ADDIS ABABA UNIVERISITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

EVIDENCE BASED ASSESSMENT OF A STRATEGY TAILORED FOR PREVENTION AND CONTROL OF CHRONIC ILLNESS IN SELECTED HEALTH CENTERS ADDIS ABABA, ETHIOPIA: PURELY QUALITATIVE STUDY DESIGN

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A Research thesis to be submitted to the college of Health Science, School of Public Health in partial fulfillment of the requirements for the Master of Public Health in Health System Management.

Addis Ababa, Ethiopia

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Declaration

Her by I declare that, this thesis is my original work and to my best of knowledge it has not been presented for any degree in Addis Ababa University or any other Universities for an academic award, and that all sources of materials used for the thesis have been dully acknowledged.

Advisor's Approval Sheet

This is to certify that the Thesis prepared by Andualem Tamene, entitled: Evidence-Based Assessment of a Strategy tailored for prevention and control of Chronic Illness in selected health centers Addis Ababa, Ethiopia: Purely Qualitative study design, and submitted in partial fulfillment of the requirements for the Degree of master of public health "specialty in Health System Management" and the regulations of the University was come across with the accepted standards with respect to originality and quality.

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List of Abbreviation and Acronyms

ACIC	Assessment of Chronic Illness Care
CA	Cancer
CCM	Chronic Care Model
CSA	Central Statistics Agency
CVD	Cardiovascular Disease
DM	Diabetes Mellitus
FMOH	Ethiopia Federal Ministry of Health
GBD	Global Burden of Disease
GP	General Practitioner
HPT	Hypertension
NCDs	Non-Communicable Diseases
NGO	Non-Governmental Organization
PEHHAI	Psi Ethiopia Healthy Heart Africa initiative
PHC	Primary Health Care
PI	Principal Investigator
RHB	Regional Health Bureau
SSA	Sub-Saharan Africa
SWOT	Strength Weakness Opportunity Threat
USA	United States of America
WHO	World Health Organization

ABSTRACT

Background: The rising burden of chronic illness represents major challenges for our current health-care systems. Generally, our current health care system mainly focuses on an acute care management and short-term goals; particularly our Primary Health Care System, which is uninformed, fragmented, and poorly coordinated to meet the needs of chronically ill patients. This study proposes the use of Chronic Care Model (CCM) which is a systematic; an evidence-based framework for improving chronic illness care in primary health care setting, but little is known and the potential benefits of doing so were missed.

Objective: This study aims to describe the extent to which Addis Ababa City Administration primary health care system supports for chronic illness care with the Wagner Chronic Care Model and identify any strengths, weaknesses, barriers, and opportunities in the health care management practice to improve health outcomes.

Methods: Institution based cross-section survey was conducted in selected Addis Ababa City public health centers tailored for prevention and control of chronic illness by the government model. Using the CCM as a framework, face to face open-ended interview with health center staff were conducted to describe the extent to which it's consistent& identify successes and barriers that influence a successful uptake in the primary health care system. Data were collected qualitatively using semi structured interview questioner in relation to version 3.5 of the ACIC scale, and organized with a SWOT analysis matrix. An analysis was by computer aided qualitative data analysis software open code.

Results: Chronic care tailored health centers developed little to basic stage of support and had distinct areas of Strengths and weaknesses in each six component of the system: 1) organizational support - strengthened by working together with partner (Psi-Ethiopia Healthy Heart Africa initiative), established performance monitoring team and provides training in disease management, but weakened by lack of explicit chronic care goals, was not reflected in their business plan and there is also a lack of funding to support activities related to chronic illness care; 2) community linkages- strengthened by established community visiting team (Family health team),but detracted by lack of participation of community-based organizations, less priorities chronic disease care in their care plan and poor sense of program ownership by health managers; 3) self-management-promoted through one to one patient education and risk factor assessment for clients, but impeded by limited focus on family and community-based educational activities and seldom set goals with clients for assessed need; 4) decision support-facilitated by distribution of clinical guidelines and their integration with daily care, but limited by inadequate access to and support from specialists; 5) delivery system design-strengthened by appointment of designated chronic disease coordinators, effective teamwork and provision of clinic rooms, but weakened by lack of defined roles and responsibilities to heath care workers in relation to chronic illness care and suffered from a shortage of staffs especially doctors, behavioral health professional, case manager and counselors; 6) clinical information systems-strengthened by easily accessible, organized patient records, recalls and timely feedback but, limited by lack of computerized systems adoption and capacity to supply population-based information for quality of chronic illness care.

Conclusion: This study identified several strengths and weaknesses and determined the extent to which we handled a chronic illness care by using standard protocol, a CCM framework which might be useful in assessing and guiding development of system for improvement of chronic care in primary health centers. An adaptation of the CCM model may serve as a template for future health care system redesigning & help to improve access to quality and effective health care services especially in primary healthcare.

1. INTRODUCTION

1.1 Background

Non-communicable diseases (NCDs) are noninfectious health conditions typically caused by genetic and/or environmental and lifestyle factors. As NCDs tend to be long-lasting or recurrent, they are sometimes also referred to as chronic diseases [1]. As World Health Organization (WHO), Global status report on non-communicable diseases 2014NCDs account for almost two-thirds of deaths globally. Four major chronic non-communicable diseases which account for the majority of deaths from NCDs are defined by the WHO as cardiovascular diseases (CVD), diabetes, chronic respiratory diseases, and cancer. This grouping of chronic NCDs based on their association with common shared risk factors: harmful use of alcohol, tobacco use, physical inactivity and unhealthy diets [2].

Mortality and morbidity from NCDs constitute major challenge for development in the 21stcentury. More than 36 million people die annually as a result of NCDs, including 15 million people who die too young-between the ages of 30 and 70. The burden continues to rise disproportionately in low- and lower middle-income countries while in all countries, these deaths disproportionally affect the poorest and most vulnerable. The majority of premature NCDs deaths in this 30-70 age groups are the result of the four main non-communicable diseases: cardiovascular disease, cancer, diabetes and chronic respiratory disease [3].

Now day's the rise of NCDs represents major challenges for actual health care systems. Generally current health care system mainly focuses on a traditional acute care management and short-term goals. In particular Primary Health Care delivery system especially in low-lower Middle-Income countries is uninformed, fragmented, and poorly coordinated to meet the complex needs of chronically ill patients [4]. Many of the interventions to address this within primary healthcare settings are based on a chronic care model first developed by McColl Institute for Healthcare Innovation at Group Health Cooperative, commonly called the Wagner Chronic Care Model (Wagner CCM) [5].

The recent WHO 2018 NCDs country profile report indicated NCDs related death rate in Ethiopia accounts for 39%, of this cardiovascular disease accounts for 16%, cancer 7%, chronic respiratory disease 2%, and diabetes 2%, another NCDs causes 12% of all causes of death [6]. In fact, small-scale localized studies suggested a much higher level of death from NCDs in Ethiopia than the above estimate. For example, in Addis Ababa a verbal autopsy showed 51% of deaths were due to NCDs.Moreover, disproportionate age specific death rates have been also noticed in the country where there is a significant rise in deaths from NCDs between the ages of 44-74 years [7].

In contrary to the above evidence, chronic NCDs in the country have often been neglected despite the rising burden of morbidity and mortality. More efforts need to decrease rising burden and risk factor for NCDs which in turn to be accompanied by actions to improve the delivery of primary care interventions for people with NCDs [8].

Ethiopian National mortality burden study 1999-2015 showed intervention on reducing NCDs have been minimal, causing some NCDs to become leading causes of death in 2015. The country should have a strong commitment to implement existing strategies to strengthen and integrate health services as well as design multi-sectorial responses targeting NCDs [9].

Recently with the rise of chronic illnesses, Ethiopia has developed strategic approach to majorNCDs such as hypertension, diabetes, cervical cancer screening and mental illness. Since 2015, more recently, integrated NCDs care delivery has been tailored by nine Addis Ababa and 26 regional primary health centers with urgent need while anticipating improvement to be learned through time-tested strategies [10,11]. There is evidence of the growing burden of NCDs internationally, as well nationally especially in developing countries including Ethiopia. Current opportunities for management and control of NCDs are to be explored.

1.2 Statement of the Problem

The last decades have seen dramatic shifts in the pattern of diseases from infectious diseases to the current leading causes of mortality dominated by NCDs accounting for 68% of annual deaths and 46% of the global burden of disease [12]. A study indicates that chronic conditions will impose an even larger burden in SSA countries and there is an increasing need to expand the coverage, quality, and equity of services for NCDs as DM, HPT in SSA including Ethiopia; this represents a challenge for our traditional health care funding and management system, which is mainly designed to address acute health conditions [13].

The country's performance regarding NCDswere minimal and less attention was given to the performance of NCDs prevention and control, causing these diseases to join the leading causes of premature mortality and death. Furthermore, our current health care systems are organized around treating acute, episodic illness and ill-equipped to meet the needs of chronically ill. While the country is progressing toward universal health coverage, there is a pressing need to pay attention to the leading causes of premature mortality and death rates caused by NCDs [9,14].

Different studies in low to middle income countries including Ethiopia show the health care system lack coordination of care, greatly suffers from structural deficiencies, difficulties of accessing services and poor outcome especially, patients with chronic disease are disadvantaged in the current health care system and in need for several solutions and fundamental changes to be proposed at the organizational and patient level [15,16].

Evidence from different countries suggests that integration and application of the CCM framework, which is systematic, reliable and evidence-based evaluation tool into primary health care organizations is a promising solution to improve traditional health care system gaps in quality of chronic care and to manage allocation of resources as efficiently as possible [16–18].This study searches for a strategy that would help to bridge the evidence-into-action gaps of our current primary health care system for chronic care delivery, respond to increasing burden of NCDs and related high-risk lifestyles, resource utilization, healthcare practices and health outcomes of patients living with chronic disease.

1.3 Significance of the Study

After the second United Nations High-level Meeting on NCDs in 2014, Ethiopia forced to recognize the increasing burden of non-communicable diseases and has made many political commitments due attention to prevent and control NCDs & targeted in the Agenda for Sustainable Development to reduce premature NCD deaths by one third by 2030 [10]. In response to this need recently, FMOH undertake integrated compressive NCD prevention, treatment and care service in about 35 health centers nationally. Majority of tailored health centers were found in Addis Ababa[1].

To my best understanding, this research is the first to generate evidence on currently tailored strategy for chronic care prevention & control initiative and can serve as a good starting point to address the problem areas to undertake action.

The most pressing need of the assessment was to assess a recently tailored strategy for prevention & control of chronic illness in health centers with evidence based, systematic framework, a Chronic Care Model. Consequently, the finding of the study would help health care planners and providers to:

- Provide integrated care which manifests in every facet of community health center operation, and delineate connections between individual patients, health staffs, families and communities,
- Standardize a well-defined care plan, patient self-management support, delivery system design, monitoring of outcome and adherence, and stepwise treatment protocols &
- Develop a national accountable framework which enable monitoring and reviewing of progress, and acceleration of progress based on locally appropriate accountability mechanisms for chronically ill patients.

