EXPLORING THE ISSUES BEHIND CENTRALISED CHRONIC MEDICINE DISTRIBUTION AND DISPENSING (CCMDD) PROGRAM FAILURE TO PROVIDE ACCESS TO CHRONIC MEDICINES IN ETHEKWINI, SOUTH AFRICA

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Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Business Administration by Bonginkosi Theresa Mkhize

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ABSTRACT

Exploring the Issues Behind Centralised Chronic Medicine Distribution And Dispensing (CCMDD) Program Failure to Provide Access to Chronic Medicines in eThekwini, South Africa

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This research explored the issues behind failure to provide access to chronic medicines through the Centralised Chronic Medicine Distribution and Dispensing (CCMDD) program in eThekwini, South Africa. CCMDD is a strategic chronic care quality improvement program aimed at improving chronic patient health care through increasing access to chronic medicines required for long-term drug therapy for enduring illness.

The various issues behind failure to provide access to chronic medicines through CCMDD program are not understood. According to the extant literature, there is a lack of management research regarding the reasons why community-based distribution and dispensing fails to increase access to medicines. Moreover, existing studies do not focus on management behavioural science values and governance behind the provision of governable and sustainable health care.

This study used exploratory qualitative methods that were conducted using an action research approach. The study utilized a purposeful sampling strategy; therefore its findings may not be generalizable. They, however, may be utilized as a benchmark in other similarly affected settings. The source of data was fifteen key informants that consisted of; frontline healthcare providers (doctors, nurses, pharmacists), policymakers, managers, and public health experts from multiple sites. The key informants were purposively selected based on the knowledge and experience with the CCMDD program. Data collection included; interviews, nonparticipant observations, and document review. In-depth interviews were conducted using a semi-structured interview guide from June to July 2019. Data analysis was carried out through deductive thematic analysis using the Nvivo software.

Data analysis findings and interpretation in chapter 4 and 6 revealed that the key contributing factors to CCMDD program failure included; (1) Perception issues, (2) Absence of guiding policy, (3) CCMDD program Contract management, (4) Lack of human resource capacity, through the (4.1) Utilization of non-clinicians, and a (4.2) Lack of medicine storage skill. Furthermore, findings indicated that there are apparent observable

patterns for the CCMDD program problem and its identified components. Based on empirical findings the research problem was scoped down from four domains to two subdomains, namely, perspective issues (6.1.1) and organizational processes of knowledge sharing (6.1.3) which fall under organizational control. The reason for this was that findings indicated that Policy (6.2) Human Resource capacity (6.4) and Contract management (6.3) can be excluded from the study because they are centralised at Ministry level and are thus beyond the organization's control and scope of influence. .

Findings indicated that: 1. Diverse belief systems between senior and operational management negatively influenced the CCMDD program and contributed to its implementation problems. 2. Inadequate organizational processes of knowledge sharing regarding the importance and alignment of the CCMDD program with the overall health service provision strategy contributed to implementation problems with consequent program failure.

The main recommendations are; 1. Personnel training to mediate belief systems regarding CCMDD program implementation 2. Establishment of organizational processes to improve knowledge sharing among personnel, managers, and departments

The main actions taken to mediate belief systems regarding CCMDD program implementation are: 1. Utilization of participatory action research cycle of action, reflection and sense-making to enable multistakeholder engagement to problematize, reframe and develop an intervention plan, using the CCMDD program problem as a trigger for organizational change (2.5). The main actions taken to improve organizational processes of knowledge sharing are: 1. Development of Terms of Reference (TOC) to clarify multistakeholder roles and responsibilities regarding CCMDD program implementation. 2. Sharing of knowledge by disseminating the TOC to the multidisciplinary Management Team members (6.4).

The foremost outcomes in the first, second and third person practices are: 1. Knowledge and practical experience of utilization of insider participatory action research methods to engage multistakeholder for organizational level problem solving (first person practice). 2. Higher organizational problem-solving insight that pinpointed leverage points for organizational change using CCMDD program work-based problem as a trigger point (second person practice). 3. Written actionable evidence-based knowledge that contributes to practically relevant extant literature, for instance, findings, recommendations, actions and outcomes (third person practice).

