thematic analysis

Evaluation questions	Illustrative indicators Or other assessment criteria	Data source/ Collection methods	Sampling/ Selection criteria	Data analysis method
Sustainability				
1. To what extent has the project leverage additional resources (financial and in-kind) from other sources?		KII	Health managers at all levels	Thematic analysis
2. What effect has this had on the scale, delivery or sustainability of activities? And To what extent is there evidence that the benefits delivered by the project will be sustained after the project ends?		KII	Health managers at all levels	Thematic analysis
Impact				
1. To what extent and how has the project built capacity of the health system? (Training, space, equipment)	1. Number of health care workers trained 2. Evidence of dedicated NCD clinics established 3. Number of equipment, machines supplied	KII	Health managers at all levels	Thematic analysis
Learning				
1. What are the lessons learnt from the project implementation? a. Innovative approaches b. Reducing knowledge gap in the community c. Good practices that can be up-scaled and replicated		KII	Health managers at all levels	Thematic analysis

Table 2: People selected for qualitative data collection

Institution	Number	Technique	Total
RHMT (Manyara, Tabora, Kagera, Lindi)	2 in each region (RMO, RHO)	Indepth interview	8
CHMT (Manyara MC, Bukoba MC, Liwale DC, Kalihua DC)	2 In each district (DMO, DHO)		8
Regional Hospital Management team	2 in each hospital (MOI, NCD clinician in charge)		8
District hospital management team	2 in each hospital (MOI, NCD clinician in charge)		8
Zonal Referral hospital	KCMC, 6 Bugando, 6 Mbeya Zonal Referral, 4 MNH, 3 Jakaya Kikwete Heart Institute, 1		20
National Level	Ministry of Health 1. NCD Unit Staff 2. Permanent Secretary (PS) 3. Chief Medical Officer (CMO) 4. DCS 5. Deputy Minister 6. Director of Policy and Planning (DPP) 7. Chief Pharmacist **PO RALG** 1. Director of LGA 2. Deputy PS for health 3. Director Health Department 4. Assistant Directors Regions and Districts **TACAIDS** DG (Commissioner) **Other stakeholders** *1.* Tanzania Diabetes Association Staff *2.* DANIDA focal person on the NCDs or health desk *3.* USAID *4.* WHO *5.* DPG-Health Chair *6.* Tanzania Parliamentary Forum for NCDs *7.* Tanzania Journalist NCD Forum (Continuous sensitization) *8.* TANCDA – Chair 9. APHFTA (ADDOs) *10.* PATH- International *11.* NACP *12.* TB/HIV & RCH *13.* Dr. Deo Mtasiwa *14.* Dr. Mbatia	Key Informant Interview	12
Total			**68**

4.2 DATA PROCESSING AND ANALYSIS

Qualitative data were transcribed then translated before analysis. A thematic analysis approach was used to analyse data according to specific evaluation questions, and according to project specific objectives. Quantitative data from program monitoring and implementation reports, HMIS and midterm evaluation reports were aggregated and presented as frequency with respective proportions. Charts and figures were used to present some of the findings. Exit interview data were descriptively analysed.

4.3 ETHICAL CONSIDERATIONS

All interviewed participants were asked for informed consent in Kiswahili before the actual interview. Letters were written to both ministries of health (MOHCDGEC) and PORALG to request undertaking this evaluation and the clearance was obtained. Officers were assigned and activity started. Data were only collected from consenting participants. Results obtained from this evaluation will be made available to the participating regions, districts, health facilities and other stakeholders.

4.4 DESIGN STRENGTH (MIXED METHODS AND TRIANGULATION)

- ✓ The design has allowed for triangulation of quantitative data from various sources such as HMIS, NDP midterm evaluation reports as well as NDP program monitoring and implementation reports. These were necessary to complement findings from qualitative data as far as the evaluation questions were concerned.
- ✓ The evaluation questions required a variety of methods and some of the questions required more than one method to be sufficiently answered. This approach was an ideal for this purpose.
- ✓ In account of the validity and reliability of the evaluation results, a combination of qualitative and quantitative approach was essential in order to answer some elements of a single question thus increasing confidence.

4.5 SOME WEAKNESSES OF THE EVALUATION DESIGN

- ✓ Impact evaluation aimed to measure change in behaviour of the people with regard to NCDs, however in this evaluation this was not possible due to the limited scope of the evaluation; only key informants were interviewed, and although beneficiary data in the midterm evaluation was available, these data lacked comparison group to ascertain project effect.
- ✓ Timeliness: As data were collected for evaluation, some data on service provision was still not available, for example data on NCD care were not available, the evaluation team therefore used HMIS hypertension and diabetes data as proxy indicators. Program implementation in the lake zone is done by another project and not NDP. Hence is discounted from this evaluation though there is clear collaboration in delivering the results.
- ✓ Unavailability of some data: information on morbidity, complications and mortality due to NCD were not available as a result we could not ascertain the effect of the program

on these parameters. This is actually measuring the impact of the program on these parameters. The evaluation teams is aware that the impact is an accumulation of many actions outside the programme and a measure of health systems functionality.

- ✓ Selection bias: The qualitative data from this evaluation was only collected from NCD implementers and not from beneficiaries. This could lead to some selection bias.
- ✓ Limited availability of key personnel for interviews: The target was to interview 48 as per the table above but during this season it was difficult as the government was on transition from Dar es Salaam to Dodoma and most of the principal interviewees were not available in Dar es Salaam and when visited in Dodoma, they were busy settling down in the new city.

4.6 SUMMARY OF PROBLEMS AND ISSUES ENCOUNTERED DURING THE EVALUATION

Except for the challenges of reaching out for the people to be interviewed, there was not much to explain here. The southern part of the country was rainy and we had some difficulties with the terrain during travel by road.

On service provision, some of the staff trained to deliver on NDP have been reallocated within the hospitals and some have retired or transferred to other regions and or districts.

Other programs operating in some of the regions like the one providing insulin for juvenile diabetes mellitus has a condition that the donated insulin should not be dispensed to adults over 18 years. This creates some difficulties in patient care.

The supply side in terms of medicines and equipment is weak and the providers and managers were requesting the NDP to provide for the medicines to compliment the MSD which appear to have unresolved challenges of NCD medicines especially insulin.

There is weakness in supportive supervision form the program. There was a complaint that they use phone calls to collect data but not to visit and discuss on challenges and issues to be resolved.

The training missed some of the key staff like Pharmacists, Doctors in-charge of the hospitals and Laboratory technicians. It was also pointed out that there is need to train the nutritionists on the issues of diabetes prevention and the risk factors to support the NCDs program as there is a strong link between diabetes and the food intake. It was noted that the trainings included nutritionists and or their representatives. Those trained were regional and district nutritionists who did not necessarily have qualification in clinical nutrition needed to address the NCD in the health sector settings. There were not enough nutritionists deployed in the regions and districts at the time of evaluation. This is part of the human resource challenges facing the health sector in Tanzania.

5. CHAPTER 3: FINDINGS AND CONCLUSIONS

5.1 Overall NDP implementation

The National Diabetes Program (NDP) has successfully implemented more than 75% of her scheduled activities. Most of these were done within the stipulated timelines as summarized hereunder:

5.1.1 Creating enabling environment: Establishment of the NCD unit within the MOHCDGEC, sensitization of RHMTs and DHMTs, Stakeholders meeting at national level

The enabling environment is addressed in **specific objective 6** of the NDP. The program managed to establish a fully functional NCD unit within the MOHCDGEC Department of Curative Services, with 8 professionals and other support staff. The coordination is proposed to be in the department of preventive services that cuts across all the departments and the other sectors. Currently the coordination is in the department of curative services. The NCD Program office is located within the Tanzania Diabetic Association (TDA) premises at Muhimbili National hospital. The program has hired staffs to support its operations. There is a program coordinator, an accountant and a driver cum logistics officer.

Furthermore, more than 50 steering meetings were held with stakeholders at national level, while over 300 managers from regional and district health management teams were oriented on NCD strategic plan. Championing NCD at national level was achieved with high success, where the national NCD strategic plan was launched by the Honourable Minister for health, Ummy Mwalimu and this has been enhanced by her Excellency the Vice President of the United Republic of Tanzania Mama Samia Suluhu with a declaration that the morning of every 2nd Saturday of the month should be dedicated to physical fitness activities.

5.1.2 Capacity strengthening by training health care professionals

Capacity building is addressed in **specific objective 1, 2 and 4** of the NDP. The integrated curricula have been developed for in-service health care providers targeting the following key areas:

1. NCD diagnosis and care
2. Diabetes in pregnancy
3. NCD care among patient with HIV, TB and leprosy
4. Nutritional aspects of NCD management
5. Advanced care of eyes and foot among patients with diabetes
6. Community health care worker curriculum on education, risk factor identification and referral for NCD care

Resultant from the training curricula: the program trained a total of 2548 HCPs from seven zones as shown in the table below. This translates to 43% increase in

achievement against the set target of training 1777 HCPs. The proportion of targeted health facilities against the original target ranged between 100% - 326% in the zones where NDP has been implemented (table 1&2 below). The extra number of health facilities reached during program implementation was due to internal reorganization of Government administrative structures which increased the number of regional hospitals from 18 earlier to 27 regional health facilities representing a 50% increase. Also the number of district hospitals shot up from initial target of 112 to 158 representing a 41% increase.

Although there is a strong evidence of successful training of intended staff, the evaluation team could not ascertain the effect of training on the quality of care i.e. there is no evidence that the training of HCPs has actually resulted in improved quality of NCD care. Of particular concern is the lack of integration of NCD in HIV, TB and leprosy clinics, despite successful training on integrated NCD/HIV, TB and leprosy.

Table 3: Type and number of health care professionals trained by zones

	ZONES					
Training	**Northern**	**East and Southern**	**Southern Highlands**	**Central & western**	**Lake**	**Total**
1. Training DM diagnosis and management (4 days - NCD/OPD)	114	149	136	275	160	**834**
2. Training DM diagnosis and management (4 days - HIV)	36	37	57	32	39	**201**
3. Training DM diagnosis and management (4 days - TB/Leprosy)	33	34	41	29	20	**157**
4. Training DM Nutrition	72	73	79	64	72	**360**
5. Training Diabetes in pregnancy (2 -days)	41	53	39	31	56	**220**
6. Training Diabetic eye diseases (Eye care HCP)	35	39	53	29	28	**184**
7. Training Refresher for Referral hospitals	8	15	11	8	13	**55**
8. Community Health Workers (HCP from Health Centers 2 days training)	145	151	185		56	**537**
Total	**484**	**551**	**601**		**444**	**2548**

Table 4: Proportion of target reached by level of health care

	Level of Health Facility			
Zone	**Referral Hospital**	**Regional Hospital**	**District Hospital**	**Health Centers**
Eastern and Southern Zones	1	7	30	66
Southern Highlands zone	1	6	35	90
Central and Western zones	0	4	30	84
Northern zone	1	4	29	91
Lake zone	1	6	35	106
Total	**4**	**27**	**158**	**437**
Target	4	18	112	134
Achievement in Percentage (%)	100	150	141	326

The **specific objective 4** of the NDP stipulates linkages with community via community health care workers. This was implemented through training of health care workers from health centres who are responsible for community linkages. A total of 861 of the targeted 874 (98%) were trained using community health care workers NCD training curriculum. There is evidence of increased demand and referral form lower health facilities and communities, with some of the key informants associating the perceived increase in care demand to this community linkage. However there was no quantitative data specific on referral to confirm this.

5.1.3 Capacity strengthening by distribution of NCD starter kits

Provision of tools and equipment is addressed in **specific objective 1** of the NDP. The program proposed distribution of starter kits for NCD thereby improving NCD diagnosis and care. To that end the program managed to distribute NCD starter kits to a total of 189 health facilities from seven zones Northern, Eastern, Southern, Southern Highlands, Lake, Central, and Western. This translates to 41% increase in exceed achievement against a target as shown in table 3 below.