Furthermore, the lesson from the study would help to improve the quality of chronic illness delivery in the country primary health care system by investing in area identified for improvement to strength the system. The main beneficiaries of the result will be the public as a whole and other beneficiary include; Health facilities, policy makers, and researchers.

[1]Personal communication - AA Health Bureau NCD focal person.

2. LITERATURE REVIEW

2.1 Chronic Disease Burden

According to a first WHO 2010 global status report on NCDs such as cancer, hypertension, diabetes and CVDs are significantly rising worldwide. These diseases are the preceding causes of morbidity and mortality globally, Even in Africa, the WHO projects that deaths from NCDs will exceed deaths from the combination of communicable, maternal, perinatal and nutritional diseases by 2030 [1]. Contrary to a widely held opinion, NCDs in low-income and middle-income countries account for more than 80% of the worldwide NCDs mortality mainly caused by CVD, cancers, diabetes and chronic lung diseases [19]. Countries baseline estimate of WHO Global status report on NCDs 2010; description of the global burden of NCDs, their risk factors and determinants, data show that mortality from NCDs is beginning to increase in sub-Saharan Africa. Projections by the WHO show deaths from NCDs increasing 15% globally between 2010 and 2020 with the largest percentage increases occurring in the WHO regions of Africa, South-east Asia and the Eastern Mediterranean, where they will increase by over 20% [1].

A Cross sectional study assessing risk factor for NCDs in India 2015 by using WHO Steps approach& the global impact of NCDs on healthcare spending and national income : a systematic review. 2015; indicates NCDs appear to be the main cause of death, disability, lost productivity and indisposition globally [20,21]. Another cross section Studies in Gujarat town, among Faculty Members of Teaching Institute of Ahmedabad City, India 2015 shows that rapid urbanization and industrialization are responsible for the growing burden of NCDs; and results in lifestyle changes and an epidemiological transition respectively [22,23]. As well as WHOstatistics2014, indicate that NCDs are associated with 68% of premature mortality in 2012, specifically in low- and middle-income countries [24]. In Ethiopia WHO, NCDs Country Profiles, 2018 report indicate NCDs related death rate in Ethiopia estimated to account for 39%, of this CVD accounts for 16%, cancer 7%, chronic respiratory disease 2%, and diabetes 2% another NCD causes 12% of all causes of death and injuries for additional 12% of death nationally Whereas, communicable, maternal, perinatal and nutritional conditions combined accounted for 49% of the deaths in the same year [6]. However, small-scale localized studies suggested a much higher level of death from NCDs in Ethiopia than the above estimate. For example, in Addis Ababa a verbal autopsy showed 51% of deaths were due to NCDs. Moreover, disproportionate age

specific death rates have been also noticed in the country where there is a significant rise in deaths from NCDs between the ages of 44-74 years [7]. Similarly, GBD studies estimated age-standardized death rates of 800 per 100,000 populations for NCDs in Ethiopia, of which higher death rates (approximately 450 per 100,000) were attributed to CVD and diabetes, 150 per 100,000 attributed to cancer, and 100 per 100,000 to chronic obstructive pulmonary disease [9]. But these estimations were much higher than in many developed countries. Although these estimates of CVD, cancer, diabetes mellitus, and chronic obstructive pulmonary disease look higher in Ethiopia, estimations by WHO and GBD studies are highly uncertain because the causes of deaths were predicted using cause-of-death models due to lack of information on the level of mortality or cause of death at the country level, which should be substantiated by national evidences [25].

2.2 Health Systems and Chronic Disease Management Practice

The health care system is the main provider of health care to chronically ill persons. Health care systems throughout the world increasingly place primary emphasis on chronic conditions. And yet, traditional health care delivery systems have not fully evolved to meet the needs of patients and populations with chronic diseases: care is fragmented, duplicated and directed at acute disease [26].

Developing countries Current health care systems that are organized around treating acute, episodic illness are ill-equipped to meet the growing epidemic chronic conditions needs. Health care delivery systems in developing countries are generally less well oriented towards dealing with chronic NCDs than with infectious diseases. The approach is often unstructured, lacks systematic follow-up and monitoring of chronic clinical care, and provides little quality health information about morbidity or mortality. Moreover, access to essential supplies is often limited and comes at a relatively high cost [27].This situation is common in developing countries especially in sub-Saharan Africa including Ethiopia [28]. Acute conditions care management is generally dependent on the unique features of the specific disease etiology. Whereas chronic care management include a well-defined care plan, patient self-management, scheduled follow-up appointments, monitoring of outcome and adherence, and stepwise treatment protocols [4].The health care system in Ethiopia greatly suffers from structural deficiencies and poor outcomes.

Different studies show that there is a shortage of professionals, lack of access to appropriate laboratory tests, high level of customer dissatisfaction with some aspects of services in government facilities, lack of appropriate medicines and equipment's, deficiencies in the privacy of service provision, and adequacy and cleanliness of service giving facilities [18,29,30]. Health-care delivery often focuses on acute problems and rapid short-term solutions, without the initiation of chronic professional treatment or the active involvement of chronically ill patients. There is also poor patient outcome in different aspects of the health service in the country [31].

2.3 Chronic Care Model for Improved Chronic Illness Management

The Chronic Care Model (CCM) has become a widely accepted framework for organizing and delivering patient centered, evidence-based care for patients with chronic illnesses within the primary care setting [4]. A number of systematic literature reviews have already considered the effectiveness of CCMs [32–35]. The model describes six elements that health care organizations need to optimize chronic illness care: organizational leadership and support, decision support, self-management support, clinical information systems, delivery system design, and community linkages. A basic premise of the CCM is that health care settings where these elements are robust are likely to have prepared, proactive practice teams, and informed, engaged patients who become active members of their health care teams and accept shared responsibility for their chronic illness care. As a result of productive interactions between these teams and patients, both the quality and outcomes of care for patients with chronic illness will improve [4]. Assessments of the degree to which care is consistent with the CCM originally focused on provider and system perspectives using tools such as the Assessment of Chronic Illness Care (ACIC) survey [36]. Studies indicate that in practices with higher ACIC scores, patients with diabetes have better glucose control and lower risk of cardiovascular complications [37]. Several studies data also suggest that the ACIC is responsive to quality improvement changes for chronic illness as diabetes & cardiovascular diseases [38–40].

2.4 Primary Health Care Role in Prevention & Control of NCDs

The scale of the burden of NCDs and the cost implications point towards the importance of a response to NCDs centered on primary care rather than hospitals at secondary or tertiary level. The importance of a strong health system led by primary care is receiving renewed attention [41]. Primary-care providers include those in the government services (Ministry of Health, social-security, prisons, and military) and non-government services (non-governmental organizations and private practitioners). In practice, secondary and tertiary care institutions often also provide primary care in addition to playing a referral role. Primary-care delivery in sub-Saharan Africa has shortcomings: it may be impoverishing, fragmented, and unsafe or misdirected [13]. However, a key strength of primary care is that it is the main entry point into health services for most people. It has played a successful role in the delivery of prevention and care interventions for communicable and NCDs such as DM, tuberculosis, HIV and malaria. Building on this success, primary care could potentially play a key role in the delivery of prevention and care interventions. Investing in improved primary care has the potential to overcome some of the problems identified with the current health system approach to Non-Communicable Diseases [42].

The former Director-General of World Health Organization, Margaret Chan, in her closing speech at the World Health Assembly in May 2011 highlighted the importance of strengthening health systems based on primary care as "the route to greater efficiency and fairness in health care and greater security in the health sector and beyond. It is my strong view that primary health care is truly the only efficient and effective way to do so" [1].This vision of primary care must encompass improved delivery of interventions for the many people with Non-Communicable Diseases seen in primary care. Providing affordable and effective primary care to the often large and increasing numbers of people with NCDs in developing countries will be an immense challenge. The scale of this challenge should be taken not as discouragement, but as a reason for action, in mobilizing the wide range of stakeholders involved, finding the resources, and taking the necessary steps to meet the challenge [17,43].

3. THE CHRONIC CARE MODEL CONCEPTUAL FRAMEWORK

The Chronic Care Model (CCM), a conceptual model for improving chronic illness care, was first developed by Wagner et al (1998); on the basis of an examination of literatures which reported successful practice and system changes leading to improved chronic illness care, and on a consensus among experts. It is a widely accepted framework for providing integrated chronic care, which manifests in every facet of community health center operation, and delineate connections between individual patients, health staffs, families and communities.

The model describes six interacting system components that health care organizations need to optimize for providing high-quality chronic illness care; there are four components at the practice level: self-management support, delivery system design, decision support and clinical information system. A higher level component, organization of health care, plays an overarching role to guide practice-level development. A broader component, the community, provides necessary resources and policies linked to chronic illness care. The development and integration of these components is seen to foster productive interactions between prepared, proactive health providers and informed, activated patients. As a result, both the quality and outcomes of care for patients with chronic illness are expected to be improved.

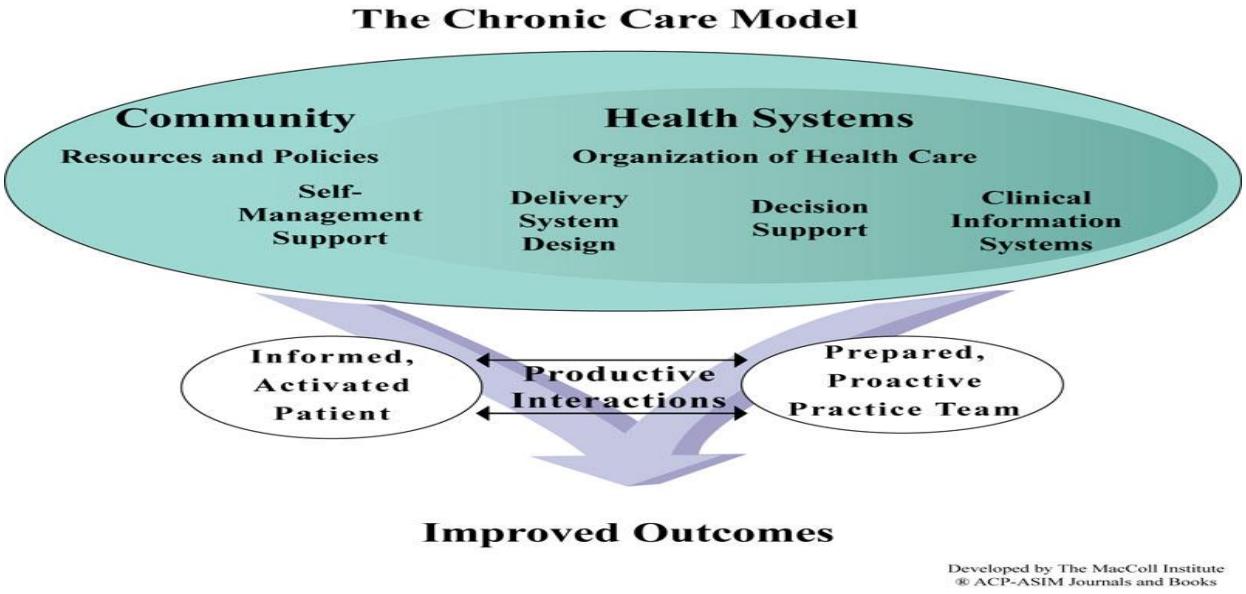

Figure 1: Chronic Care Model (Wagner et. al.1998)

4. RESEARCH QUESTIONS

- What elements of a chronic care model (CCM) have been adopted into a PHC setting to improve quality chronic illness care?
- Do the identified elements improve healthcare practices and health outcomes of patients living with chronic disease?