Keywords - access to medicines, Centralised Chronic Medicine Dispensing, and Distribution Program, health care, stakeholder engagement, management policy, governance.

Table of Contents

ABSTRACT 3

1.Introduction 16

1.1. Background and thesis scene-setting: Chronic diseases and resource limitations in South Africa 17

1.2. Managing Community-Based Distribution to overcome resource limitations in South Africa 18

1.3. Managerial perspectives on potential cause-effect relationships related to the problem domains in community-based distribution and associated problems 20

1.3.1 Perspective Issues ***21***

1.3.2. Absence of guiding policy ***22***

1.3.3. CCMDD program Contract management ***23***

1.3.4. Lack of human resource capacity ***24***

1.3.5. Utilization of non-clinicians ***24***

1.3.6. Lack of medicine storage skill ***25***

1.3.7. Initial view of the problem and apparent relations ***25***

1.4. Research objective 26

1.5. Managerial perspectives on problem domains, determinants, variables and stakeholders involved in Community-Based Distribution and associated problems 27

1.5.1. Literature support for identified different problem parts and apparent relations ***29***

1.5.2. Systems dimension to the CCMDD program problem ***32***

1.5.3. Applying the action research lens to the CCMDD program problem and rationale ***32***

1.6. Research problem statement 33

1.6.1.Research problem question ***34***

1.6.2.Interview guiding questions ***34***

1.7. Research methods 36

1.8. Thesis outline 37

1.9. Summary of study overview 38

2. Introduction 39

2.1. Research Philosophy 39

2.2. Data that needed to be gathered in actioning the problem: Key questions for stakeholder engagement 40

2.3. Action Research - Stakeholder engagement as a method of choice to answer the research question. 42

2.3.1. Stakeholder identification methods ***42***

2.3.2. Stakeholder categorization according to the different parts of the workplace-based problem ***42***

2.3.3. Stakeholder prioritization methods to structure the data gathering schedule ***45***

2.3.4. Stakeholder engagement techniques and methods to bring out their different perspectives and supporting literature ***45***

2.4. Methodological approach 47

2.4.1. Data collection and analysis ***48***

2.4.2. Action research cycle ***48***

2.4.3. Data validity through triangulation and action research reflexivity ***51***

2.5. Action research cycle of action, reflection and sense-making 53

2.5.1. Techniques and methods utilized to engage with the respective stakeholders and to bring out their different perspectives ***53***

2.5.2. Outcomes of identified Stakeholders' approach and perceptions about the workplace-based problem and its domains ***54***

2.6. Critical reflections and meta-learning about the outcomes of first stakeholder engagement findings and evaluation 58

2.6.1 First person practice meta-learning: Practical experience of the application of literature-based stakeholder engagement techniques to bring out different perspectives about the CCMDD program problem ***58***

2.6.2. Second person practice meta-learning: Knowledge and data about stakeholders' approach and perspectives on the workplace-based problem and the different parts initially identified ***59***

2.6.3. Third person practice meta-learning: Stakeholder impact on research outcomes, focus and scope ***60***

2.7. Sensemaking from the action research cycles and plan of action 63

2.8. Nvivo thematic analysis 63

2.9. Ethical considerations 67

2.10 Chapter summary 67

Chapter 3 - Literature review 68

3. Introduction 68

3.1. Different scientific disciplines from which the problem can be approached and literature support 68

3.1.1. Sustainability science ***69***

3.1.2. Medical and health care sciences ***69***

3.1.3. Humanities and Social science ***70***

3.2. Frameworks that support potential cause-effect relationships in CCMDD program failure 70

3.2.1. The United Nations (2012 Access to the medicine's governance framework ***72***

3.2.2. Health Systems Dynamics framework ***72***

3.2.3. Systemic Approach to medicine access ***73***

3.3. Key studies that support potential cause-effect relationships for perspective issues in this study 74

3.3.1. Connecting People perception (1.3.1) issues relationship through stakeholders and frameworks ***74***

3.3.2. Perceptions are influenced by experiences, values and belief systems ***75***

3.3.3. Perceptions are dynamic irrespective of dealing with the same health intervention program ***76***

3.3.4. Perceptions are influenced by organizational climate and culture ***77***

3.4. Managerial perspectives on potential cause-effect relationships related to guiding policy issues and contract management 79