Table 1: Starter Kits distributed by level of health care and by zone

	Level of Health Facility			
Zone	**Referral Hospital**	**Regional Hospital**	**District Hospital**	Total
Northern	1	4	29	34
Eastern and Southern	1	7	30	38
Southern Highlands	1	6	35	42
Central and Western	0	4	29	33
Lake zone	1	6	35	42
Total	**4**	**27**	**158**	**189**
Target	4	18	112	
Achievement in Percentage	100	150	142	

After successful initial supply of tools and kits to kick start NCD clinics, many managers report to have run out of some supplies, e.g. Blood glucose measuring cuvettes etc. which were not readily available at MSD.

5.1.4 Strengthen referrals, awareness creation, IEC and supplies

Apart from training community health care workers, **specific objectives 3 and 4** are further implemented by the program by increasing awareness and improve beneficiary education on NCD, the program intended to produce and distribute IEC materials, and conduct mass media campaigns for NCD. The project managed to achieve 100% of this target as per table 4 below. More than 30 health campaign and screening camps were conducted with over 12,000 people reached. Those with special needs such as patients with diabetic retinopathy and diabetic foot were also reached; more than 2000 people in each category.

Referral systems were strengthened whereby community health care workers were able to correctly identify the most at risk population and refer them to higher levels. Furthermore, the health screening campaigns and the now capacitated NCD clinics could appropriately identify patients with complication and those with special needs and refer them to higher specialized care.

Table 2: Distribution of IEC materials by zones and health care levels

	Zonal Referral	Regional Hospitals	District Hospitals	Health Centres	Dispensaries
IEC materials Northern zone	1	4	29	91	756
IEC materials East and southern	1	7	29	66	742
IEC materials Southern highlands	1	6	33	90	975
IEC materials Central and west	0	4	24	84	990
IEC materials Lake zone	1	6	34	106	976
Total	4	27	149	437	4439
Target	4	27	158	437	NA
Achievement	**100%**	**100%**	**94%**	**100%**	

5.1.5 Supportive supervision

To improve and sustain quality of care **(Specific objective 1)**, the NDP aimed at conducting scheduled supportive supervision visits to health facilities with established NCD clinics. Three rounds of supportive supervision were conducted covering 100% of the regional and referral hospitals while only 31% of district hospitals were supervised. It was pointed out in all the visited facilities in the evaluation, that there was no supervision visits to the regions nor districts from the National Diabetic Program or the MOHCDGEC during the program period. The program was communicating remotely by phone calls. The implementers emphasized the need to have effective supportive supervision. The lack of regular medicines supplies and other challenges needed a face to face discussions. However the programme did not plan for the supportive supervision visits form the centre.

5.1.6 Strength

- ✓ Strong NDP implementation team
- ✓ NDP implemented many activities on time and efficiently, reaching majority of intended recipients. However the supply side in terms of medicines and reagents is not up to the mark and some patients are suffering especially those on insulin therapy.
- ✓ Strong support and buy in at all levels enabled faster and smooth implementation of activities and indeed the political acceptance of the physical fitness and encouraging staff to undertake exercises every Saturday is very impressive.
- ✓ Commissioning of the NCD Strategic Plan 2016-2020 and appointment of both regional and district NCD coordinators
- ✓ Engagement of partners who are also willing to support the NCD program has been very crucial for effective implementation of NCD program in Tanzania. The program has on board the Association of Private Health Facilities in Tanzania (APHFTA) who are championing interventions in areas of school health targeting primary prevention of NCDs. Tanzania Non Communicable Diseases Alliance (TANCDA) is another partner in NCDs prevention. It is an umbrella organisation for other disease organisations such as Tanzania Diabetes Association (TDA), Heart Foundation of Tanzania (HFT), Tanzania Association of Respiratory Diseases (TARD) and Tanzania Cancer Association (TCA). Other NCD disease group are also effectively represented in this organisation. TANCDA has been very instrumental for effective coordination of NCDs activities among various disease organisations especially in the areas of advocacy and awareness of NCDs. Other partners such as Government ministries, agencies and regulatory institutions were also engaged through a multisectoral approach. This has resulted in the presence of a multisectoral framework against NCDs in Tanzania and also the establishment of a National Multisectoral Framework for Nutrition in Tanzania.

5.1.7 Weakness

NDP team is not robust enough to cover all the targeted regions, evidenced by inability to carryout field supportive supervisions which resorted into making phone calls follow up. Those in the facilities are expecting to be supervised and mentored. However there were no supportive supervision planned visits from NDP. This was expected to be part of the CHMTs routine visits and hence the sensitization meetings. The program pushed for the establishment of district and regional NCD Coordinators, now in place. The absence of supportive supervision from NDP is evident. Other weaknesses include:

- ✓ Longer and bureaucratic procurement system has led to delays in procurement and supply of eye and foot equipment's for referral hospitals.
- ✓ Inadequate funding limiting implementation of the program at higher levels of health care system, while excluding care provision at lower levels, e.g. health centres and dispensaries, Insulin could not be consistently supplied to all in need.
- ✓ High staff turnover resulting in staff who are not trained to work in NCD clinics, compromising quality and efficiency.
- ✓ Scarcity of some of supplies for NCD care, e.g. glucometer cuvettes, etc.

- ✓ Like all other medicines in public health facilities, Diabetes medicines are in short supply especially insulin. DM medicines cannot be obtained elsewhere when the government system or facilities are short of the supplies.

5.2 RELEVANCE

The National Diabetes Program translates the national health policy and national health sector strategic plan IV, 2015-2020. And thus demonstrates coherence and resonance with these main strategies that are anchored in sustainable development goal 3 in particular**.**

The implementation of NDP is a direct interpretation and translation of SDG 3.4 into Tanzania context. SDG3 calls for:

- ✓ Increasing access: Specific objective 1 through 6 of the NDP addresses this by aiming to establish and strengthen NCD care clinics country wide, with expectant increase in access to quality NCD care.

- ✓ Support of juvenile diabetes care, diabetes in pregnancy and diabetes in general enables people of all ages to access these important care services. This resonates with the goal of reaching all ages, and most vulnerable groups with affordable and quality health care.

The implementation of this program is the first systematic national response towards NCD control; it lays foundation for more robust responses by highlighting the burden, gaps in terms of health system capacity, demand and meeting those demands for NCD prevention, care and support. Of particular importance is the NDP's specific objective 5, which lays foundation for providing baseline data of the burden of NCD, and introducing smart indicators to track national response to NCDs.

This approach is also in line with Universal Health Coverage as is translated into the Single National Health Insurance in the making with its broad based mixed financing modalities. Once implemented the NCD program will be in the fore front to benefit from this strategic policy direction.

5.2.1 Strengths

- ✓ There is strong visibility of NCD now in the country; this is a testament of the work done by NDP and other stakeholders in elevating the NCD agenda. We have recently witnessed the launching and championing of National NCD strategic plan 2016 - 2020 by the Health Minister honourable Ummy Mwalimu and the Vice President, Her Excellency, mama Samia Suluhu.

- ✓ Increased awareness and understanding of NCD and the importance of prompt response to this burden across all levels was found during this evaluation. Managers at all levels understood and were accountable for the NCD response. Of particular importance is the understanding and urgency called by the President's Office, Regional Administrative and Local Government, where both the Deputy Permanent Secretary for Health and the Director of Health Services called for renewed zeal, bottom up approach on planning with NCD on the fore front, and accountability for resources for NCD response.

- ✓ The NCD Multisectoral meeting was called during the formulation of the NCD strategic plan and it is planned to have a Multisectoral Steering Committee under Prime Minister's Office.

- ✓ Many of the hospitals and councils have already started incorporating NCD activities and interventions in their operational plans (CHOPs and CCHPs)
- ✓ Key players and stakeholders in the health sector are already interested and contributing/financing the NCD response. In the evaluation, various managers mentioned involvement of the National Health Insurance, and other private sector actors supporting provision of health education, screening and supporting quality and appropriate NCD care.

5.2.2 Challenges

- ✓ NCD response requires significant investment. Much remain desired in financing NCD response from country own resources and from development partners.
- ✓ Integration and leverage of existing financing mechanisms is yet to be realized, as a result NCD remains to be a minimally funded area as compared to other disease blocks.
- ✓ Sector wide response for NCD is still at its infancy; Governance and management of health services is challenging given the fact that health transcends into other sectors and good management require robust systems, political support at all levels and managers who are committed for the work and the population. However there is a process of formulating a NCD Multisectoral Steering Committee.

5.3 EFFICIENCY

- To answer this question, our evaluation team used data from program reports and information obtained during interviews with managers at all levels. We used routinely collected data reported through the Health Management Information System (HMIS – DHIS2) to assess the number of people reached with NCD services using Diabetes and Hypertension as proxy indicators, and whether there was a temporal trend over the years. As illustrated in the figure 2 below, the number of people utilizing hypertension and Diabetes care services has been increasing over the years. Although part of the increase is attributed to increased data reporting rates from 79% in 2014 to 90% in 2016, there is an equivocal evidence for an increase in service utilization, as alluded in the key informant interviews.

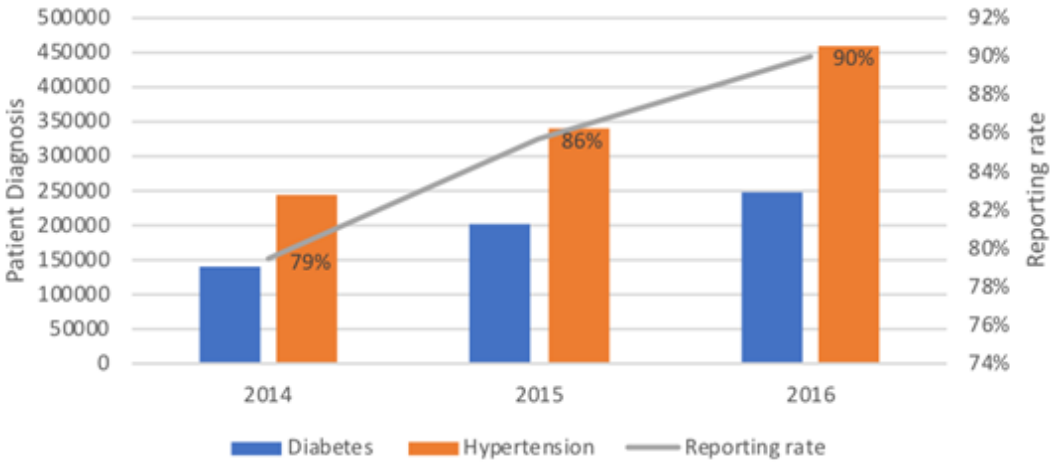
> "Challenges that were observed during the implementation of this program. The NDP team had not been robust enough to cover all targeted regions. This is evidenced by inability to carryout field supportive supervisions to all targeted regions, longer and bureaucratic procurement systems had delayed the procurement and supply of eye and foot equipment for the zonal referral hospitals. High staff attrition rates resulted into staff not trained on diabetes management

- The observed increase in diagnosis and care for NCD is further alluded to special focus now placed on NCDs, we found out that in all visited health facilities, there were dedicate days in a week where NCD care

> "NCD response requires significant investment. Much remain desired in financing NCD response from country own resources and from development partners.
>
> Integration and leverage of existing financing mechanisms is yet to be realized, as a result NCD remains to be a minimally funded area as compared to other disease blocks.
>
> Sector wide response for NCD is still at its infancy; Governance and management of NCD services is sector-wide and thus challenging to coordinate"

(Diabetes and cardiovascular diseases clinics) were provided. Dedicated clinic space with equipment, and validated information that clinic staffs were actually trained on provision of NCD care. These findings are congruent with what is reported through monitoring report, and midterm evaluation report. Eighty-five percent (85%) of staff were trained on Diabetes screening and classification, about 60% were trained on management of hypertension. (NDP monitoring report 2015). While 70 - 75% of health facilities had either dedicated space for Diabetes and hypertension or a dedicated clinic day(s) (NDP Midterm evaluation report 2016).