5. OBJECTIVES

5.1 General Objective

- To describe the extent to which Addis Ababa City Administration primary health care system supports for chronic illness care with the Wagner Chronic CareModeland identify any strengths, weaknesses, barriers, and opportunities in the health care management practice to improve health outcomes;

5.2 Specific Objectives

- Describe the management practice within the primary health care centers of Addis Ababa city administration in the provision of chronic care; and
- Identify the strengths, weaknesses, opportunities and threats in the health care management practice to improve health outcomes.

6. METHOD AND MATERIALS

6.1 Study Setting and Period

This study was done in nine selected public health centers under Addis Ababa city administration health bureau, which were tailored for NCD prevention and control program. Addis Ababa is the capital city of Ethiopia and is the diplomatic capital of Africa. More than 92 embassies and consular representatives cluster in the city where the Organization of African Unity and the United Nation Economic Commission for Africa have their headquarters. Addis Ababa covers an area of 527 km2 and a total population of ~3,273,000 million [44]. This study was conducted at selected Addis Ababa health centers from March to June, 2019.

6.2 Study Design

The tailored health centers for NCD prevention and control were selected by government model to reflect the diversity of health centers in the region in terms of remoteness, patient flow and community sizes. These selected health centers were assessed by institution based cross sectional qualitative study method; which was conducted by using semi-structured interview guide. Key informant interview with chronic care givers and health experts (decision-maker and chronic care managers) were undertaken. To supplement the in-depth interview observation notes and document review were made.

6.3 Population

6.3.1 Source Population

All health care workers involved in chronic care prevention and control program in selected health centers.

6.3.2 Study Population

Health care workers involved in chronic care prevention and control program i.e., physician providers when available, non-physician providers (health officers, nurses), curative core process team leaders and medical directors at selected health centers during the study period.

6.3.3 Study Unit

Selected health care workers i.e. medical directors, curative process team leaders, chronic care givers&chronic care focal persons at selected health centers who were participated in the study.

6.3.4 Inclusion and Exclusion Criteria

6.3.4.1 Inclusion Criteria

Health care professional practice teams directly or indirectly involved in chronic care prevention & control program i.e. health care professional dedicated to NCD prevention & control program: Chronic care focal persons &/or care givers, Health center medical directors, and Curative process team leaders, whom volunteer to participate were included.

6.3.4.2 Exclusion Criteria

Health care worker lasts for less than six months and has not been trained on chronic disease management; sick during study period and refused to participate were excluded.

6.4. Sample Size Determination & Sampling Technique

6.4.1Sample Size Determination

Totally 21 health care professionals were interviewed from nine health centers, which were tailored for chronic care prevention and control program byPsi Ethiopia Healthy Heart Africa initiative in collaboration with Addis Ababa City Administration Health Bureau for the first series. Two to three health center staffs were participated from each health center: medical

director when available, curative team leader, chronic care givers and chronic care focal person were participated.

6.4.2 Sampling Technique

Nine health centers (Addisu Gebeya (AG) Health Center, Akaki (AK) Health Center, FelegeMeles (FM) Health Center, Kality (KT) Health Center, Selam (SM) Health Center, Seriti (ST) Health Center, TechleHaimanot (TH) Health Center, W/ro Beletshachewu (WB) Health Center and Yeka (YK) Health Center), all are tailored for chronic care prevention and control program by Psi Ethiopia Healthy Heart Africa initiative in collaboration with Addis Ababa City Administration Health Bureau for the first series were selected & included.

6.5 Data Collection Methods and Tools

Semi-structured interview guide was prepared for In-depth interview of participants in relation to Version 3.5 of the ACIC scale, originally developed by the MacColl Institute for Healthcare Innovation [36], was used to assess the status of health center systems to support chronic illness care. A minor adaptation was made to facilitate its use in the local setting.

The study adapted the Chronic Care Model framework which has been the subject of wide international attention and has formed the basis of a World Health Organization Framework for Innovative Care of Chronic Conditions (ICCC) [45], which help us to assess how well we're handling chronic diseases in the primary health care setting.

The assessment tool based on six essential elements in a system that does high-quality chronic disease management: 1) Health Care Organization for e.g. its structure and influence; 2) Community Linkages e.g. facilitation by working together with community organizations; 3) Self-Management Support e.g. how it promoted through patient education and goal Setting with clients; 4) Decision Support e.g. facilitation of support from specialists access to clinical guidelines and their integration with daily care; 5) Clinical Information Systems e.g. adoption of computerized information systems, provide remainders, prompts and feedback for providers. 6)

Delivery System Design e.g. effective teamwork, specific roles of primary care team members in relation to chronic illness care.

Typical explanations from the interview comments for each component of CCM were extracted and further categorized with a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis matrix [46]. Strengths and opportunities were defined as being positive to the organization and weaknesses and threats as negative. The qualitative data comprised health center staffs comment on their systems in relation to NCD management practice.

The interview was face to face with key informant health center staffs were conducted until saturation of ideas among volunteer participants. The questionnaire was prepared initially in English, and then translated to Amharic for interview and audio recorded with the participants' permission. Then it was transcribed into English verbatim on the same day and checked again and again. The interview was last for about 40 to 60 minutes; written informed consent was obtained for each individual participant prior to the start of the interview. The interviews were undertaken by the principal investigator and supported with direct observation and document review.

One data collector was temporarily employed to assist and facilitate the data collection process. The responsibility of the data collector was to arrange recording after obtaining informed consent from the study participants. The data collector was trained for 3days before the actual survey which was undertaken by the principal investigator (PI).

6.6 Study Variables

6.6.1 Independent Variables

CCM elements: Self-management support, decision support, delivery system design, health information system, health care organization, and community linkage

6.6.2 Dependent Variables

Improved health status, Patient and staff satisfaction, improved organizational structure, improved management practice and quality chronic care

6.7 Operational Definitions

Major NCDs are defined by the WHO: cardiovascular diseases, diabetes, chronic respiratory diseases, and cancer.

Chronic Care Model (CCM) is a well-established model designed to guide the reorganization of health-care delivery systems from acute and reactive care to proactive, planned and community-based care first developed by Wagner et al. The model describes six elements that health care organizations need to optimize chronic illness care: organizational leadership and support, decision support, self-management support, clinical information systems, delivery system design, and community linkages.

The ACIC– is a 28-item survey that measures the presence of the six elements of the CCM. Each item is scored on a 0 to 11 scale and provides sub-scale scores for each of the 6 CCM components as well as a summary score. Scores from 0 to 2 represent "limited or no support for chronic illness care", 3 to 5 represent "basic or intermediate support", 6 to 8 is "advanced support", and 9 to 11 represent "optimal or comprehensive, integrated care for chronic illness".

Primary health care– Basic or general health care focused on the point at which a patient ideally first seeks assistance from the medical care system. It is the basis for referrals to secondary and tertiary level of care.

6.8 Data Entry and Analysis

The data were collected and organized into each components of Chronic Care Model to explore the extent of uptake and identify positive and negative areas in chronic care practice. The data were analyzed using qualitative content analysis approach. The transcribed text imported into the Open Code program to facilitate the coding process and the CCM components for the data analysis was categorized by defined variables see table 2. Units of relevant meaning were examined line-by-line and coded by the PI. As part of the analysis six preset themes and four purposively built subcategories were developed that illustrated the manifest meaning of the

findings, while the single theme represents the overall joint interpretation of the qualitative information and reflects the latent meaning of the data.

6.9 Data Quality Control

A pre-test was employed prior to full scale research to test the instrument and strategies. Depending on the feedback, gained from the pre-test and during interview the questionnaire has been further revised and updated. Data collection was undertaken by the principal investigator and data collector was health professional staffs, who receive 3 days training on the contents of the questionnaire. Selected health care teams undergo a one-day orientation which was to introduce the package of CCM elements based on Assessment of Chronic Illness Care guide [47], it was enhanced me to gain a consensus with staff members who were participated in orientation and they were made active role in the process of data collection as well as arrangement.

Intensive monitoring and follow-up, technical assistance and close check-up for completeness, accuracy, clarity and consistency of the data have been undertaken. Moreover, the qualities of data were further ascertained during the data entry, cleaning and analysis process. In-depth interview was held until the point of saturation and the discussion points were recorded to audio tape recorder and notes taken simultaneously.

6.10 Ethical Considerations

Ethical clearance was obtained from the Ethical Review committee of School of Public Health Addis Ababa University and Addis Ababa City Health Bureau. Before the start of data collection, permission letter was obtained from Addis Ababa City Health Bureau and selected health centers stacks. Informed written consent was obtained from the respondents and to ensure confidentiality name and other identifiers was not included on the report.

6.11 Dissemination of Results

If ones the study gets approval by the respective, then the result will be presented to University of Addis Ababa School of Public Health as partial fulfillment of the degree of Master of public health in health system management. It will be submitted to Addis Ababa city Health Bureau, Ministry of Health and selected facilities. Effort will be made to present the result on different national and international conferences if accepted. As well as, publication in scientific Journal will be considered in advance.

7. RESULTS

The study interviewed twenty-one of twenty-seven key informant primary health center chronic care teams (78%) from all nine tailored health centers for chronic care prevention and control program in Addis Ababa for the first a round: four health center medical directors (19%), eight curative process team leaders (29%), four chronic care focal persons (19%) and nine chronic care givers (33%). The health centers practice team currently involved in the chronic care prevention and control intervention were eligible to this study. The primary reasons for non-respondents were being "too busy"; more details of participants' characteristics illustrated in table 1.