Figure 2: NCD Diagnosis and Reporting rates: HIMS 2014 - 2016



- Evidence point out to a modest increase in quality, over and above the reported increase in access. Data in the monitoring report and midterm evaluation indicates that, percent of health facilities providing monitoring tests (Blood chemistry, or ECG), increased from 35% in 2015 to 40% in 2016 (Monitoring and evaluation report and Midterm evaluation report, respectively) 20% of diabetes patients interviewed received monitoring tests while health education was often provided (80%). Moreover, other indicators of quality, e.g. client satisfaction on the overall quality and other components of care, were found to be moderate to high as shown in figure 3 below.

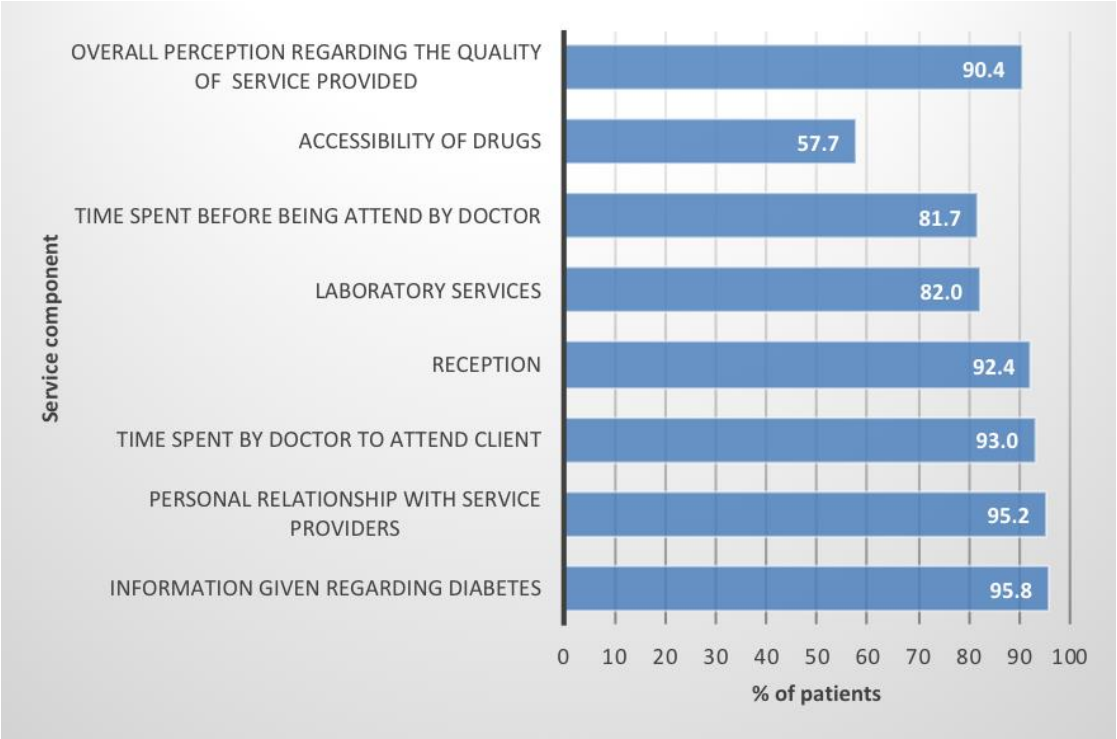


Figure 3: Patients satisfaction with services at their clinics (NDP Midterm Evaluation report 2016)

- Availability of medicine had the lowest score, a fact confirmed in the key informant interviews which consistently associated lack of medicines to its costs, and unavailability at MSDs.
- Managers and health care workers pointed out that, delivery of NCD care improved due to increased diagnosis capability, efficient in time management through dedicated clinic days, and improved data recording and reporting system which also enabled them to utilize data for decision making, e.g. management of patient load by allocating appointments as well as monitor patient progress and outcomes.

Challenges:

"Blanket exemption means that some who can afford care and are covered in health financing schemes will still receive free care. This strategy may not work well due to limited funding for NCDs and less support from donor

- The evaluation team also found that various reasons were alluded to the observed and perceived efficiencies; the management of NCD patients became more organized in such a way that most facilities could have a dedicated space for NCD clinics.
- Furthermore, the program has facilitated the availability of equipment, drugs and supplies, treatment guidelines, health education posters and leaflets in some of the established clinics, inputs without which, interviewees felt the services would have not improved.

- Medicines and diagnostic tests are mentioned as the cost drivers. Not surprising, these are the most missing components of NCD care. To circumvent this, managers opted to have collaborations with the National Health Insurance Fund, who subsidized awareness campaigns, diagnostic test, and that many patients afforded care because they have NHIF/CHF cover.

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  - ✓ Relevance: The NDP addressed the sustainable development goal 3.4., and through its implementation, translated the national Health Sector Strategic Plan IV 2015-2020, and the national NCD plan into actual implementation.
  - ✓ Efficiency: NDP was implemented reaching almost all targets on time. Investment in training of health care professionals and equipping health facilities is likely to have long term sustained gains and positive spill over to overall quality of health care.
  - ✓ Effectiveness and Impact: There is a weak to moderate evidence of program effectiveness on direct increase in NCD care. Data used to measure this effectiveness is secondary HMIS – DHIS that is potentially weak. However, use of this non-NDP data to verify effectiveness increases authenticity of achieved effectiveness.
  - ✓ Sustainability: NDP has managed to build ownership and accountability at all levels, while at national level the Vice President of the United Republic of Tanzania champions and spearhead the national NCD 2016 – 2020 strategic plan and NCD response. At regional, councils and hospital levels, NCD interventions are strongly advocated for by the PORALG, and are incorporated and integrated in their plans. Funding for NCD remains gloomy; this threatens sustenance of current and future gains in the NCD block of diseases.

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  a mention of a substantial lag time between training, provision of equipment's and initial running of NCD clinics. In such places managers were concerned on the translation of training into practice and overall quality of NCD care provided. They pointed to a need for a refresher training in places where there was a long lag time between capacity building and start of service provision

5.3.1 Strength

- Efficiencies in terms of knowledge and skills retention is expected due to the following observations:

  - ✓ There is continuous transfer and enforcement of skills through on-job training

  - ✓ Continuous medical education through clinical presentations and discussions conducted in most of the health facilities.

- Political will and accountability have been mentioned as key drivers for success of the NCD programs. Engagement of political leaders, and commemoration days were mentioned as strategies to elevate NCD awareness. For example, some managers mentioned that the current NCD spotlight is a result of placement of NCD as a national agenda at the Vice-President's office, which culminated to the launch of 2016 – 2020 NCD action plan.

  - ✓ In almost all the regions involved in the evaluation, NCD agenda is well known beyond people in the health realms, incorporated into health plans at hospital levels (CHOPs) and council levels (CCHPs)

- ✓ Appointment of district and regional NCD coordinators
- ✓ Adaptation of life style changes adapted by political leaders, for example, regional commissioner's lead exercises on Saturdays as reported by Kagera Regional Medical Officer and his team, e.tc.

5.3.2 Challenges

- Threats however exists that could potentially derail the existing gains:
  - ✓ Trained staff attrition through retirement, transfers and rotation to departments that do not provide NCD care
  - ✓ Cost and availability of medicines, equipment maintenance and test kits
  - ✓ Distance and costs associated to transport and other incidental costs including opportunity cost when patients from the villages have to travel to access services at district or regional level facilities. Dispensaries and HCs are not yet connected to the NDP services as this is a huge cost
  - ✓ The private health facilities are not yet engaged fully. Preference was given to public facilities and FBO's

5.4 EFFECTIVENESS AND IMPACT

- Some of the impact of NDP on health system, could be drawn from the NDP implementation section above.
- We could however not be able to elucidate the impact of the NDP program on behaviour and lifestyle of the beneficiaries' due to lack of counterfactual.
- To examine effectiveness of the program we compared number of patients diagnosed with NCDs as reported in HMIS from all zones to lake zone; lake zone is selected as a comparison group because, it is yet to implement all components of the project. Although not a very good counterfactual, yet Lake Zone is the only place where the program was not yet fully implemented, given the fact that another partner is implementing similar activities.
- The comparative analysis is further complemented by qualitative data that look at various other dimension of effectiveness and efficiency.
- Table 5 shows the cumulative number of patients diagnosed with hypertension or diabetes over the three-year period (2014 – 2016). Overall hypertension diagnoses reported were twice as much as compared to diabetes diagnoses.

Table 3: Number of Hypertension and diabetes cases in program recipient and delayed program recipient regions 2014 – 2016

Region	Diabetes Mellitus	Hypertension
Delayed program	93,778	172,462
Geita	6017	13076
Kagera	30104	60927
Mara	20912	33417
Mwanza	26490	37295
Shinyanga	7663	19630
Simiyu	2592	8117

Region	Diabetes Mellitus	Hypertension
Implemented program	622,874	1,316,903
Arusha	65953	106790
Dar es Salaam	217302	391726
Dodoma	22210	38236
Iringa	10618	29998
Katavi	2385	7114
Kigoma	15087	23038
Kilimanjaro	99543	172814
Lindi	8063	39695
Manyara	15543	14431
Mbeya	23642	57396
Morogoro	23678	75972
Mtwara	9877	47675
Njombe	6125	22776
Pwani	21298	69176
Rukwa	4194	10354
Ruvuma	12874	48492
Singida	7910	19951
Songwe	5438	8145
Tabora	8375	23364
Tanga	42759	109760
Grand Total	**716,652**	**1,489,365**

- Using district as a unit of observation, we compared project recipient zones (districts in all zones except Lake zone) as compared to districts in Lake zone (comparison) to determine the effect of program on diagnosis of diabetes and hypertension (Proxy indicators).

Table 4: Project effect on diagnosis of diabetes 2014 - 2016

Diabetes	Coefficient	Std. Err.	T statistic	p-value	Lowe limit	Upper limit
Period	-134.1	144.3	-0.9	0.354	-418.9	150.7
Project effect	526.5	242.9	2.17	0.032	47.1	1005.9
Constant	271107.5	290788.6	0.9	0.352	-3026219	844836.9

- Table 6 shows that in program recipient districts on average, the diagnosis of diabetes was higher by 526 patients per district per year as compared to non-recipient districts. Time did not affect the average diagnosis of diabetes.

Table 5: Project effect on diagnosis of hypertension 2014 - 2016

Hypertension	Coefficient	Std. Err.	T Statistic	p-value	Lowe limit	Upper limit
Period	-326.9	238.2	-1.4	0.172	-796.9	143.1
Project effect	1224.1	421.9	2.9	0.004	391.8	2056.4
Constant	660451.9	479975.3	1.4	0.170	-286545.1	1607449

- Table 7 shows that in program recipient districts on average, the diagnosis of hypertension was higher by 1224 patients per district per year as compared to non-recipient districts. Time did not affect the average diagnosis of hypertension.

  Using two proxy indicators, the program appears to have marginal to strong effect (p-value 0.03, P-value 0.004) on diabetes and hypertension diagnoses respectively. Although we are using reported diagnoses as measure of program effect. This does not mean that in areas where the program has been fully implemented had higher burden than that in the comparison areas (Lake Zone). What these findings are showing/suggesting is that the program is effective in increasing care seeking and reporting of these conditions. This might be attributed to demand creation and awareness, but also to health systems strengthening for NCD care in areas where the program was implemented.

5.4.1 Strength

- ✓ Access to NCD care is increasing over the years indicating effectiveness of the program
- ✓ Awareness coupled with slowly growing referral systems form community and lower health facilities was evident form interviews with managers

5.4.2 Challenges

- ✓ Lack of baseline data and reliable data to efficiently measure effect and impact
- ✓ Increasing demand at higher health facilities threatens quality and stretching thin the already scarce resources at this level
- ✓ Lack of medicines and high cost of medicines still limit access and quality of care among those not able to afford them.

5.5 SUSTAINABILITY

- The program invested in areas with sustained gains, such as capacity building of health care professionals, procurement and supply of equipment and tools. These areas are likely to retain a lasting effect on access and quality of NCD care
- During the evaluation, we noted that the program has succeeded to make NCD a formal agenda within the existing health care system. NCDs have been placed at the Vice president's office and recently we have witnessed the launch of the NCD Action plan for 2016-2020. At the national level, NCDs are being coordinated through a network of NCDs coordinators at all levels. Furthermore, the health managers at visited facilities pointed out that currently NCDs are incorporated in their CCHPs and CHOPs such that during planning and budgeting, NCDs-related activities will also be considered for funding. All these activities highlight the program's impact and ensure its sustainability.

  "CCHPs at the national level is linked all the way down to the local level through the appointment of NCD coordinators. CHOPs at both the hospital level and council level now involve NCDs"
- The evaluation team also found that apart from user fees and exemption policy, NCDs are currently financed through NHIF, CHF as well as other insurance schemes. This will ensure availability and accessibility of NCDs services to majority of population. 82%

of client exit interviewees at zonal referral hospitals were using NHIF, this however is not representative of the population, and there is a high likelihood that, those accessing care are the ones who have insurance cover or have means to do so. There is a need to understand the scope of ability to pay at population level in order to ascertain sustainability of NCD care.

- Review of other hospital data indicates that majority of NCD patients are old, and poor, falling under the exempted block of patients, this however is a blanket application of the exemption criteria, meaning many patients who either have insurance cover, or can afford care are not contributing towards services they utilize.
- The use of continuous medical education (CME) during clinical meetings and different avenues as part of capacity building for NCDs also contributes to the sustainable form of NCD training.
- Sensitization for Corporate Social Responsibility (CSR) will support key sustainable activities and provide more support to patients
- Patients associations and support are being initiated and will enable them to support each other, request for more services and support from the community and CSR including voicing their concerns when services are not up to the mark

5.5.1 Strength

- ✓ Presence of National costed NCD plan, that shows long term targets and what resources are needed to get there
- ✓ Incorporation of NCD activities in comprehensive plans at hospital and council levels
- ✓ Adaptation of alternative low cost capacity building strategies, such as on job training and continuing medical education
- ✓ Engagement of other partners and stakeholders for co-financing, e.g. NHIF, CHF and other private health insurance schemes
- ✓ The process of establishing Single National Health Insurance (SNHI) will support NCDs through the universal coverage concept and anticipation when the scheme is fully operational
- ✓ Formation of patients associations

5.5.2 Challenges

- ✓ Blanket exemption means that some who can afford care and are covered in health financing schemes still receive free care. Should exemption be tailored to those who really cannot afford and are not covered by other health financing schemes would free more resource to reach those in need and hence ensuring Universal Coverage and equity including affordability
- ✓ Limited NCD funding
- ✓ Support from donor is also limited for now.

5.6 IMPACT OF NATIONAL DIABETES PROGRAM AT THE ZONAL REFERRAL HOSPITALS

The National Diabetic program (NDP) has been collaborating with the zonal referral hospitals in a number of ways. Most importantly is in the annual commemoration of the *World Diabetes Day* whereby outreach camps which were organized for screening of diabetes/NCDs as well as provision of education/awareness campaigns to the community. Furthermore, the hospital's management acknowledged being involved in various stakeholders' meetings organized by NDP in support of Diabetes care in Tanzania. Upon assessing the projects' impact on zonal referral hospitals, the evaluation team highlighted/noted the following:-

5.6.1 Distribution of Eye and Foot Care Equipment

The evaluation team noted that only eye care equipment were distributed in the four zonal referral hospitals. These include slit lamp, fundus camera and green laser as summarized in table 4 below. The team was also notified that diabetic foot equipment were yet to be installed in the designated hospitals. However, continuing efforts are underway to get them cleared off at customs so that the distribution and installation can take place immediately.

Table 4: Distribution of eye and foot care equipment intended for zonal referral hospitals

Name of machine/ equipment	Date of receipt	Functional status	Existing maintenance plan and contract	Existing cost recovery and replacement of the equipment strategy
KCMC				
Topcon Pascal Laser	25/01/2018	Functional	Under warranty	Sustainability cost sharing fund
Topcon NW8F Fundus Camera				
Topcon slit lamp with Camera				
Bugando				
Topcon Slit lamp with Topcon DC-4 digital camera.	23/12/2017	Functional	21 Months manufacture warrant.	After warrant period, sustainability cost recovery budget will be set for maintenance
TOPCON new Mydriatic Retinal Camera with Nicon D7200 Digital Camera				
Topcon Laser Machine on ATE-S Table				
Mbeya Referral Hospital				
Topcon Digital Slit lamp with Topcon DC-4 digital camera	26/12/2017	Functional	One year warranty	No specific cost recovery strategy; the equipment is used for routine eye examination.
Topcon Pascal Synthesis Laser machine				Patients pay for every treatment session; some amount of money collected is kept for maintenance of the equipment.
Topcon Non-Mydriatic retinal Camera				Patients pay for fundus photographs; money collected is kept for maintenance of the

Name of machine/ equipment	Date of receipt	Functional status	Existing maintenance plan and contract	Existing cost recovery and replacement of the equipment strategy
				equipment.

5.6.2 Specialized Care for NCD Complications at the Zonal Referral Levels

a) **Trained HCWs on various Specialization related to NCD**

The evaluation team noted that a good proportion of health care providers at the zonal referral hospitals had received training related to NCDs. The trainings included DM diagnosis and management, DM nutrition, DM in pregnancy as well as DM eye diseases and other comorbidities such as HIV/AIDS, TB & Leprosy. These trainings would not have been possible without the support of the NDP and this highlights its impact at the tertiary level facilities. Nonetheless, the team noted that there is still a need of refresher trainings since some of the HCPs have been transferred and others are relatively new to the department. Connecting to that, the installation of new eye care equipment necessitates some in house training for some specialized ophthalmologists **(surgical/medical-retina)** who were not actively practicing before.

b) **Establishment of specialized NCD clinic**

All four zonal referral hospitals have specialized clinics for both DM and HTN. Clinics are separated and run frequently during the week. Most of them have more than two clinics per day for both DM and HTN. Moreover, a specific clinic for children with Type 1 DM is in place run by paediatric endocrinologists in all referral hospitals visited. The sub specialization has managed to a great extent improve the efficiency of services provision in these hospitals as also evidenced by patients' satisfaction in the subsequent subheading. The establishment of specialized NCD clinics has greatly improved the quality of care amongst NCD patients as it has removed the long procedure and waiting time associated with a centralized hospital triaging while accessing NCD care at the hospital.

c) **Increased number of NCD patients with complications attended at the zonal referral hospitals**

To assess NDP's impact on care for NCD complications we abstracted clinic records from the visited referral hospitals, and conducted a trend analysis of number of patients with NCD complication cared for at these hospitals. At KCMC the average number of diabetic eye cases per month has increase from a low of 173 patients per month in 2015 to about 243 patients per month in 2017. Similarly in Bugando about of 2 patients per month of Diabetic eye diseases were seen in 2015 compared to an average of 7 patients per month in 2017. There was no such changes noted in Mbeya regional referral hospital (average of 2 Diabetic eye cases per month; between 2015 - 2017).

d) **Patients' perception on the quality of care received at the NCD clinics in the zonal referral hospitals**

Post-service exit interviews were conducted amongst 125 patients who received care at either the DM, Hypertension or Eye care clinic of the four zonal hospitals visited. Majority

(67%) visited the hospital as referral cases. Most of them (74%) reported to have travelled less than 2 hours to reach the zonal hospital. Almost half of the interviewees reported to have waited for about 30 minutes to 1 hour before receiving the intended services. Random blood glucose, Blood pressure, Renal function tests and Visual assessments were done to more than 50% of the patients interviewed as shown in the table below. However, serum Cholesterol level and Glycosylated Haemoglobin test were reported to be done amongst only 20% of the interviewed patients.

Almost all (96%) of the patients reported to be satisfied with the services received, and they were of good quality. Majority of them pointed out that the current use of electronic filing system and drugs availability has greatly improved the quality of services. Notwithstanding, some patients suggested that more health care workers should be hired to address for the longer waiting time.

Attribute	Number	%
Travel time to reach the referral hospital		
Less than 2 hours	91	74.0
2-6 Hours	23	18.7
>6 hours	9	7.3
Average waiting time before accessing the services		
30 min- 1 hour	57	46.7
1-2 hours	47	38.5
>2 hours	18	14.8
Referral case		
Yes	84	67.2
No	41	32.8
Type of service/investigation taken on the visit day (during the exit interview)		
Random Blood Glucose	71	56.8
Blood Pressure	94	75.2
Cholesterol	25	20.0
Glycosylated Haemoglobin	25	20.0
Renal Function tests	63	50.4
Visual assessment	80	64.0
Foot assessment	47	37.6
Perceived quality of services		
Good	120	96.0
Poor	1	0.8
Not stated	4	3.2
Comments/suggestions given		
The services have improved with the introduction of electronic filing system	79	
More HCWs should be added to avoid longer waiting times	11	

5.6.3 Strength

- ✓ NCD care at all visited zonal referral hospitals are well established with super specialized clinics that targets NCD complications are also operational (eg Advanced medical retina, renal care, and specialized cardiac clinics)

- ✓ Majority of patients in these specialized clinics have insurance cover, and there is evidence that, services are charged against these insurance covers to ensure sustainability

5.6.4 Challenges

- ✓ Some of the trained ophthalmologists who were trained in medical retina management and use of the high tech equipment felt the need for in house retraining due to the delay of procurement and installation of advanced eye care equipment. Failure to practice the new skills for a long period of time, had made them lose confidence in managing the equipment professionally.
- ✓ The delay in installation of advanced foot care equipment has made these services redundant in all hospitals that were visited. Specialized diabetic foot care is not routinely done due to lack of appropriate equipment. However, physical examination of diabetic foot is routinely taking place in all the hospitals visited but the quality is lacking.

6. CONCLUSIONS

Based on the above findings, also taking into account methodological strength and limitations in this evaluation, the team concluded that NDP has achieved and exceeded the set expectations based on the objectives and evaluation questions mandated in this evaluation. We are now concluding as follows for the observations made in this evaluation:

6.1 Conclusions based on evaluation questions

- ✓ **Relevance:** The NDP was set to address key health problems of Tanzania population, in doing so it also addresses the sustainable development goal 3.4. Provision of juvenile, pregnant women and adult NCD care ensured the program reached all ages with need. The NDP translate the national Health Sector Strategic Plan IV 2015-2020, and the national NCD plan into actual implementation.
- ✓ **Efficiency:** NDP was implemented reaching almost all targets on time. Implementation was in the context of existing structures and infrastructures, thus maximizing efficiency. Investment in training of health care professionals and equipping health facilities is likely to have longer term sustained gains, and positive spill over to overall quality of health care.
- ✓ **Effectiveness and Impact:** There is a moderate evidence of program effectiveness on direct increase in NCD care. Data used to measure this effectiveness is secondary HMIS – DHIS that is potentially weak. However, use of this non NDP data to verify effectiveness increases veracity of achieved effectiveness. Impact on health and lifestyle of beneficiaries could not be measured. Due to the high level assessment of effectiveness, the evaluation team could not pin the observed effectiveness to a single intervention implemented in the NDP. The effectiveness therefore could only be attributed to the program as a whole.