Table 1 Characteristic of study participants

Characteristics of participants	Number of participants (N=21)
Type of profession	
Public Health Officers	13 (62%)
General Nurses	8 (38%)
Management role	
Medical Director	4 (19%)
Curative Team Leader	6 (29%)
Chronic Care Giver	7 (33%)
Chronic Care Focal Person	4 (19%)
Work experience	
< 6month	-
6 month-3yrs	2 (1%)
3yrs-5yrs	7 (32%)
> 5yrs	12 (57)
Training received (chronic disease management)	
Yes	14 (67%)
No	7 (33%)

This study results section presents in-depth description of each chronic care system component guided by semi structured open-ended interview with defined features, see table 2. The data comprises health center staffs' comments on their system in relation to the strategy tailored for chronic illness care particularly, for hypertension and diabetic mellitus prevention and control initiative in nine selected Addis Ababa health centers.

The qualitative data were collected and organized by using a Chronic Care Model themes, which is a well-established model designed to guide high-quality chronic disease management in primary health care setting. The questionnaire was prepared initially in English, and then translated to Amharic for interview and audio recorded with the participants' permission. Then it was transcribed into English verbatim on the same day and checked again and again; then imported into the Open Code program to facilitate the coding process and for the data analysis.

The data were analyzed using qualitative content analysis approach. Staff in-depth interview comments were coded line-by-line; and organized into a purposely built matrix comprising the four emerged subcategories, which facilitated to extract explicit explanations, which describes health centers experience as either of strength, weakness, opportunity or threat (SWOT). Furthermore, strengths and opportunities were grouped as positive and weaknesses and threats as negative factors to the organizations chronic care practice. As a result six preset chronic care themes and four purposely built subcategories (SWOT) in each thematic area were developed: 1) Health Care Organization Support, 2) Community Resource Mobilization, 3) Self-Management Support, 4) Decision Support, 5) Delivery System Support and 6) Clinical Information System Support.

1. Health Care Organization Support

There are no shared organization goals to health care givers and planners on chronic disease management; it tends to be ad hoc and informal. Majority ofparticipated health centers managers' reported that, a chronic disease goal was not clearly reflected and/or explicitly included in their strategic or annual plan; that has been perceived as a barrier to change by health care managers. For e.g. one of the health center medical director was reported that as:

"Well to be honest, I am not sure that a chronic disease goal was included in a mission or strategic plan because the program is a new initiative. In fact, our plan for chronic care developed from prior year service provided to patient that would be taken as a base to our next plan and in turn we cascade it to rest team members. Otherwise it is not adopted from Strategic plan and also not included in a vision or mission of the organization" (Interview with TH, health center medical director).

Moreover, the other one heath center curative team leader emphasized the above evidence as their participation in setting a measurable and clear performance indicator with health planners is not usually practiced and reviewed. As one of the curative leader responded that as:

"we are at service point we didn't expected to go through a vision/mission or strategic plan indeed we didn't really get into it very much, since this is new initiative I am not sure whether it is included or not, in the strategic/mission/vision plan"(Interview with WB, health center curative team leader).

However, health centers managers' assigned one or more chronic disease members and one coordinator in place, which was also identified as strengths of health care organization support. The majorities of participants felt it as positive, for e.g. some of participants responded that as:

"…it is great, overall it helps everyone strengthen (chronic care program), we assigned a chronic care case team with a focal person, who was responsible to coordinate the care plan and treat for cases with the rest two team members. The assumption was that, whenever one of the team members get absent the other one undertakes the activity so that the service will not be interrupted" (Interview with KT, health center curative team leader).

"…Well, the initiative was started recently; at a time we told to start the program, with pleasure, what we did was preparing a room to undertake a service and training were given to health workers followed by assignment of focal person to coordinate a team" Interview with AK, health center curative team leader).

On the other hand, several of participants commented that chronic care units established with due rising burden and urgency to arrange work place in the busy setting; in fact, there were no rooms for a chronic care in the organizations long time plan and construction design. Really that was a problem; some of health centers prepared a room in corridors as a result which hinders the actual proposed entire service flow. For e.g.one of a health center curative team leader reported that as:

> "*Curativeprocess team encompassesmany services under it chronic care is the one included in curative service and the incentive was started recently by the aid of Psi Ethiopia Healthy Heart Africa initiative. At time of the program launched, the first thing we told to do was to prepare a room in which the care would be undertaken. As a result we are forced to do a partition in this busy setting, as you see"* (Interview with FM, health center curative team leader).

The chronic care initiative was recently organized by the Psi Ethiopia Healthy Heart Africa initiative (Non-Governmental Organization) in collaboration with Regional Health Bureau; it was perceived by health center staffs as a good practice and an improvement strategy for chronic illness care. However, several of others reported there is relative lack of funding and shortage of materials to support activities related to chronic illness care; for e.g. one of chronic care provider responded that:

> *"This program is supported by Psi Ethiopia Healthy Heart Africa initiative. However, there is a shortage of equipment for chronic illness care. Have one of everything but not enough for good service; that we have to carry from room to room. Do not have enough of everything –we need more apparatuses, otoscopes, scales, and more of the basics"* (Interview with KT, health center chronic care staff).

Apart from that, the other health center curative team leaders also emphasized the above evidence as; there is a relative shortage of incentives and materials for chronic care plan, because it was less considered as a health priority. Asthe other one of team leader reported that:

> *"there is lack of incentive in chronic care which cannot be compared to other programs such as HIV- AIDS prevention program in which the team performed best recognized*

with at least certification at the end of the year" (Interview with FM, health center curative team leader).

In addition, the health centers medical directors are considering claiming the strategies to improve chronic care as a team effort to mobilize resources, with positive communication and coordination between health practitioners and community services, which was perceived by health service directors as a positive strategy for quality improvement in chronic illness care. For e.g. one of the health center manager commented that as:

"if there was funding to support an extra position it would reduce the pressure of acute care demands, allowing staff to work outside the health center more frequently to do health education and promotion with individuals, families and groups, and to facilitate the development of community partnerships with the aim to improve chronic illness care" (Interview with TH, health center Medical Director).

Other comments positive to the organization reported by several of health center managers and curative process team leaders were that health centers established performance monitoring teams and provided training and a review meeting to health care workers in specific disease management. They perceive it as a good practice & de-motivating factor. Participants reported that as:

"We have annual plan made by our organization and monitoring usually under take in monthly bases with so called performance review meeting. Multi-disciplinary team monitors organization achievement based on our target plan" (Interview with AG, health center medical director).

"Chronic cares Professionals have training and a review meeting which is assumed as refreshment/incentive for health care workers. The training was organized by Psi Ethiopia Health Heart Africa initiative in collaboration with RHB" (Interview with AK, health center chronic care staff).

2. Community Resource Mobilization and Linkages

None of health centers developed working relation and agreements with community-based organization. There is difficulty in getting calls and triaging the missed for care plan and lack coordinating the service with designated community visiting team because of limited audit and ineffective communications. This stream of chronic care was absent and not recognized by a team members and health planners. Indeed, studied facilities a staffs perceive that community resource mobilization is an important element to gain a social support & improve policy environment for chronically ill. Unfortunately, health care planners were failed to recognize its use in practice. Some of health center medical directors reflected that they were missed to mobilize community organization and they are new for the concept. For e.g. one of health center medical director responded as:

> *"We did not mobilize any community organization, which may give us different supports by assessing the need of chronically ill. Community resource did not been mobilized as well as involving a local organization to support the ill which has been missed and even there is no way to consider it"* (Interview with TH, health center medical director).

Some others staffs also commented that having no access to a social support was identified as a really problem. In some cases, patients are unwilling and reluctant to get in a medical service which was not considering their actual social and/or economic need. It was mentioned by one of chronic care focal as:

> *"Our organization including PEHHAI (supporting NGO) does not consider a social/economic need, sometimes chronically ill really being absent and refuse the medical care that did not realize their actual need. Even patients are unwilling and reluctant to get in a medical service which was not considering their actual need"* (Interview with FM, health center chronic care focal).

Other weaknesses in community-based organization linkage include missed opportunities that linking prevention with clinical services, if that was used it may help to search or visit the lost/missed to care plan. The chronic care staffs explained it as:

"Our woreda surrounded by a lot of manufactories that are around our health center such as powder factory known as charley, steel factory and also some others, unfortunately we don't have any partnership with them and mobilize resources to support chronically ill" (Interview with KT, health center curative team leader).

"…Sometimes there is a lack of coordination between the chronic care staffs, the primary health care team and external services which visit to the community to do prevention activities" **(**Interview with ST, health center chronic care giver).

Further to this, three of curative process team leaders responded that recently tailored chronic care intervention were under recognized and not actively reviewed by health planners of sub city and woreda. This reflects the need for more advocacy and engagement of sub city and woreda health planners in order to coordinate the chronic care activities. For e.g. one of team leader reported that:

"Well, to my experience, up to this time the program is not well aware by a woreda and sub city mangers. It seems really a job of NGO (Psi Ethiopia health heart Africa initiative); what I comment is that these programs need to be well advocated to woreda and sub city managers as well as staffs.

On the other hand, other one health center curative team leader reported that more recently to some extent the woreda and sub city managers were showed engagement in the chronic care plan; was reflected as:

"…recently the woreda administration send a letter that states: to take some action which promotes health care organizations to undertake screening service to all adult patients attending to a health center, they at least should undergo screening for hypertension and a primary health care team have to visit a chronically ill patients at their home" (Interview with SM, health center curative team leader).

Respondents also reported that, regarding Regional Health Bureau (RHB) role in relation to chronic care coordination, the RHB has not developed networking with community organizations and also needed measures to mobilize resources. Respondents were noted that as:

"Regional Health Bureau being silent to undertake the ownership of the program; rather they prepared dependence on Psi Ethiopia Healthy Heart Africa initiative (NGO)" (Interview with AG, health center chronic care focal).

"RHB inactive to mobilize community organization which might be needed to address social need to support chronically ill" (Interview with AK, health center chronic care staff).

Majorities felt as positive thing to this component of the organization system were that there is established Family Health Care Team, which is considered as the pioneer strategic model promoted by the ministry of health; and it was appointed by multidiscipline team including chronic care team. It perceived as a good opportunity to provide community services. However, the team visit community members once a week to provide a service; it was limited to screening service only (e.g. measure blood pressure) and the extent and level of activities is not known. It was stated by a chronic care staffs as:

"We do have community outreach program with primary health care team which provides screening service for hypertension cases and link them to the health center for better care and management, however there is a lack of communication between the health center and the external services which go to the community to do prevention activities. The opportunity of linking prevention with clinical services has been missed" (Interview with FM, health center chronic care staff).

"…A Family Health Care team visiting a community and provides as though much of the work did out in the community; but it was not recorded, therefore may go unrecognized and may be undervalued (Interview with YK, health center curative team leader).