- ✓ **Sustainability:** NDP has managed to build ownership and accountability at all levels, while at national level the Vice President of the United Republic of Tanzania champions and spearhead the national NCD 2016 – 2020 strategic plan and NCD response. At regional, councils and hospital levels, NCD interventions are strongly advocated for by the PORALG, and are incorporated and integrated in their plans. Funding for NCD remains gloomy, this threatens sustenance of current and future gains in the NCD block of diseases.

6.2 Conclusions based on WDF funding and NDP specific objectives

Specific Objective	Conclusion
SO 1: Strengthening capacity for care at district, regional and referral hospitals through training and provision of essential tools and material to enable early diagnosis and appropriate treatment.	**Specific objective 1 and 2:** NDP managed to achieve its set goal by more than 90% in strengthening capacity for provision of NCD care. However, there was concern of attrition of trained staff, furthermore, there was no evidence of direct translation from integrated curricula, training and actual integration of NCD care in HIV, TB, and Leprosy clinics
SO 2: Inclusion of specific training program on diabetes eye diseases, diabetic foot, gestational diabetes, nutrition, other non-communicable diseases (hypertension, stroke) and metabolic complications in patients with HIV/AIDS.	
SO 3: Establishing an effective referral system (where non existing) and strengthening the existing referral system so as to ensure that health care personnel at each level knows where to refer patients to the next level to decrease the level of serious/fatal complications.	NDP managed to strengthen existing referral system, partly by achieving objectives 1, 2 and 4. Where capacity of health care providers in health facilities and community were built to enable them to correctly identify, manage and refer patients to higher levels when needed. Zonal referral hospitals were equipped with machines to diagnose and manage NCD related complications, eg sophisticated eye care equipment. Foot care will be availed once cleared at customs. There was however no data specific on referrals to objectively measure this.
SO 4: Establishing linkages with the community vide community health workers and initiating community sensitization programmes.	NDP established links with communities through training of community health care workers linking health centres and communities. This objective was envisioned to increase awareness, create demand and bring life style changes. Training of CHWs was achieved by more than 95% of the set objective. However due to lack of data little is known on the effect of this objective on demand, awareness and behaviour change at population level.
SO 5: Strengthening the surveillance and the monitoring system for non-communicable diseases within the existing Health Management Information System (MTUHA) for the purpose of	Diabetes and Hypertension and NCD complication data elements were included in HMIS and are thus regularly reported. However there is a lack of standardized indicators to take advantage of these available data.

Specific Objective	Conclusion
disease surveillance, health status monitoring and health sector planning and policy-making.	
SO 6: Strengthening the NCD Section of the Ministry of Health and Social Welfare to undertake the role as overall coordinator and supervisor of the implementation of the National Strategy for non-communicable diseases and to establish partnerships to mainstream NCD activities into all relevant sectors and intervention areas through coordinated effort lead by the Ministry of Health and Social Welfare.	NDP managed to elevate NCD and establish the NDP unit within the MoHCDGEC. This has actually culminated into the development and launch of the national NCD strategic plan. The NCD unit where NDP is embedded has an Assistant Director NCDs as a head and other eight professional staff well skilled and support staff to manage the NCD program. That said, the unit need appropriate financing, working environment and support system.

7. LEARNING

- ✓ The evaluation team found that NCD awareness in the community has increased significantly. This is due to awareness and NCD screening campaigns, which were conducted under the collaborative approach with NHIF and other key stakeholders within the community such as community health workers and village leaders. Through these campaigns more cases were discovered and referred to the NCD clinics. It was learned that such an approach has resulted in early detection of NCDs and has helped the provision of interventions much earlier thereby reducing delay associated complications. Such an approach can be replicated in other regions as well.

> *"Initially patients were not being identified early but now early detection is possible through inter-sectoral collaborations and involvement of community health workers, village leaders is quite effective."*

- ✓ It was also noted that some facilities had no dedicated space for NCD clinic but instead they opted to use existing CTC clinics in alternate days. The evaluation team felt that such an innovation can be applied in other areas with limited spaces for NCD clinics.

8. RECOMMENDATIONS

Due to high level of success observed in the implementation of NDP, the evaluation team strongly recommend continuation of implementation of the program. With the following recommendations

8.1 General recommendations

1. Funding for NCD should be increased to match demand for care and prevention especially for population that cannot afford care, or cannot travel far to access care. This could be achieved by creative funding, e.g. ***Expanding AIDS trust fund to include chronic diseases, increasing insurance cover for all people through pre-financing insurance premiums (NHIF, CHF, TIKA) by the local governments.***

2. There should be an increase in scope of implementation to involve lower levels of health facilities, for example management of uncomplicated NCD cases at health centre levels, this will alleviate patient's opportunity cost related with access to care in higher and specialized health facilities, which are also prohibitive for poor beneficiaries.

3. More NCD prevention activities should be implemented and monitored, e.g. establishing physical exercise culture in work places, schools, communities and even household level.

4. There should be robust data for NCD and existing health management information system should be strengthened to address this need.

5. There is a need to build a team of supervisors at regional level who will provide supervisory and mentoring role to districts and its facilities. This will increase supervision coverage and improve prompt response and troubleshooting as NCD programs takes hold

6. The central supportive supervision should be strengthened and also the NDP should brace itself to do supervision monitoring visits as the phone communication is not sufficient to support program implementation

8.2 Recommendations specific to NDP program as per set objectives

1. Specific objective 1: NDP should assess extent of trained staff attrition, equipment versatility, availability of kits and develop mitigating strategies to protect gains in the current project.
2. Specific objective 2: In this evaluation, we did not find integration of NCD care in other chronic care clinics, eg HIV, TB and Leprosy, despite reported very successful rollout of NCD training for these staff. Further investigation is warranted to understand why this did not occur and formulate strategies for meaningful integration of services over and above curricula and training integration. In future we may need to explore the possibility of initiating centralized triaging of NCD care at other speciality clinics this intervention will widen the net in screening for NCDs risk factors and offers a robust early detection mechanism for NCDs at hospital settings. The early detection interventions should also be extended to maternal and child health clinics targeting especially pregnant women. Pregnant women with gestational diabetes are more prone to succumb to type 2 diabetes at a later stage of their lives let alone other adverse pregnancy outcomes such as hypertension.
3. Specific objective 3: Although we were able to study some level of referral strengthening, Proper documentation of how the NCD referral system works, and how the capacity strengthening of NCD clinics and communities has strengthened the referral systems need to be carried out, data on successful referrals need to be routinely captured and reported. It is highly recommended to carry out a research activity to shade evidence on this area of referral system as it is the only way to ensure complications are addressed or tamed off
4. Specific objective 4: There was evidence of increased demand and referral from communities as a result of community engagement, however there was no data to measure how many patients in care are actually referred from communities or lower health care levels. Data systems should be strengthened to also measure successful referrals of patients.
5. Specific objective 5: there was no evidence of integration or strengthening of existing HMIS to adequately capture NCD data for monitoring and surveillance. NDP should make this a priority before program closure or in the subsequent cycles of the program. Opportunity to strengthen monitoring and surveillance should be enhanced now that the national NCD strategic plan has been launched.

6. Specific objective 6: There is evidence of strengthened NCD unit and also more integration into the departments of preventive services and others, as now the NCDs are multisectoral and has been elevated to PMO's for coordination into other sectors. The linkages with the regions and districts and coordination need to be strengthened. It is highly recommended that*;* the next phase of the program needs to be more proactive. Formulate activities in the implementation plan, make funds available for engagement of the regions, districts, and other sector MDAs for supportive supervision, field visits, including involvement of the 4 Zonal Referral Hospitals. There should be meeting with the sectors and program implementers to urge them and train them how best to do supervision for the program activities

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10. ANNEXES

10.1 List of people interviewed

	EXTERNAL EVALUATION OF NATIONAL DIABETIES PROGRAM 2O16 FIELD VISITS AND EVALUATION TOOLS ADMINISTRATION			
	MANYARA			
NO	**NAME**	**POSITION**	**EMAIL**	**PHONE NO.**
1	Mabula Masunga	Reg. Nutrition Officer	mabulamasunga@yahoo.co.uk	0787 234165
2	Abdallah Hemed	Clinical Officer	mboury@yahoo.com	0658-426217
3	Beatrice Massawe	Registered Nurse	beatrugen@gmail.com	0786 645848
4	Christina Elifuraha	Registered Nurse	christineebayoo@yahoo.com	0787-476291
5	Paulo Wilson	RLS (RHMT Malaria CO)	paulginillah@yahoo.com	0768975721/ 0717-965506
6	Prosper Oscar	LAB. TECH		0763-192564
	Babati Tc – Hospital			
1	Dr. Gabriel Sono	MOI/Babati Township	gmsomo@yahoo.com	0784-618244
2	Dr. Pastary Mahendeka	AGTMO	pmahendeka@gmail.com	0758-533902
3	Tabitha Mwalituke	CO	tabithamwalituke@gmail.com	0784-664371
4	Anna Ulomi	ANO	ulomianna@yahoo.com	0784-396149
5	Dr. Emmanuel Mkony	NCD Coordinator	emkony@gmail.com	0787-255455
	Tabora			
1	Dr. Gunini Kamba	RMO-TABORA	guninik@yahoo.com	0754-344079
2	Elisha Ndakame	RDO-TABORA	ndakamael@gmail.com	0764-212407
3	Dr. Charles C. Milambo	NCD-Reg. Coordinator	wampambacharles966@gmail.com	0752-165374
	KALIUA DC			
1	Joel J. Mwangwa	TBHO	joelmwangwa@yahoo.com	0655-427526
2	Adriano S. Luhova	DMIFP	disbukunja@gmail.com	0784-231919
3	Brycbon A. Kalatwa	DHO	kalatwa@gmail.com	0784-600039
4	Esther Fredrick	ASS DIVO	esterwika95@gmail.com	0683-309431
5	Adriano Michael	CICCO	adrianomichaelco@gmail.com	0686-263211
6	Manase Jaliese	DSWO	yisambin@gmail.com	0782-300289
7	Dafroza Kabani	PLS	dajoska@gmail.com	0786-742196
8	Martin Machibya	ACCT	machibyamartin22@gmail.com	0786-742196
9	Fortunatus Ntalinda	HO	fortunatusntalindwa@yahoo.com	0782-954755
10	Richard B. Magenge	DIVO	magengerochard1@gmail.com	0784-364547
11	Mashaka M. Bukosame	DIPHARM	mashakamaliba@gmail.com	0759-864447
12	Dr. Aristicles Raphael	DMO	drasticle03@gmail.com	0755-821422
13	Rashida Rashid	AG. DNO	rashrashid89@gmail.com	0686-000918
14	Dismas Bulunja	RHCO	disbulunja@gmail.com	0752-847524
15	Ndadyelesle A. Bajora	DHISCO	agostinofidelis@gmail.com	0787-467667
16	Aziza Ernest	DLT	lyangaazizi@gmail.com	0789-265522
	BUKOBA HOSPITAL			
1	Dorosella Njunwa	RHSV	doronjunwa@gmail.com	
2	Gerase Ishengoma	AG. RHO	geraziz002@yahoo.com	0784-842737
3	John Mayala	RNCD'S CO	john.mayala54@yahoo.com	
4	Mary Kaharuki	RNO	brianmercy214@yahoo.com	
5	Dr. Ruta Chumabwa Thomas	RMO	thomruta@yahoo.com	
6	Dr. Juma D. Nyakiria	MOI/C Regional Hosp.	juma_daimon@yahoo.co.uk	
	BUKOBA MC			
1	Dr. H.A. Mugula	MMOH	hamugula@gmail.com	

2	**Linda Godfrey Said**	**Health Secretary**	**joycelinda1949@yahoo.com**	**0754-538544**
3	**Evodia Rumisha**	**DPHARM**	**evodiaruga@gmal.com**	**0784-466344**
4	**Adolphina Shumbusho**	**DRCHGO**	**shumbusho4444@gmail.com**	**0754-071686**
5	**Dr. Ester Moshi**	**DMIFP**	**moshi.ester@yahoo.com**	**0753-903799**
6	**Justin James**	**DLAB**	**amkojus@gmail.com**	**0718-089909**
7	**Neliapeace Kaimukilwa**	**MNO**	**peace.kaimukilwa@yahoo.com**	**0755-847376**
8	**Dr. David Buhenyenge**	**DACC**	**buhenyenged@gmail.com**	**0767-072395**
9	**Dr Auson Baruti**	**MDO**	**jelembianbaruti@gmail.com**	**0755-437903**
10	**Ladislaus Paul Oisso**	**MHO**	**ladislausoisso@yahoo.com**	**0784-958890**
	LINDI HOSPITAL			
1	**Dr Godian Mtwangambale**	**MO I/C**	**g-cletus@yahoo.com**	**787581669**
2	**Dr Titus Kulaya**	**MO -NCD CO**	**tkulaya@yahoo.com**	**784624934**
	LIWALE CHMT			
1	**Dr Augustino Mchopa Mnape**	**MO I/C**	**mnapeaugustine@gmail.com**	**0716192444; 785459704**
2	**Dr Kabunga Juma**	**NCD -CTC**	**kabungajuma@yahoo.com**	
3	**Dr. Maulid Majala**	**DMO**		**713734274**
		PORALG		
1	**Dr. Zainab Chaula**	**Deputy Permanent Secretary (Health)**		**0755 331 706**
2	**Dr. Ntuli Kapologwe**	**Director of Health Services (DHS)**		**0757 499 679**
3	**Rasheed Maftah**	**Director for Social Welfare**		**0715 443 803**
4	**Mwita Waibe**	**Director for Nutritional Services**		
5	**Stella Kajange**	**Environmental Officer**		**0713 055 992**
	MANAGERS AT FOUR ZONAL REFERRAL HOSPITALS			
S/N	**NAME**	**TITLE/POSITION**	**STATION**	**MOBILE**
01	Dr Honest U. Maro	Senior Consultant (Eye)	KCMC-Eye Dpt	0754480763
02	Dr.Willaim Makupa	Ophthalmologist	KCMC-Eye Dpt	0784332667
03	Rachel M.Mgeni	Resident	KCMC-Internal Med.	0767448622
04	AbidSadiq	Resident	KCMC-Internal Med.	0754965355
05	Ahlam A. Amour	Resident	KCMC-Internal Med.	0773549410
06	Dr. LevinaJ Msuya	Consultant Pediatrician Pediatric Endocrinologist	KCMC-Diabetes Dept	0754377952
07	Nashon Joel	Intern Doctor	Bugando MC	0687728384
08	Ndikumwami Rufutu	Resident	Bugando MC	0717276806
09	Andrew Lunamga	Physician	Bugando MC	0752323122
10	Neema Kayange	Pediatrician	Bugando MC	0754018337
11	Evarista Mgaya	Ophthalmologist	Bugando MC	0755922728
12	Christopher Mwanansao	Opthalmologist	Bugando MC	0767219019
13	Judith Adonis	Nurse Opthalmology)	Mbeya RH	0788065144
14	Joyce Komba	Diabetic Nurse	Mbeya RH	0756694649
15	Jacqueline Ngalula	Opthalmologist	Mbeya RH	0767612152
16	Christian Mbije	Medical Doctor	Mbeya RH	0769503643
17	Swaumu Omary Gulumo	Nurse-Diabetes	Muhimbili NH	0719811038
18	Dr Edna Majaliwa	Pediatric Endocrinologist	Muhimbili NH	0717036246
19	John S. Kisimbi	Specialist-Eye Dpt	Muhimbili NH	0689093844
20	Tatizo Karolo Waane	HOD-Cardiology	JKCI	0713607183

10.2 Data collection tools

10.2.1 Manager Consent Form

1. Introduction

Hello My Name is _____, and I am Working on behalf of MoHCDGEC, and Prof Andrew Swai who is the principal investigator of this evaluation. This evaluation is about the national diabetes program. The National Diabetes Program is an integral part of the overall implementation of the Strategy for Non Communicable Diseases 2009 – 2015 that includes diabetes, cardiovascular disease and other chronic diseases. In 2008, the Tanzania Ministry of Health, Community Development, Gender, Elderly and Children (MOCDGEC) developed the National strategy for Non Communicable Diseases in recognition of the emerging importance of this cluster of diseases. The Goal of the NCD strategy is to reduce the burden of NCD on the Tanzanian people and the health system by taking integrated action to have a society with good health and an environment effectively contributing to individual and national development. The overall objective is to reduce the prevalence of NCD risk factors and their underlying determinants, and to strengthen the health system to reduce the impact of Non Communicable Diseases and Conditions on morbidity and mortality, thereby improving the general health status of the population.

Today I am approaching you because the implementation of the National Diabetes Program has come to an end, and we are therefore evaluating it. If it is ok with you and that you want to participate, I will spend some time to take you through a process of informed consent.

Do you agree to participate?

1. Yes (Proceed with informed consent process)
2. No, thank the participant, and fine another participant.

2. Purpose

The purpose of this evaluation is to assess whether the National Diabetes program reached its intended objectives. Findings from this evaluation will enable the Ministry and other stakeholders to understand the extent of success, and the reasons behind the success or failure. This information will also be valuable in designing and implementing future programs.

3. Procedures and confidentiality

We will conduct an interview with you, our conversations will be tape recorded, for the easy of data processing and future use. We will not collect any information that can identify you. We will not use your name in the analysis or communication of our final findings. No one apart from the evaluation team will have access to the audio files of the interview. However, transcripts will be made available to the ministry and stakeholders who would wish to access these data, but after permission from relevant authorities (NIMR).

4. Benefits

You will not benefit directly by participating in this evaluation, however the information you make available will inform us to understand the extent of success and reasons of success or failure of the national diabetes program. This information is valuable in future programming.

5. Cost

There is no cost or compensation from your participation in this evaluation

6. Right to refuse or to withdraw

Your participation is totally voluntary, you can withdraw from the study at any time when you feel so, your withdrawal will not affect your employment, or work related benefits in any way.

7. Questions

If you have any questions or concerns about this evaluation, you can ask me now or you can contact our office or Dr. Andrew Swai at +255 ***(Insert Phone number)*** or ***(Insert email address)*** at any time.

8. FREE AND INFORMED CONSENT

1. I have read all the pages of this consent form. The team involved in the evaluation gave me all the information regarding the procedures of the evaluation. I had the opportunity to ask questions, and my questions were answered satisfactorily. I was given enough time to carefully consider the information received and decide to participate or not.
2. My participation in this evaluation is entirely voluntary and I can decide to participate or refuse. If I participate I can at any time withdraw, without any kind of repercussion to my employment.
3. I will receive an original of this consent after signed and the investigators will keep another original.
4. I understand that I am not giving up my legal rights in signing this consent.

My signature below indicates that I voluntarily agree to participate in this evaluation.

I have been given a copy of this consent form to keep.

Authorizing officer's Name (please print) Date

Authorizing officer's Signature Date

Person Obtaining Consent: Date

10.2.2 Interview guide; Program implementers

Instructions: Find a quiet place with privacy to conduct the interview.

Introduction

Hello, as I introduced to you in the introduction, the purpose of this evaluation is to understand the success of the National Diabetes Program; now we can start our discussion. I am going to start by asking you a question, please if you do not understand ask me to clarify it for you.

Overall understanding of the National Diabetes Program, Relevance and its implementation

1. What were the reasons for starting the National Diabetes Program?
2. Was there involvement of the beneficiaries (People living with Diabetes)?
3. How were they involved?
4. Were the planning of the activities and intervention under the program influenced by the beneficiary wishes?
5. What were the things/activities program planned to do to achieve the set goals?

Efficiencies

6. Can you tell me how those activities were done? (Probe for training, supply of equipment, awareness campaigns etc). Probe for activities at national level eg policies for NCD, data availability, advocacy etc.
7. Who were the beneficiaries?
8. How did you verify that the beneficiaries were reached with the proposed activities? (Probe about more activities)

Effectiveness and learning

9. What was the most satisfying thing to you while implementing those activities/program? (Refer to a specific activity under discussion)
    a. Did you do anything different from how you planned in the first place?
    b. What were the reasons of the change in the approach?
10. How did you assess whether the activities had an effect on the targeted people?
    a. Did you follow up to see if clinics started providing diabetes care?
    b. How was the quality before the program? Ask for specific examples of improved quality, eg provision of tests that were not there before, added examinations eg, eye and foot care, medicines availability etc
    c. How was it after the program? Ask for specific examples of improved quality, eg provision of tests that were not there before, added examinations eg, eye and foot care, medicines availability etc

Sustainability and Impact

11. In places where you implemented the activities, are the services still on-going? (Probe if there is a change after stopping central support)
    a. Ask if the hospitals assumed the responsibilities of ensuring sustained care provision (On job training to other staff, Supplementing by buying more equipment, drugs, increasing the frequency of clinic days, Increase of clients, etc)
    b. Ask if there are other areas where program is leveraging resources, (From national level to community level, i.e, integrating with other programs, budget allocations, health insurance etc.)
12. Are you aware of the magnitude of diabetes disease in your area? (Hint: Can be national, regional, district, or catchment area of the health facility)
    a. Is the burden changing? (Increasing or decreasing) (Probe for people becoming diabetic, probe for people developing complications)
    b. How is the program contributing to mitigating these? (Ask for specific examples, of ask the interviewee to point evidence suggestive of program effect on reducing the burden)

Is there any additional information you would like to share?

Thank the participant and end the interview.

10.3 Summary of interview scripts

LINDI REGION:

REPORT-INTERVIEW: HMT, CHMT, RHMT- Liwale District Council

1. Overall understanding of the National Diabetes Program, Relevance and Its Implementation

- Interviewed member of CHMT responded that they are aware of NCD program and they were involved during its implementation.
- CHMT members pointed out that the goal of NCD program is to reduce morbidity, mortality and suffering.
- NCD program at Council level is implemented as among priority area interventions for budgeting within CCHPs. There is also an appointed member within CHMT technical committee to overseas and coordinate all issues related to NCDs.
- National Diabetes Program in particular is well known to individuals who were directly linked to the program during implementation phase through trainings, sensitization meeting and support in establishment of Diabetes Clinic.
- Diabetes program came about as a result of increase in burden of NCDs, Co-morbidity with HIV/AIDS, change in epidemiological trends for affected individuals,
- Key activities that were implemented include health education, dietary counselling, treatment and care to individuals with illness, establishment and equip Diabetes clinic with necessary medical equipment and trainings that was conducted to 9 staff.
- Liwale do conduct NCD clinic in every week on Wednesday as a result of support from National Diabetes program.
- Despite success during implementation of Diabetes program, managers and implementers pointed out that there are areas that needs to be strengthened/improved as follows:
    - ✓ To ensure constant availability of Glucometer strips and medicine. These items are missing most of the time are at MSD.
    - ✓ More officials needs to be trained especially Medical Officer In charge of the District Hospital, Pharmacist, Laboratory Technologist/Scientist and more Clinician.
    - ✓ Number of days for Training Clinicians need to be revisited and participant to be provided with Certificate as part of Continuous Professional Development. The training that was conducted to Clinician took only 3 days and no certificate was provided

2. **Efficiencies**

- Through organized NCDs Clinic, patients are treated timely based on appointment during clinic day conducted on every Wednesday per Week.
- In order to maximize utilization of resources during Awareness Campaign for CHF. NHIF in collaboration with the District Council conducted also screening for NCDs.