Apart from this, a good opportunity to the organization reflected by chronic care givers & experts were there is supporting Non-Governmental Organizations. For e.g. one of the health center expert reported that:

"the program was supported by NGO known as Psi Ethiopia Health Heart Africa initiative in collaboration with Regional Heath Bureau' provide us materials for

examination as blood pressure apparatus, weight scale, laboratory reagents, registration formats, guidelines, protocols, organize review meeting and others as well" (Interview with KT, health center chronic care staff).

There is a community campaigns organized by RHB and Psi Ethiopia Healthy Heart Africa initiative in order to promote preventive activities which is perceived as positive to the organization by chronic care providers, and as reported by most of health center chronic focal person. For e.g. one of the focal reported that:

"Sometimes all the health care team mobilized to provide a screening campaigns for hypertension in the community which is organized by regional health bureau and Psi Healthy Heart Africa initiative" (Interview with AG, health center chronic care focal).

3. Self-Management Support

Majorities of participant reports indicated that individual face to face patient education especially for newly diagnosed clients and family member were routine but group session education was given sometimes in the health centers, indeed staffs claimed it as an instrument to empower clients and get involved in their care plan. Almost all participates, chronic care givers and team leaders reported that one to one patient education is a routine practice to empower patient, gain shared responsibilities and involving patients in their health care to improve their health. To illustrate, care givers stated as:

"When patient linked to chronic care we sit down together and talk about the fact that a care plan would help. Take their weights and height, then BMI calculated put on the registration and provide information on treatment care plan and agree on next visit. We give praise about what is going right & keep messages positive. Review tests and see the numbers dropping to reinforce behaviors which improve the condition" (Interview with WB, health center care giver).

"Yes! it is a good one, patient could take a bigger role to their health care plan, as you can see, we provide them with a couple of tools to empower them and every individual

undergo a one to one education with the care giver" (Interview with AK, health center chronic care focal).

However, the family member education activities are only for clients with relatively complicated conditions and limited to those on request to know their condition. For e.g. one of chronic care team leader responded that as:

"We provide health education individually face to face especial for newly diagnosed and sicker as well as sometimes group sessions to create awareness to community members. We have teaching aid materials organized by Psi Ethiopia Health Heart Africa initiative especially for HPT cases: booklet, pamphlets, leaflets provided to patient and their relatives to enhance awareness and involvement in the care plan" (Interview with ST, health center chronic care focal).

Another important aspect of self-management support is developing a system which promotes peer and family education. Even though, it was not been recognized sufficiently in the health centers chronic care practice; almost all participated facilities providers responded that community education is little and not well coordinated so that it needs more emphasis. For e.g. one of chronic care team leader place emphasis to improve community education was:

"At the moment there is no health promotion so education around chronic disease is limited to within the health center and community education is little. The situation would be improved if chronic care goal were integrated with a community visit schedule (each week). There were no established peer educations sessions as well school session" (Interview with FM, health center chronic care focal).

Moreover, the other one participant also give emphasizes to the importance of peer and family support for chronically ill; he was commented that as:

"*People with hypertension and diabetes don't feel sick. So, it is necessary to talk with them and discusses illness. We encourage them to come in with their relatives/family so*

that other family members also understand the importance of taking medications etc" (Interview with TH, health center chronic care staff).

Even though, most of providers perceives self-management support is a critical element of chronic care to make clients for better understanding and managing their health problems by their own, in practice we are too far from doing so and also new for the concept. However, for the newly diagnosed chronic disease clients Weight and height measured as routine and body mass index were obtained and recorded. But, setting goals (e.g. for weight reduction) with clients and proactive follow-up to the potential and actual need were seldom done. With regard to patient self-management assessment, providers' claims there are no guidelines for use as a reference for patient assessment and it is rare practice. For e.g. providers responded as:

"Clients have a shared responsibility to keep their health by their own taking only medication is not the ultimate means to be healthy. As we experience every enrolled patients on chronic care get individual education based on their need as well as not all patients enrolled to put on drug management some of them followed with life style modification. For example mild hypertensive patients usually to undergo a life style modification and follow their progress with it, but we have no self-management assessment guideline, what usually we do is assessing for risk factors and give advice as needed. There is no standardized guideline and documentation for it" (Interview with AG, health center chronic care giver).

"there is no any guideline or documentation for self-management support and it not a common practice; also there is no a record for goals set with clients and follow progress: we missed documentation of personal goals in the client files; Seldom Identify of barriers and challenges for individuals to attain goals set" (Interview with FM, health center chronic care team leader).

In the other hand, facilities have no trained professionals on self-management support. Throughout the health centers assessed, participants responded that self-management support

concept was not organized and also not been considered by the health planers. For e.g. one of chronic care staff reported that:

> *"Our organizations have no trained professionals such as nurses, psychology, behavioral health professionals on self- management support & established self-management case team. We don't have any such practice it is new for me"* (Interview with WB, health center chronic care focal).

In response to the question assessing and identifying self-management client needs, getting support from these around them and families to improve their health in their own, most of participants throughout the facilities did not get supports of others for chronically ill. The curative team leaders responded as:

> "*even though, we identify risk factors for chronically ill patients and register in the place provided in the log book with identified risk factor; but usually we didn't follow for it we missed the monitoring of its progress to get the desired goal"* (Interview with KT, health center curative team leader).

> *"in fact, family/peer address was asked and filled in the registration book and also it is organized to contact the ill when necessary but no one call for cases and follow them (e.g. missed for follow up) because of under staffing and high workload"* (Interview with AG, health center curative process team leader)

Participated health centers universally provides screening for risk factors and identify modifiable risk factors for especially newly enrolled patients. It is perceived as a good practice by the care providers in order to control modifiable risk factors. For e.g. one of the team leader reported that:

> "*We identify risk factors such as tobacco use, physical inactivity, chat use, harmful use of alcohol, unhealthy diet and overweight/obesity and advise on achievable goals with clients e.g. weight loss"* (Interview with YK, health center chronic care focal).

Table 2: Chronic Care Model and its defined features

Components	Features
Health Care Organization	Organizational goals and resources for chronic illness care, quality improvement strategies (incentives)
Community Support	Linking patients to outside resources, activities with community-based organizations and professionals working out in the community
Self-Management Support	Interventions based on technological aids to promote self-care, self-help groups, family-oriented supports, motivational support and behavior therapy
Decision Support	Practice guidelines, provider education and involvement of specialists in improving primary care
Delivery System Design	Practice team functioning, patient care planning and follow-up and coordination between primary care and specialist services
Clinical Information System	Disease registry type , reminders and feedback to providers

4. Decision Support

It is believed that clinical decision support was gained through the introduction of scientifically based clinical guidelines into daily clinical practice, use proven provider education methods (problem-solving learning) and integrating specialist services into primary care. Almost all of the health centers report shows, health center staffs universally practice with evidence-based

guidelines in their day to day chronic care mainly for hypertension cases. However, for diabetic cases the above-mentioned activities were limited and not standardized. For e.g. care givers responded that as:

> *"Well, we have recent revised practice guidelines, protocols standing orders and registration formats especially for hypertension case management and integrated it in daily practice to manage patients. We also provide Booklets, leaflets, and pamphlets &share with patients to encourage participation and awareness"* (Interview with KT, health center chronic care focal).

> *"as you see, our chronic care practice guided with a revised guidelines, protocols prompts and registration books, you can look at it, it was recently developed by Psi Ethiopia Health Heart Africa initiative (PEHHAI) and also it is a good thing to be practiced in other programs"*(Interview with ST, health center chronic care giver).

Majority of reports showed that, patient education were aided with teaching aid materials such as booklets, leaflets and pamphlets especially for hypertension cases which was organized by Psi Ethiopia Health Heart Africa initiative. A staff perceives it as a good practice in the health center and they practice it in their daily clinical care. Interestingly in several of the health centers, participant reported that training was given to health care providers in specific disease management when they were assigned into the chronic care, which is perceived as a good opportunity and universal practice in all tailored health centers. As one of the providers stated that as:

> *"PEHHAI provides training twice a year as per the need of health center. We get training how to manage a chronic care as well as provided with teaching aid materials and others. Two health care workers trained currently provide service for chronically ill"* (Interview with YK, health center chronic care focal).

However, some other providers reflected that the training program was been only for hypertensive case management and not included practical demonstration with experts for e.g.

proven provider-based learning such as common case presentation with expertise. For e.g. as one of the chronic care focal responded

> *"The training was organized by Psi Ethiopia Health Heart Africa initiative mainly for hypertensive cases which help us to how to manage and handle chronically ill but one thing missed during training was practical demonstration with expertise"* (Interview with FM, health center chronic care focal).

Involvement of specialists in primary care regarded as unthinkable and mainly gained through traditional referrals, services considered being avail with only referral (e.g. eye check for diabetes) were inconsistent and unavailable to visiting specialist services and perceived generally as questionable to meet chronically ill needs. As was showed, in several of the health centers, the integration of specialist service to primary care is a problem. Almost all of health centers had not integrated the specialist services in to health center care practice. For e.g. some of care givers responded that:

> *"Usually what we do when in need of specialist or expertise support is to discuss the need of referral with patient and refer to our nearby hospital by using referral directory if the service is available in nearby hospital and told to come back when necessary, otherwise no specialist consultation/coaching/mentoring program used for hypertension and diabetic care"* (Interview with KT, health center chronic care focal).

> *"No! We don't have any integration with expertise; indeed it has not been considered. When we need a consultation for specialist/expertise usually we try to provide a self-referral to hospitals. Even though, the feedback from hospitals usually very rare"* (Interview with ST, health center chronic care giver).

However, against this background, certain health centers addressed specialist service in some cases as in mental health program. As one of the health center care giver noted that in mental health program specialist comes to service point to provide a needed service in practice, it is perceived as a good practice by care givers which to be expanded to other programs. It was explained by a care giver as:

"In mental health program, I know that there is a team comes to health center including specialist expertise to treat cases together with chronic care teams in health center in order to provide a needed support practically" (Interview with AG, health center chronic care focal person).

Originally, it was hoped that integration of a specialist service into primary care would be made soon, but it was not quickly became apparent and this much was not possible. As one organization team leader said:

"*I remember that they thought us that the hospitals with in our catchment area will became integrated to support health centers (including expertise) around their catchment area but it has not been practiced still now"* (Interview with SM, health center chronic care focal).

5. Delivery System Design

Improving the health of people with chronic conditions requires transforming a health care system that is essentially reactive, episodic, events focused, and responds to demands and acute conditions into a system that is proactive, integrative, continuous, and focuses on the person and family and is devoted to promoting and maintaining health. The early attempts which were identified as strengths of the delivery system design were the health center provided a place of work and the opportunity to work as a team. Chronic care focal person is an active member of multidisciplinary team and coordinate care in between the organization to support the chronically ill. As reflected by several providers were that:

"Our health professionals trained on chronic care were assigned and helping chronically ill as well as we provided a different room and the opportunity to work as a team and assigned team members and chronic care focal person who coordinate the delivery of care plan, were in place" (Interview with SM, health center curative team leader)

"We assumed Chronic Care to be in position of multidisciplinary team; we have held monthly performance review meeting based on our base plan and achievements" (Interview with AK, health center curative team leader).

"Our health center established chronic care team; assigned a focal person to facilitate the overall care plan under curative team and we do provide a screening service for hypertension on triage so that to link when blood pressure rose to chronic care unit" (Interview with AG, health center chronic care focal).

The number and composition of staffs were two in number for majority of health centers: health officer and clinical nurse. Four health centers assigned the only general practitioner in their health centers practice to a chronic care because staffs perceive chronic care as a complex condition and then best qualified team members should be assigned there. Only one health center assigned four professionals: general practitioner, health officer, psychiatric and BSC nurse in chronic care. A health center curative team leader as responded that:

"Four health workers who get trained were assigned in a chronic care team. Focal person (health officer), general practitioner, psychiatric and BSC nurse assigned to facilitate a care plan and expected to be one is a backup for the other otherwise there is no specific job description/roles/responsibility identified. Chronic is somewhat complicated to treat so that we assigned our only physician in a chronic care" (Interview with ST, health center curative team leader).

On the other hand, most health centers suffered from a shortage of health care professionals whom required in the chronic care team especially, GPs, behavioral health professional, social workers and counselors in primary health care and lack of integration with specialist service in their catchments to delivery better quality of care. For e.g.as one of chronic care staff responded that:

"We assigned two trained health workers in order to undertake a chronic care plan. A focal person health officer and clinical nurse assigned to facilitate a care plan expected to be one is a backup for the other; otherwise there is no GP, behavioral health worker, social worker in our health center" (Interview with TH, health center curative team leader).

Moreover, none of participated health centers developed defined roles, responsibilities for chronic care givers as well as guiding principles either for the number of staffs or their composition. In several of the health centers, the work between the doctors when available, health officer, nurses and primary health care team is currently not well defined and coordinated. For e.g. chronic care team leaders responded that as:

> *"Well, in case when one care giver left the chronic care room the other care giver gets to cover the duty. So that, this makes difficult to provide a role and responsibilities for every member, in turn we end up and exacerbates the shortage of health workers we have"* (Interview with FM, health center chronic care focal).

> *"There is no team member who has a specific role or responsibility for the chronic disease program as well as the ultimate professional composition has not been known and standardized for chronic care"* (Interview with YK, health center curative team leader).

Several of participants responded that chronic care members working in a good teamwork characterized by effective communication (i.e. regular meetings) for addressing issues related to chronic illness care. On the other hand, some of other staffs perceive that providing individuals with role and responsibility would limit a team spirit; for e.g.as one of chronic care focal said:

> *"Team spirit will be limited if we provide individuals with role and responsibility because, when someone goes elsewhere there will be no one to take care of the place that in turn will exacerbate the shortage of health care professions"* (Interview with AK, health center chronic care focal).

Almost all the health centers staffs reported that, they were new for the clinical case management service and continuity of care for complex patients so that the opportunity to do so was missed; at the time of the interviews, they were new for the concept of organizing and delivering group visits services for population of patients; for e.g. annual diabetic (eye check) were seldom

delivered and linking with external clinical team were absent. As one of chronic care focal responded that as:

> *"When there is a need for check-ups, usually peoples have to go to the hospital they have to wait and appointed for long times then they leave and don't wait and then don't get the service and have to wait another year"* (Interview with AK, health center chronic care focal).

They also expecting much more change to improve the continuity of care as the other chronic care team leader report emphasized that

> *"Well regarding continuity of care the cases were not looked/reported to others to optimize decisions. In fact, this was not a common issue reflected as an agenda in our health care plan"* (Interview with WB, health center curative team leader).

Even though, the recall and follow-up system are in place, it has not been functioning well because lack of audit, which is a really problem that everyone is not aware of who is due to come, for what and who is responsible. As one of chronic care team leader responded that

> *"Yes it is a good question, we do have patient and relatives address/ contact on a registry book that helps to find when missed/lost to care plan but we missed in practice because we are very busy with a routine tasks and nobody can think over it"* (Interview with ST, health center curative team leader).

Other plans embedded in delivery system design practices were organized follow-up system in place that serve as a liaison to the chronic care program for both clients and practice staffs as one of the curative team leaders reported that

> *"We appoint chronic care enrolled patients in regular bases monthly, in some cases for example as in newly diagnosed hypertensive cases would be appointed weekly even more frequently. We have appointment registry format, to follow their attendance. The follow up registry includes phone number address to contact when absent for care plan. But it has been seldom practiced"* (Interview with KT, health center curative team leader).

All across the studied health centers participants reported that they established a primary health care team which works in the community, which were also identified as strengths of the delivery system design. However they missed a lot with a respect to coordination between team members for addressing issues related to chronic illness care; for e.g. some of care givers and curative team leaders responded that as:

> *"…We have been organized a primary health care team which is mainly designed to address population members (for e.g. missed for follow up), and also it was been assumed to be used in the case to search missed to care plan, but not yet been practiced"* (Interview with TH, health center chronic care staff).

> *"…We have a primary health care team (PHC) which goes to the community every weak including a chronic care team but still know what they should do is not clear, only screening to blood pressure was done otherwise they missed to link the lost one"* (Interview with TH, health center curative team leader).

6. Clinical Information System Support

Fortunately, know a day there are numerous technologies to support chronic care and motivate patients to adopt healthy behaviors are being offered or developed. This ranges from social medial applications that allow patients to communicate with peer groups and other online communities to simple mobile phone applications to Tele-medicine on a broader scale. However, none of tailored health centers are not yet adopted/installed Electronic Medical Record system (EMR) and patient care technologies, particularly smart phone and social network applications. Almost all respondents reported that they face multiple obstacles to provide technological tools; medical directors as reported that:

> *"…Even though, it is clear, that the Computer- Based Medical Record system provides so many prompts and reminders. We adopted A Paper -Based Medical Record system. Even if, we wish to use a Computer Based Medical record system but there is no choice in this"* (Interview with AG, health center medical director)

"…Of course we need Electronic Medical Record system to establish suitable mobile phone applications that would facilitate messaging of consumer health summaries from a range of existing electronic information system" (Interview with SM, health center medical director)

None of health centers running computer based medical record systems. This causes a really a problem to obtain needed patient/population data. Some providers' felta computer-based electronic medical record system provides the facility for scheduling guideline services for individual clients, for identification of people due for scheduled services, and reminders to providers. Practice staffs reported that as:

"…Paper-based medical record system seldom generates daily statistic and outcome progress reports for chronically ill; even if so, it is time consuming and burdensome. Moreover, there no one tracking for it and also little follow-up, support and auditing for progress monitoring and there is evidence of the workload in the health center" (Interview with TH, health center chronic care focal).

"Copious documentation used for chronic care management was burdensome; cohorts of chronic patients who need a special service were not usually generated; I think for better care plan, a simple use electronic medical management system is needed. But there is lack a request and attention" (Interview with ST, health center chronic care staff).

Furthermore, the other experience perceived as negative by some of chronic care providers was a registration logbook lacks all needed prompts and reminders to worthwhile a patient medical data.However, health planners reported that a recently they were changed the registration logbook to minimize the copious documentation needed for chronic care management. But they were changed the old registry logbook which is worth with a remainders and prompts for proactive patient/population data management in relation to the new one. For e.g. one of chronic care team leader reported that

"There are two registries for chronic care the old one provides a lot of remainders, but the new one recently updated provides only baseline remainders such as HGA1C, FBS, risk factors and outcome remainders like treatment outcome otherwise, it lacks follow up remainders and prompts which was been included in the old one" (Interview with WB, health center chronic care focal).

However, all of the health centers had developed and accessed for patient and population records using a paper-based information registry. The registries were organized by the aid of Psi Ethiopia Healthy Heart Africa initiative in collaboration with Regional health bureau. As one of chronic care giver put it as

"Well you can look at the registries: logbook, patient care chart, appointment cared and also appointment log book, all are in place provide as with needed timely information" (Interview with AG, health center chronic care focal).

The recall system contains three formats: patient chart, treatment follow up registry and patient appointment logbook. Each format filled with needed information for patient care as patient address including phone number, diagnosis, and treatment plan and also indicates which month checkups are due date and the visiting the health worker; and writing down the names of every person and the scheduled checkup date for each person; appointment cards were written out for each patient. It is clear that alerts, reminders, and timely feedback for health professionals as well as service users should be used when organizing user data to monitor system performance and efforts made in order to provide better quality service. Some of efforts organized positive to organization were stated by a chronic care focal and care giver as:

"Even though, our chronic care medical record system is paper-based, whereas, it helps to identifies subpopulation group for their outcome and the system contains a recent medical event summary of patients, diagnostic results, pathology, drug regimen appointment due date and laboratory results" (Interview with KT, health center chronic care focal).

"Our registration book contains recalls for a base line remainders for the care even though, other remained needed for continues care such as three, six, nine-month workups were lacked" (Interview with AK, health center chronic care staff).

Regarding reporting and feedback all health centers generate monthly and quarterly report at the beginning of the month by checking the chronic care disease registries, in turn sent to Psi Healthy Heart Africa initiative as well as, RHB. Quarterly review meeting was in place, every quarterly to review their performance. Majority of participants as responded that:

"Well and a good one, the report was prepared from the registries and mainly send to Psi Healthy Heart Africa initiative in monthly and quarterly bases; they remind us if any problems with the report to be corrected as well as, we undergo a review meeting quarterly organized by Psi Healthy Heart Africa initiative in collaboration with Regional Health Bureau" (Interview with ST, health center chronic care staff).