- Using available trained resources for NCDs other District Hospital staff were trained through Continuous Professional Development conducted at the Hospital in every Thursday.

3. Effectiveness and Learning

- The program resulted in:
    - ✓ More organization of management of patients through established NCD clinic in every Wednesday.
    - ✓ Development of system to capture data.
    - ✓ Improved services through equipping established Diabetes Clinics with necessary medical equipment.
    - ✓ Availability of Treatment guidelines, health education posters and leaflets.
    - ✓ Increasing quality of care (Proper diagnosis and Treatment) provided through trained medical staff and availed diagnostic medical equipment.
    - ✓ Community awareness for testing and control of NCDs.

4. **Sustainability and Impact**

- Integration with other activities supported by NHIF. During CHF sensitization meetings health education and screening for NCDs was conducted.
- Integration with other clinics such as CTC clinic. Health education and care to HIV/AIDS patients.
- Budgeting within CCHPs as among priority area interventions.

5. Others issues

- The team that was interviewed recommended that:
    - ✓ There is a need for Program staff to communicate frequently with the implementers to ensure smooth running/implementation of activities.
    - ✓ Commodities for Diabetes are most of the time missing at MSD. The program needs to facilitate its availability at MSD similar to the practice conducted by TFNC to ensure availability of Nutrition supplements.
    - ✓ The program needs to plan and conduct supportive supervision and monitoring visit.
    - ✓ The project that supports availability of Insulin to patients less than 18 years need to expand its support to other patients who cannot afford the treatment cost.

MANYARA REGION:

INTERVIEW: LEADERS, AND POLICY MAKERS - Manyara region (RMO)

Overall understanding of the National NCD prevention: Policies, Strategies and Programs

- Interviewed Leader responded that he is aware of National Non-Communicable Diseases Control efforts and the goals, i.e., to reduce morbidity, mortality and suffering.
- The efforts came about as a result of increase in burden of NCDs compared to the traditional infectious diseases.
- The policies, strategies and programs are implemented within existing system with the region roles in interpretation of policies and coordination of implementation within the Local Government Authorities.
- Financing is through budgeting within CCHPs.
- Challenges to realize Non-Communicable Diseases Control efforts include financing and lack of awareness within the community and leaders.
- Mitigating strategies include: looking for more partners to support, strengthening complimentary financing, community empowerment, awareness campaign at different levels with involvement of everybody within the health sector and advocacy to leaders.

REPORT-INTERVIEW: RRHMT, RHMT - Manyara

1. Overall understanding of the National Diabetes Program, Relevance and Its Implementation

- Interviewed member of RHMT & HMT responded that they are aware of NCD program and they were involved during its implementation.
- NCD program interventions at Regional Referral Hospital level are budgeted within CHOP.
- National Diabetes Program in particular is well known to individuals who were directly linked to the program during implementation phase through trainings, sensitization meeting and support in establishment of Diabetes Clinic.
- Diabetes program resulted due to changes in epidemiological trends with increasing burden for NCDs.
- Diabetes program came about for the purpose of early detection, prevention and treatment for those who are affected. In addition through the program data can be generated for decision making during planning.
- Key activities that were implemented include health education, screening, Outreach services conducted by NCD coordinator to Magugu, Katesh and Hanang, treatment and care to individuals with illness, establishment and equip Diabetes clinic with necessary medical equipment and training.

- Manyara Regional Referral Hospital do conduct NCD clinic twice per week on Tuesday and Wednesday as a result of support from National Diabetes program.
- Despite success during implementation of Diabetes program, managers and implementers pointed out the following key challenges:
    - ✓ Patients do buy their own medicine due to unavailability at MSD.
    - ✓ Unavailability of E.C.G and Funduscopy machine at the Hospital.
    - ✓ Shortage of Glucometer strips at MSD.
    - ✓ Some of the officials were not included in the training that was conducted by TDA i.e., Medical Officer In charge, Hospital Pharmacist, Laboratory Technologist/Scientist and Nutrition officer.
    - ✓ Additional set of medical equipment similar to those supplied to the Diabetes clinic need to be made available in wards (IPD).

2. **Efficiencies**

- Through organized NCDs Clinic, patients are treated timely based on appointment during clinic day conducted on twice per week.
- Using available trained resources (human resource) for NCDs other Regional Hospital staff were trained through Continuous Professional Development conducted at the Hospital in every Tuesday.
- Could not be able to conduct commemoration of World Diabetes Day. It was rescheduled to be conducted at the end of the month due to unavailability of financial resources.

3. Effectiveness and Learning

- The program resulted in:
    - ✓ Community awareness for testing and control of NCDs. Many people were screened and some of them diagnosed with NCDs.
    - ✓ More organization of management of patients through established NCD clinic twice per week in every Tuesday and Thursday.
    - ✓ Development of system to capture data.
    - ✓ Improved services through equipping established NCD Clinic with necessary medical equipment.
    - ✓ Availability of Treatment guidelines, health education posters and leaflets.
    - ✓ Increasing quality of care (Proper diagnosis and Treatment) provided through trained medical staff and availed diagnostic medical equipment.

4. **Sustainability and Impact**.

- Explore additional financial/material support from Mobile companies, financial institutions, NHIF and influential businessmen.
- Budgeting within CHOP.

- Starting patients Clubs/Organization to support each other through peer learning and financial resources to procure back up medical supplies.

5. Others issues

- The team that was interviewed recommended that:
    - ✓ There is a need for more refresher trainings.
    - ✓ Commodities for Diabetes are most of the time missing at MSD. The program needs to establish a backup system to ensure constant availability of medicine and supplies.
    - ✓ NCDs activities need to be integrated during other commemoration days such as Malaria, AIDS etc.

REPORT-INTERVIEW: HMT, CHMT – Babati Town Council

1. Overall understanding of the National Diabetes Program, Relevance and Its Implementation

- Interviewed member of CHMT responded that they are aware of NCD program and they were involved during its implementation.
- CHMT members pointed out that the goal of NCD program is to reduce morbidity, mortality and suffering.
- NCD program at Council level is implemented as among priority area interventions for budgeting within CCHPs. There is also an appointed member within CHMT technical committee to oversee and coordinate all issues related to NCDs.
- National Diabetes Program in particular is well known to individuals who were directly linked to the program during implementation phase through trainings, sensitization meeting and support in establishment of Diabetes Clinic.
- Diabetes program came about as a result of increase in prevalence of NCDs.
- Key activities that were implemented include health education, dietary counselling, treatment and care to individuals with illness, establishment and equip Diabetes clinic with necessary medical equipment and trainings to staff.
- Babati TC do conduct NCD clinic in every week on Thursday at CTC clinic.
- Managers and implementers pointed out that there are challenges that hinder success in implementation of Diabetes program as follows:
    - ✓ Clients do not receive medicine.
    - ✓ Shortage of trained staff. More staff needs to be trained especially (1Nurse, 2 Clinician, Pharmacist and Lab technologist).
    - ✓ The clinic at the District Hospital is overworked due to lack of services at the satellite Health Centers. There is a need to establish services in high volume health Centers (EmoNC compliance).
    - ✓ Inadequate budget.

2. **Efficiencies**

- Through organized NCDs Clinic, patients are treated timely based on appointment during clinic day conducted on every Thursday per Week.
- Due to limitation of infrastructure. CTC clinic is used once per week to take care of NCD clients.

3. Effectiveness and Learning

- The program resulted in:
  - ✓ Increasing quality of care (Proper diagnosis and Treatment) provided through trained medical staff and availed diagnostic medical equipment.
  - ✓ Around 2013/14 some of the staff participated in NCD training in Arusha and came back with skills, Registers, and medical equipment to establish Diabetes Clinic. Before the clinic was there but not very active.
  - ✓ Community awareness for testing and control of NCDs.
  - ✓ Establishment of point of referral from other areas with inadequate capability to take care of NCDs patient.

4. **Sustainability and Impact**

- On job training
- Budgeting within CCHPs as among priority area interventions.

5. Others issues

- The team that was interviewed recommended that:
  - ✓ Diabetes Program focus was more curative than preventive. The program needs to focus also in preventive services.
  - ✓ Commodities for Diabetes are most of the time missing at MSD. The program needs to establish a backup system.
  - ✓ The program need to ensure care for patients with complication resulted from Diabetes such as Eye and foot care and also periodontal diseases.
  - ✓ WHO common risk factor approach should be utilized in control of NCDs

TABORA REGION:

INTERVIEW: LEADERS, AND POLICY MAKERS-Tabora region (RMO)

Overall understanding of the National NCD prevention: Policies, Strategies and Programs

- Interviewed Leader responded that he is aware of National Non-Communicable Diseases Control efforts and the goals, i.e. to reduce morbidity, mortality and suffering.
- The policies, strategies and programs are implemented within existing system. The roles at the regional level are to interpret policies from the Ministry of Health and coordinate its implementation.
- NCD control efforts came about as a result of increase in burden of NCDs.
- Financing is through budgeting within CCHPs.

- Financing NCDs through own source is difficult due to exemption policy.
- The initiatives to give patients insulin ≤ 18 years free of charge need to be revised to accommodate other patients who cannot afford the treatment cost
- Challenges to realize Non-Communicable Diseases Control efforts include; More efforts is done to communicable diseases, little is invested in NCDs, majority of development partners do not support financing NCDs.
- Mitigating strategies include: advocacy to development partners and top level Political Leaders to support NCDs control efforts, community empowerment, awareness campaign using local radios & TV and explore additional support from NHIF, Companies and Financial institution.
- There is a limited infrastructure to establish a separate NCD clinic. Similar models to CTC should be explored.
- Conducive infrastructure to support outdoors games, exercise, jogging and cycling need to be developed. Dodoma as a Capital City can be developed to become an example city.
- In order to make efforts to combat NCDs a reality Top government leaders need to be involved in awareness campaign and sensitization.

REPORT-INTERVIEW: RRHMT, RHMT - Tabora

1. Overall understanding of the National Diabetes Program, Relevance and Its Implementation

- Interviewed member of RHMT & HMT responded that they are aware of NCD program and they were involved during its implementation.
- Key activities that were implemented include health education, screening, treatment and care to individuals with illness, establishment and equipping Diabetes clinic with necessary medical equipment and training that was conducted to 12 staff. All trained staffs are still working in the Hospital.
- Kitete Regional Referral Hospital do conduct NCD clinic twice per week on Tuesday and Wednesday as a result of support from National Diabetes program.

2. **Efficiencies**

- Through organized NCDs Clinic, patients are treated timely based on appointment during clinic day conducted on twice per week.
- Could not be able to conduct commemoration of World Diabetes Day this year. They plan to commemorate next year.

3. Effectiveness and Learning

- The program resulted in:
    - ✓ Community awareness for testing and control of NCDs.
    - ✓ More organization of management of patients through established NCD clinic twice per week in every Tuesday and Thursday.

- ✓ Improved services through equipping established NCD Clinic with necessary medical equipment.
- ✓ Availability of Treatment guidelines, health education posters and leaflets.
- ✓ Increasing quality of care (Proper diagnosis and Treatment) provided through trained medical staff and availed diagnostic medical equipment.

4. **Sustainability and Impact**.

- Explore additional financial/material support from Mobile companies, financial institutions, NHIF and influential businessmen.
- Budgeting within CHOP.
- Starting patients Clubs/Organization to support each other through peer learning and financial resources to procure back up medical supplies.