Table 3: Summary of negative and positive to the health centers chronic care practice

Health Care Organization support	
Weaknesses/Threats (Negative)	Strength/Opportunities(Positive)
• Lack of explicit chronic care goals, less priorities chronic disease care in their care plan • Relative shortage of funding to support activities for chronic care • Shortage of health care workers & equipment for chronic care support	• Established performance monitoring and multi-disciplinary teams which monitors organization achievement • Provided training to health care workers in specific disease • Working together with partner (PEHHAI)
Community Resource Mobilization and Linkages	
• Lack of participation and access to community-based organizations • Poor sense of program ownership by health managers and less priorities chronic disease care • Lack of coordination between the chronic care staffs, the primary health care team and external services	• Established community visiting team (Family health team) • Community campaigns (screening for HPT) • There is established primary health care team including chronic care team which goes to the community to undertake preventive measures
Self-Management Support	
• Limited focus on family and community-based educational activities • Lack set goals with clients • Lack of standard guidelines, trainings & documentation for Self-management goals in client files.	• One to one patient education and risk factor assessment for clients • Provide teaching aid materials especially for HPT cases: booklet, pamphlets, leaflets

Summary of comments continued…

Decision Support	
Weaknesses/Threats (Negative)	Strength/Opportunities(Positive)
• Lack of integration of specialists service into primary car • Limited teaching aid materials for diabetic cases	• Distribution of clinical guidelines, protocols, standing orders, formats and their integration with daily care • Providers training in specific disease management
Delivery System Design Support	
• Lack of defined roles and responsibilities to heath care workers& standard staff composition • Shortage of staffs especially doctors, behavioral health professional, case manager and counselors; • Lack clinical case management service, continuity of care monitoring	• Designated chronic disease coordinators, provided clinic rooms for chronic care • Schedule appointment system and follow-up care • Effective teamwork
Clinical Information System Support	
• Lack installation of computerized systems • Limited capacity to supply population-based information & data (registry) • Registry lack remainder and prompts (progress)	• Organized paper based patient records and recalls • Monthly performance monitoring report • Quarterly performance monitoring review meeting

8. DISCUSSION

This study shows that participated health centers had adapted little to basic system support to chronic illness care particularly for hypertension and DM cases in relation to Chronic Care Model concept. This study may be helpful to understand how well we're handling chronic diseases in the primary health care setting; which were tailored for prevention and control of chronic illness in the country. Participated health centers had both strengths and weaknesses in each six system components and there was considerable room for improvement in all system components and discussed as follow:

1. Health Care Organization Support

The report shows health managers less priorities chronic disease care in their organization care plan and chronic care goals were not explicitly included in their business plan. This is comparable with Wagner and colleagues reported their experience in the chronic condition Breakthrough Series, barriers to chronic care included health center leaders who failed to develop a practical vision for the change or who involved themselves less in the care plan. Wagner and colleagues also suggesting top management support and open communication on error and failings as well as putting strategies for improvement should be considered as a health priority and a vital part of each organization's strategic plans to effective care of chronic conditions [5]. The study shows there is also a relative shortage of funding and materials to support activities related to chronic illness care. This is consistent with Fußstetter Anton(World Bank Group) Policy Brief stydy in Ethiopia Health Systems Challenges and Opportunities that stated primary health facilities were ill equipped with the medical supplies, expertise inequality in health provision and financing are pressing issues in the Ethiopian health system; Health policy should give emphasis to shifting patterns of communicable to non-communicable diseases and injury [18].

2. Community Organizations Support

This study indicates, this system component was least developed area and we're falling short even to recognize it. The report also shows none of health centers develop partnership and working with any community-based Organizations as well as mobilize resources needed to support chronically ill. Health planners missed developing effective communication networks and support arrangements with local community-based organizations. Which is incomparable to

Wagner and colleagues reported mobilizing community-based organization and links to patient-oriented community resources help to activate and inform patients and families to better cope with the challenges of living with and treating chronic illness. Effective chronic illness management requires an appropriately organized delivery system linked with complementary community resources available outside the organization [4]. No one of centers assess for needs of patients other than medical as psychological, social, and economic barriers to care. This report is consistent with Victoria H. Reimar diabetes in Sub Saharan Africa; report that barriers to accessing diagnosis and treatment included high cost of diabetes treatment and a lack of diagnostic tools and glucose monitoring equipment. The total annual cost of diabetes in the region was estimated at US$67.03 billion or US$8836 per diabetic patient [48].

3. Self-Management Support

WHO, Innovative Care for Chronic Conditions: building blocks for action: global report indicates self-management support is a critical component of chronic care management such as diabetes /hypertension and requires that patients be equipped with the proper skills and knowledge to largely manage their condition on their own. So that, the chronic care conditions calls for a structural change in the way people with illnesses are cared for, requires lifestyle and daily behavioral change and the participation of patients themselves [45]. However, this study is inconsistent to World Health Organization, Innovative Care for Chronic Conditions report in many as in its limited uptake such as: less involvement of patient and families in their care plan and lack of goal setting with clients, documentation of self-management activities, standard guidelines for self-management, training on self-management and peer/group session education. But, however strengthened by one-to-one education and assessing for risk factor such as smoking, chat chewing, excessive alcohol intake & inactivity; this is comparable to Dermot Maher Strategy for the primary care contribution to NCD control to complement the multi-sectorial measures aimed at primary prevention of NCDs, everyone seen in primary care should be assessed for common risk factors such as smoking, alcohol and obesity, and counseled on life style modification [17].

4. Delivery System Design Support

The study shows delivery system performance was also little adopted component that most of health centers responded they suffered from a shortage of staff, and only three health centers had a general practitioner. None of health centers adopted continuity of care and planned visits for delivering multiple services to clients. This report is consistent with study done by Feleke and Enquselassie, an assessment of the health care system for diabetes in Addis Ababa, Ethiopia, that reported a lack of professionals was observed in all the health institutions in general and the health centers, in particular. Hypertension (34%), diabetes related eye disease (33%) and renal disease (21%) were the major associated illnesses observed among the diabetics. Health services in many under-resourced settings typically provide only episodic interventions [30]. Another study by ICAP at Columbia University Mailman School of Public Health in collaboration with the Ethiopian Diabetes Association also similarly report that: Delivery systems are often designed for the relief of acute symptoms, rather than the maintenance of well-being or the prevention, care, and treatment of chronic conditions. Implementation of continuity care may be unfamiliar to policy makers and health workers, who lack effective local models to draw upon, and to patients accustomed only to acute or episodic care. From a practical perspective, marked shortages of appropriate space, staff, and infrastructure prevent health facilities from establishing continuity services, and the expense and difficulty of accessing care leads patients to defer the routine visits so critical for the prevention, monitoring, and treatment of chronic disease [15].

5. Decision Support

This promotes clinical care that is consistent with scientific evidence and patient preferences by embedding evidence-based guidelines within daily clinical practice, sharing guidelines and information with patients to encourage participation, using proven provider education methods, and integrating specialist expertise and primary care. The use of simple standard protocols for diagnosis, treatment, follow-up and, when necessary, referral of patients with common NCDs can ensure a structured approach to delivering quality care [35].This report is consistent with the above evidence in its better uptake system for this component. Participate health centers practice with recently revised standard clinical guidelines and protocols, standing orders, as well as

different formats were universally distributed to health centers to facilitate clinical decision-making, and all health centers reported integration of these guidelines into their day to day care. Even though, it was limited to hypertension cases. However, this system component was weakened by lack of integration for specialist service in primary care; it was mainly through traditional referrals, and visiting experts to health centers were perceived generally as not frequent enough to meet needs of chronically ill.

6. Clinical Information System Support

This component is critical to organize patient and population data to facilitate efficient and effective care by providing timely reminders for needed services, information necessary to monitor patient health status, with the summarized data helping to track and plan care. This domain of system was also better adopted in the health centers, most of health centers had organized and easily accessible patient records such as patient chart, appointment card and log sheet, registration logbook and other formats in place and also each format filled with needed information; which is positively related to experience reported from the USA [36]. However, all health centers impeded by lack electronic patient records in measuring and in managing chronic diseases therefore it cause a really problem; as Bodenheimer T. et al reported computerized registers provide essential information to assure access to timely, relevant data about individual patients and populations of patients from clinical information systems. A computerized disease registry that includes critical information about each patient and the performance and results of important aspects of care enables care teams to call in patients with specific needs, deliver planned care, receive feedback, and implement reminder systems. Computerized registries can also track high-risk patients, highlighting those who need more intensive management. That information is the key to effectively assessing the health system and improving it [5]. However, this study shows health centers adopted Paper based health records which are still essential that would tell us who are getting care, what kind, and how it's working but it need more strenuous efforts and audits compared to electronic medical record.

9. STRENGTHS & LIMITATIONS OF THE STUDY

The use of qualitative data in this study enhanced me to assess the status of primary health care system organized for chronic illness management in relation to evidence-based practice and is the first to explore a qualitative data. Moreover, the in-depth interview was supplemented with observation notes and document review. The data may be subject to respondent bias, as staff interviewed may describe their health center systems in a more favorable or less critical than warranted by actual conditions. However, the information obtained was assessed for consistency with observations and reviews. The other limitation would be its cross-sectional study nature, availability of limited local researches and also this study looked for the provider perspectives only, patient perspectives would not been addressed.

10.CONCLUSION

This study identified several areas of strengths and weaknesses and determined the extent to which we handled a chronic illness care by using standard protocol Chronic Care Model framework, which might be useful in assessing and guiding development of system for improvement of chronic care in primary health care. An adaptation of the CCM model would serve as a template for future health care system redesigning & help to improve access to quality and effective chronic care services especially in primary health centers. Distinct areas of strength suggest that health centers are generally keeping abreast with the international practice in developing chronic care-oriented system, On the other hand, identified weaknesses points to the policy makers to continue investment in primary care systems to create a positive environment for shaping areas need improvement.

11.RECOMMENDATION

This study translated the concept of Chronic Care Model and demonstrated its practical application into Addis Ababa primary health centers that would help to improve the primary health care system for chronic care delivery and respond to increasing burden of NCDs and related high-risk lifestyles, resource utilization and management schemes. This study recommends the use of CCM framework, to reduce the rising burden of morbidity, disability and premature mortality, related to NCDs through a primary care strategy; it helps us to identify and address modifiable risk factors, screen, diagnose, treat and follow-up patients with common NCDs. Furthermore, it is widely adapted standard, comprising a goal, strategy and targets for NCD control and indicators to measure progress towards increasing the impact of primary care interventions on chronic NCDs. Such most efficient strategies for improving & understanding the quality of primary care systems for prevention and management of chronic illness should be taken as encouragement, and as a reason for action. Consequently, decision-makers and care givers have to consider the proposed framework to borrow and implement to improve quality of chronic care and manage allocation of resources as efficiently as possible.

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ANNEX

Assurance of Principal Investigator

The undersigned agrees to accept responsibility for the scientific ethical and technical Conduct of the research project and for provision of required progress reports as per terms and conditions of the Research Publications Office in effect at the time of any Grant is forwarded as the result of this application.

Name of the student: _____

Date, _____ Signature _____

Approval of the primary Advisor

Name of the primary advisor: _____

Date, _____ Signature _____

Consent Form

Hello! How are you? My name is _____ I am here on behalf of the Addis Ababa University College of Health Sciences School of Public Health post graduate research team, the objective of this study is to assess the strategy tailored for prevention and control of chronic illness in relation to Chronic Care Model, which is important to improve quality of chronic care in primary health care system. Your health center was the one tailored for chronic care project so that; it was selected to participate in this study. Your willingness and cooperation for the interview is helpful in identifying problems related to the service and will give us quite useful information to achieve the objective of the study. I would like to interview you a few questions about your experience and opinion regarding a system support for chronic care in relation to semi-structured questioners while you are use in this public health center. The information you provide us is completely confidential and will not be shared with anyone else without your consent. Your name or any identifying information will not be registered. You may refuse to answer any question and choose to stop the interview at any time. The information you provide us is extremely important and valuable, as it will help the Government and the health facilities involved in service provision to improve the quality of service delivery.