REPORT-INTERVIEW: HMT, CHMT – Kaliua District Council

1. Overall understanding of the National Diabetes Program, Relevance and Its Implementation

- Interviewed member of CHMT responded that they are aware of NCD program and they were involved during its implementation.
- CHMT members pointed out that the goal of NCD program is to reduce morbidity, mortality and suffering.
- NCD program at Council level is implemented as among priority area interventions for budgeting within CCHPs. There is also an appointed member within CHMT technical committee to overseas and coordinate all issues related to NCDs.
- National Diabetes Program in particular is well known to individuals who were directly linked to the program during implementation phase through trainings, and sensitization meeting.
- Diabetes program came about as a result of increase in prevalence of NCDs.
- Key activities that were implemented include health education, dietary counselling, treatment and care to individuals with illness, provision of medical equipment and trainings to staff.
- Beneficiaries were involved during program implementation through trainings and participation in planning sessions that involves Health facility governing committees and Council Health Service Body.
- Managers and implementers pointed out that there are challenges that hinder success in implementation of Diabetes program as follows:
  - ✓ Provided medical equipment through Diabetes program are not enough due to increase in burden of NCDs.
  - ✓ Provided guidelines through Diabetes program are not enough, they were supplied up to the level of Health Centre. More guidelines are needs to be distributed to the level of Dispensaries.

2. **Efficiencies**

- Kaliua DC do not have a District Hospital. NCD Services are conducted at Kaliua Health Centre integrated within other services offered at OPD. No special day for clinic or dedicated room for NCD clinic.
- Verification for services provided to Beneficiaries is done through data captured in HMIS monthly from Health facilities.

3. Effectiveness and Learning

- The program resulted in:
  - ✓ Increasing quality of care (Proper diagnosis and Treatment) provided through trained medical staff and availed diagnostic medical equipment.
  - ✓ Awareness creation.

4. **Sustainability and Impact**

- On job training
- Budgeting within CCHPs as among priority area interventions.

5. Others issues

- The team that was interviewed recommended that:
  - ✓ Trainings should be extended to Dispensary level.

KAGERA REGION:

INTERVIEW: LEADERS, AND POLICY MAKERS - Kagera region (RMO)

Overall understanding of the National NCD prevention: Policies, Strategies and Programs

- Interviewed Leader responded that he is aware of National Non-Communicable Diseases Control efforts and the goals, i.e. to reduce morbidity, mortality and suffering.
- NCDs emerge as a result of change in lifestyle, unhealthy eating habits and physical inactivity.
- The policies, strategies and programs are implemented within existing system with the region roles in interpretation of policies and coordination of implementation within the Local Government Authorities. RHMT monitor implementation of program activities quarterly through assessment of CCHPs.
- Financing is through budgeting within CCHPs. Other projects (AMREF & MDH) exist to support Screening for Cervical and Prostate Cancer.
- Regional Commissioners play important part in sensitization and awareness creation. The region has a special day (every Saturday from 12.30 am) where all people are required to participate in doing physical exercise.
- Challenges to realize Non-Communicable Diseases Control efforts include:

- ✓ Inadequate staff (Specialist). There is a need to encourage young Medical Doctors to attend postgraduate training to strengthen capability in care to NCDs affected individuals.
- ✓ Most of the partners concentrate in supporting HIV/AIDS and Maternal and Child Care.
- ✓ Inadequate infrastructure.
- ✓ Low awareness within the community and health care providers.
- ✓ Limited budget allocated to NCDs. More emphasis is given to Communicable diseases. There is a need to set certain level (%) of the budget within CCHPs for NCDs.

- Mitigating strategies include: looking for more partners to support NCDs, Ensure Universal Health Insurance coverage, community empowerment, awareness campaign at different levels with involvement of everybody within the health sector, advocacy to leaders, policy review for exemption policy and priority should be done to individuals with Chronic diseases to access Single National Health Insurance coverage.

REPORT-INTERVIEW: RRHMT, RHMT - Kagera

1. Overall understanding of the National Diabetes Program, Relevance and Its Implementation

- Interviewed member of RHMT & HMT responded that they are aware of NCD program.
- The region has an appointed NCD Coordinator.
- NCD program interventions are budgeted within CCHPs.
- National Diabetes Program in particular is well known to individuals who were directly linked to the program during implementation phase through trainings, sensitization meeting and support in establishment of Diabetes Clinic. RHMT member who participated in sensitization meeting did not share the information to other members.
- Diabetes program came about for the purpose of early detection, prevention and treatment for those who are affected. In addition through the program data can be generated for decision making during planning.
- Key activities that were implemented include health education, screening, treatment and care to individuals with illness, establishment and equipping Diabetes clinic with necessary medical equipment and training. The program was communicating with Individuals who were involved directly in implementation.
- Kagera Regional Referral Hospital do conduct NCD clinic twice per week on Tuesday and Friday as a result of support from National Diabetes program.
- Despite success during implementation of Diabetes program, managers and implementers pointed out the following areas for improvement:
  - ✓ To strengthen reporting system, analysis and feedback.

- ✓ Sensitization meetings need to be conducted in respective regions in order to have more representation.
- ✓ The program needs to follow official channels during communication.
- ✓ The program needs to ensure availability of medicine and diagnostic supplies at MSD.

2. **Efficiencies**

- Through organized NCDs Clinic, patients are treated timely based on appointment during clinic day conducted twice per week. One day is for Hypertension and the other day is specific for Diabetes patients.

3. Effectiveness and Learning

- The program resulted in:
  - ✓ Community awareness for testing and control of NCDs.
  - ✓ More organization of management of patients through established NCD clinic twice per week in every Tuesday and Friday.
  - ✓ Improved services through equipping established NCD Clinic with necessary medical equipment.
  - ✓ Availability of Treatment guidelines, health education posters and leaflets.
  - ✓ Increasing quality of care (Proper diagnosis and Treatment) provided through trained medical staff and availed diagnostic medical equipment.
  - ✓ Improvement in care for complication resulted from Diabetes-Eye and foot care.

4. **Sustainability and Impact**.

- Explore additional financial/material support from Mobile companies, financial institutions, NHIF and influential businessmen.
- Budgeting within CHOP and CCHPS.
- Awareness creation using local radio and TV.
- Starting patients Clubs/Organization to support each other through peer learning and financial resources to procure back up medical supplies.

5. Others issues

- The team that was interviewed recommended that:
  - ✓ Subsidies to be provided by central government to cover cost for purchasing medicines and supplies at MSD.
  - ✓ The next program should support Type II Diabetes patients' diagnostic devices and medicine.

REPORT-INTERVIEW: HMT, CHMT – Bukoba Municipal Council

1. Overall understanding of the National Diabetes Program, Relevance and Its Implementation

- Interviewed member of CHMT responded that they are aware of NCD program.
- NCD program at Council level is implemented as among priority area interventions for budgeting within CCHPs.
- National Diabetes Program in particular is well known to individuals who were directly linked to the program during implementation phase through trainings, sensitization meeting and support for medical equipment.
- 10 staff were trained. 4 staff already retired. More staff needs to be trained specifically NCD coordinator, Dental clinic staff, MTUHA focal person and Health Officers.
- Bukoba MC do not have a District Hospital. They screen patients in Health Centers and refer them to Regional Referral Hospital.

DISCUSSION GUIDE: LEADERS, AND POLICY MAKERS

Interviewee:

1. Deputy Permanent Secretary (Health) – **Dr. Zainab Chaula** Tel: 0755 331 706
2. Director of Health Services (DHS) – **Dr. Ntuli Kapologwe** Tel: 0757 499 679
3. Director for Social Welfare – **Rasheed Maftah** Tel: 0715 443 803
4. Director for Nutritional Services – **Mwita Waibe** Tel:
5. Environmental Officer – **Stella Kajange** Tel: 0713 055 992

QN. 4

a. Overall understanding of the National NCD Prevention: Policies, Strategies, Programs

- Though the PORALG health section is fairly new but is aware of the National NCD prevention, policies, strategies and programs that are involved.
- As Tanzania moves from the poor country to middle income country life expectancy increases and so also is the diseases burden especially the age related diseases. As a country we need to be prepared in terms of having enough health care providers and infrastructure in place. We should also aim at increasing the health expenditure to match the Abuja declaration targets of 15% of each country budget dedicated for health provision.
- More investment is needed in the health infrastructure as well as efforts aimed at improving coordination as a country. Currently, various stakeholders contribute to the health financing but lack of coordination renders these contributions not being captured in the overall financing framework. If these contributions are captured properly we may found ourselves exceeding the 15% of country budget allocated for health as set out in the Abuja declaration.

- As a country we also need to take charge of our own plans to alleviate the challenges that we face.

b.

- The NCD Strategic plan and Action plan was launched in 19th October 2016, while the implementation of activities was officially inaugurated by the Deputy Vice President of the United Republic of Tanzania Mama Samia Suluhu Hassan in Dar es Salaam on the 17th December 2016.
- The national nutritional Multisectoral committee is present but as we progress towards economic ladder the risks increases hence the need to look at NCDs components within the nutritional aspects in order to avert health risks.
- Multisectoral committee should be led by PS Health and PS POLARG and not PMO.
- Multilevel coordination is very important because what we care is the community. This will help in reducing a lot of bottlenecks and challenges.
- Gaps are there especially in the human resource
- Need to have direct facilities accounts.
- CHF to be coordinated by POLARG and not MoH

c.

- There is a need to successfully implement the D by D as indicated in the MAM plan.
- All parallel efforts need to be removed between the Ministry of Health and President Office Regional Administration and Local Government. Currently there is confusion in the implementation of the health activities. MoH should remain with policy and guidelines and PORALG should implement those policies and guidelines. Technical supervision of the health facilities should be coordinated between MoH and PORALG.
- Implementation is at the lower level for both promotional, preventive, curative and rehabilitation services. CCHPs have NCD components from basket funds and the plans in the CCHPs reflect the locality pressing needs. DHIS data are currently being used in the planning of the council requirement for specific diseases budget.

Qn. 5.

What is level of political commitment, leadership and the governance issues?

- PORALG is committed 100% politically, in leadership and governance. Currently all leaders within the Ministry are talking on the same level. But in order to sustain and spread this commitment to the lower levels we need a working motivational system at work places. This will motivate people to stay at their workstations instead of chasing out for per diems at the various workshops and meetings.
- Need to have continuum of care

Qn. 6.

We all know managing NCDs require functional and robust health system.

a. All stakeholders are involved in the financing of inputs. The government role is only to coordinate all these activities. Funds obtained need to be accountable and distributed to each station accordingly such as LGA and Coordination. And should be reported on time.
b. There is also a need to have mixed skills and those who are committed and experienced
c. Enabling environment is there other sectors are also actively involved in implementing NCD awareness activities. For instance there are plans in place to close the infrastructure gap in Dodoma as the capital shifts to Dodoma. Master plan for Dodoma is there since 1974, it needs to be reviewed to fit the current situation.

d. This has been covered above.

Ministries need to work together and the responsibilities of each one to the fight against NCDs should be clearly stated.

7. **What do you think to be the challenging issues for NCDs Efforts (infrastructure, governance, accountability, engagement of the key actors and Development Partners)?**

- Time management as we need to see it happening now (efficiency)
- Partners have their own priorities apart from local needs. PORALG will not allow implementation of projects by partner without following laid down PORALG strategic plan. There is also a need to discourage top down approach, donors should accept advice from local partners and follow down up approach.
- There is a need for coordinated approach between ministries to improve efficiencies and coordination.
- Other challenges are in the area of time management and staff shortages which all-together impact on efficiency.
- Challenge on how to improve performance in human resource

8. **NCDs cut across many sectors – success needs Multisectoral approach; what are your strategic moves to engage and galvanize support of the other sectors?**

- Donors who need to support us should buy in from our strategic plans this will avoid confusion and parallel efforts.

9. **What should be done to make NCD prevention and control a reality?**

- The Government has already launched the program for NCD awareness activities. The efforts are being implemented all over Tanzania.
- Dodoma should be an example of physical activities standard infrastructures

AOB. **Is there any additional information you would like to share to improve the evaluation of this program?**

- The government should enforce the habit of having good ethics, behaviour and culture of hardworking for its people.