Do I have your permission to continue?

1- Yes 2 - No

If the answer is yes, thanks! Conduct the interview.

If the answer is no, Thanks! Proceed to the next eligible provider

Interviewer: Name_____, signature_____

Supervisor: Name _____, signature _____

Date----------

Semi-Structured Chronic Care research questioner

Thank you for doing this survey with us. Please tell us to complete the following non-identifying information, which help to create a picture of current chronic care service.

1. Demographic characteristics

Where is your current work

What is your health profession belonging to? (Please tick one category which describes your profession)

- ☐ Doctor
- ☐ Health officer
- ☐ Nurse
- ☐ Behavioral health officer
- ☐ Psychiatric nurse
- ☐ Other, please specify

Do you have a primary management role?

☐ Yes ☐ No

How long have you worked in this profession?

- ☐ < 6 months
- ☐ 6months-3yrs.
- ☐ 3-5yrs.
- ☐ >5yrs.

Have you received training to work with chronic care clients/patients?

- ☐ On the job training
- ☐ Out the job training
- ☐ Professional development
- ☐ No specific training
- ☐ Other, please specify

2. Semi-Structured Interview Guide for Chronic Care developed in relation to Assessment Chronic Illness Care Version 3.5

I. Health Care Organization Support

1. Question: Can we start with your organization business plan? Thank you! How did your organization business plan reflect chronic care related to hypertension & diabetic mellitus?

   Probe: do chronic care reflected as in your organization strategic, annual plan & how do you monitor/review its performance?
2. Question: How do your organization Provide reward/incentives based on quality of chronic care?

   Probe: reward/incentives could be either financial/non-financial e.g. Recognition
3. Question: Do your organization Develop agreements that facilitate care coordination within and across organizations?

II. Community Organizations Support

4. Question: Do your organization Develop partnerships with local community organizations & mobilize resources to support and as well develop interventions that fill gaps in needed services?

   Probe: working relationship and linking chronically ill patient to local Non-Governmental Organizations, community associations for any needed social support&do provide outreach community service?
5. Question: Do regional health plans coordinate guidelines, measures, resources at the practice level to improve patient care?

   Probe: does Regional Health Bureau recently mobilizes community organization, resources &undertakes monitoring and evaluation to fulfill gaps.

III. Self-Management Support

6. Question: How do your organizations identifies Self-Management needs and activities which are evidenced with documentation?

Probe: Weight reduction goal with clients, follow up & use of standard guidelines for self-management assessment

7. Question: How do your organizations provide education, teaching aid materials to increase patient awareness and participation?
8. Question: Do your organizations have trained professionals on self-management support & established self-management case team?

   Probe: is there professional like nurses, psychology, behavioral health professionals trained on self-management need assessment and follow up care?
9. Question: How do your organization gets family &/or peer support for chronically ill?

IV. Decision Support

10. Question: How do your organizations practice with evidence-based guidelines, reminders, formats and standing orders & share it with patients in order to gain their participation?
11. Question: How do chronic cares providers get updated with evidence based scientific information?

    Probe: provider training including proven provider-based learning such as common case presentation with expertise.
12. Question: Does your organization integrate specialist/expertise to primary care?

    Probe: is there any for example,briefphone consultation, mentoring/coaching with specialist/expertise?

V. Delivery System Design Support:

13. Question: How do your organization chronic care team established?

    Probe: do chronic care team have defined roles responsibility &/or job description &what do you think about their composition?
14. Question: How do your organizations arrange follow up care & planned interaction with patients to monitor a treatment care plan?

    Probe: a treatment care plan including phone/email interaction & monitoring of patient treatment outcome such as missed, lost & died.

15. Question: Do your organizations provide clinical case management service for complex patients?

    Probe: for example, organized expert group visit day for foot care, eye care…

16. Question: How do your organizations ensure continuity of care?

    Probe: develop minutes of memorandum or getting decision of other concern bodies to ensure accountability in some cases whether to continue/cease/ stop a treatment care plan?

VI. Clinical Information System Support

17. Question: How do your organization chronic care medical record systems adopted?

    Probe: either of Electronic medical record (EMR) system or paper based medical record.

18. Question: Do your organization chronic care medical record systems provide timely reminders & identify relevant subpopulation groups for proactive care?

    Probe: remainders/prompts that recall provider with summery of services needed at a time & Subpopulation groups those patients enrolled in certain time cohort with certain same need and care plan

19. Question: How do your organizations obtain feedback to evaluate performance of chronic care plan?

    Probe: has it been on timely, specific to the team and focused to improve performance?

CURRICULUM VITAE

1. PERSONAL DATA

First Name: **ANDUALEM** Middle Name: **TAMENE** Last Name: **OYIDA**

Cell Phone: 09-29-04-66-10 Email:andualem589@gmail.com

Marital Status: Single Gender: Male

Date of Birth: 3/Sept/1981G.C Country of Origin: Ethiopia

2. EDUCATION:

Degree Earned:

BSC in Senior Public Health Officer from ALKAN Health Science and Business Collage, Addis Ababa Ethiopia August, 2015G.C

Diploma in senior clinical nursing from Hossana Health Science College Nov, 2005 G.C

High School & Secondary: Wolayita Soddo Compressive Secondary School

Elementary School: Wolayita zone kindo Koysha Woreda, Bele Junier & Elementary School

3. OTHER SHORT COURSES

Basic computer skill (MS-offices), Epi Info &SPSS

4. WORK HISTORY

Arada sub-city health office health center reform & referral officer Addis Ababa	May 23, 2015-June 30, 2017 GC.

Duties and accomplishments:

- Develop & Conduct detail annual work plan; prepare and conduct training on health care financing reform, referral linkage for Health professionals workers and ensure quality of training with acceptable standards. In general monitor, evaluate and report timely to senior level.

Zewuditu memorial hospital staff nurse, as operation room scrub nurse, gyn & obs ward nurse, emergency room nurse	July, 2008-may, 2015 GC.

Duties and accomplishments:

- Generally, Develop & Conduct compassionate caring and respectful nursing care plan, working in team with hospital Health professional workers (Doctors, nurses, anesthetist's managers and others), administering prescribed drugs and patient care at different departments.

Woreda Health center and Expanded Immunization Program Coordinator, at SNNPR Wolayita zone Bele health center	Nov, 2004-2009 GC.

Duties and accomplishments:

- Develop & perform field schedule, day-to-day cold chain management, Lead the development of strategies and manage existing programs and resources, and provide day-to-day supervision, management and coaching to a wide team.
- Compiling, analyzing data and reporting weekly IDSR report to woreda Health Department.
- Analyzing IDSR data by person, place and time and presenting the findings for local use.
- Make available surveillance and EPI guidelines, report formats and posters available for health care provide.
- Preparing annual, semi-annual, quarter and monthly plan of activities and submit to immediate supervisor.
- Integrate passive and active case search especially for vaccine preventable diseases in the district by identifying the low, medium and high risk areas.
- Representing the district in IDSR (integrated Diseases Surveillance and Response) and EPI meetings and trainings
- Responsible for strategic plan, implement and monitor/evaluate all EPI programs in health center and communicate with stakeholders in the area.

ART care Program Coordinator, at SNNPR Wolayita zone Bele health center	May, 2005-Nov, 2009 GC.

Duties and accomplishments:

- Comprehensive ART HIV/AIDS department as focal person and clinical team member
- Regularly monitor and support patients' adherence to standard treatment protocol

- Regularly follow and counsel patients for drug side effect
- Regularly perform performance evaluation appraisal for subordinates with development plan.
- Perform monthly, Quarterly &yearly report.

5. DATA COLLECTION EXPERIENCE

National post measles SIA Coverage Survey, Ethiopian public health institute (EPHI) east &west Hararege zones (Oromia) and gursum Woreda (Somali)	March14/2017toJune20/2017 GC
community based Global Adult Tobacco Survey Ethiopian public health institute (EPHI), Guji zone Oromia & liben zone Somali	August 22/2016 to sept 25/ 2016 GC

Duties and accomplishments:

- Collect compile and report timely base of qualitative and quantitative data.
- Work on team to achieve the objective of the survey
- Collect electronic data with hand tabs for quantitative surveys by using different electronic data collection software

6. TRAINING AND PROFESSIONAL DEVELOPMENT

No	Training and Professional Development.	organizer	Period of Training
1	Expanded Program of Immunization Training (EPI)	USAID with SNNP Regional Health Bureau	December 12-14, 2007 GC Wolayita, Soddo
2	Leadership, Management and Governance Workplace Team Based Training	USAID/SEUHP with AA Regional Health Bureau	Nov 2016 to August 2017 GC Addis Ababa
3	Antiretroviral Therapy and Management of Opportunistic Infections	WHO with SNNP Regional Health Bureau	August 20 to sept 1,2007 GC
4	National Compressive HIV Care/ART Training	Management Science for Health (MSH)/HCSP & SNNP Regional Health Bureau	June 9 to 21, 2008 GC Hawassa

5	Essential Nutrition Action (ENA) Training	USAID with SNNP Regional Health Bureau	Nov 17 to 21 August 2007 GC Wolayita, Soddo
6	Prevention of Mother to Child Transimition of HIV (PMTCT) Training	SNNP Regional Health Bureau	June 26 to 30, 2007 GC Hawassa
7	Management of New Born and Child Hood Illness (IMNCI) Training	USAID with SNNP Regional Health Bureau	Feb 10 to 15, 2007 GC Wolayita, Soddo
8	TOT Liaison Officer Training	Ethiopia FMOH and AA Health Bureau	December 2 to 5, 2016 GC Addis Ababa
9	Management Theory and Skill Training	Myung sung Christian Medical center	April 18, 2011 Addis Ababa

7. LANGUAGE SKILL

Language	Speaking and listening	Reading & writing
English	Fluent	Fluent
Amharic	Fluent	Fluent
Wolayitigna	Fluent	Fluent
Dawurigna	Fluent	Fluent
Goffigna	Fluent	Fluent

8. REFERENCES

1. Estifanose Negash 0911063494 (Addis Ababa City Administrative Arada Sub City Health Office curative core process*(head)
2. Abas Husen 0910342855 (Addis Ababa City Administrative Health Bureau Curative core process (head)
3. Dr. Terefe Xika 01115510128 (Zewuditu Memorial Hospital Chief Executive)
4. Wadu Marshalo 0911088754 (Wolayita Zone Health Bureau Pharmacy Head)