3.4.1. Executive authority and control ***79***

3.4.2. Systems for ensuring accountability and their influence on program performance . ***79***

3.4.3. Contract management executive authority and control ***79***

3.4.4. Organizational processes and procedures for contract management and their influence on program performance ***80***

3.5. The role of Human Resource Management and its relation to the health care system context 80

3.5.1. Human resource executive authority and control ***80***

3.5.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation *81*

3.5.3. Comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration, and deployment *81*

3.6. Summary of literature review 81

Chapter 4 - Findings and evaluation 83

4. Introduction 83

4.1. Perspective Issues in community-based healthcare provision and associated problems . 83

4.1.1. Belief systems and their influence on CCMDD program implementation problems. *85*

4.1.2. Organizational environment (structure, function, culture) and its impact on lack of program ownership *88*

4.1.3. Organizational processes of knowledge sharing and their contribution to implementation problems *91*

4.1.4. Organizational processes of monitoring and oversight functions and their contribution to poor accountability *97*

4.2. Absence of guiding policy and associated problems 98

4.2.1. Executive authority and control *98*

4.2.2. Resource allocation and its impact on implementation *100*

4.2.3. Systems for ensuring accountability and their influence on program performance *104*

4.3. Contract management in community-based healthcare provision and problems 106

4.3.1. Contract management executive authority and control *106*

4.3.2. Organizational processes and procedures for contract management and their influence on program performance *107*

4.4. Lack of human resource capacity and associated problems 108

4.4.1. Human resource executive authority and control *108*

4.4.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation *110*

4.4.3. Comprehensive, flexible, health workforce policy and the practice of non-clinicians at community sites *111*

4.4.4. Flexible human resource recruitment, training, and deployment and the practice of non-clinicians at community sites *113*

4.5. Summary of findings and evaluation 115

Chapter 5 – Discussion 123

5. Introduction 123

5.1. Perspective Issues in community-based healthcare provision and associated problems 123

5.1.1. Belief systems and their influence on CCMDD program implementation problems *123*

5.1.2. Organizational environment (structure, function, culture) and its impact on lack of program ownership *124*

5.1.3. Organizational processes of knowledge sharing and their contribution to implementation problems. *125*

5.1.4. Organizational processes of monitoring and oversight functions and their contribution to poor accountability *126*

5.2. Absence of guiding policy and associated problems 127

5.2.1. Executive authority and control *127*

5.2.2. Systems for ensuring accountability and their influence on program performance. *128*

5.3. Contract management in community-based healthcare provision and associated problems 129

5.3.1. Contract management executive authority and control *129*

5.3.2. Organizational processes and procedures for contract management and their influence on program performance *130*

5.4. Lack of human resource capacity and associated problems 130

5.4.1. Human resource executive authority and control *130*

5.4.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation *131*

5.4.3. Comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration, and deployment *132*

5.5. Chapter Summary 133

6. Introduction 136

6.1. Perspective Issues in community-based healthcare provision and associated problems 136

6.1.1. Belief systems and their influence on CCMDD program implementation problems136

6.1.2. Organizational environment (structure, function, culture) and its impact on lack of program ownership..... 137

6.1.3. Organizational processes of knowledge sharing and their contribution to implementation problems 138

6.1.4. Organizational processes of monitoring and oversight functions and their contribution to poor accountability..... 139

6.2. Managerial perspectives on potential cause-effect relationships related to guiding policy issues and contract management..... 140

6.2.1. Executive authority and control..... 140

6.2.2. Optimal resource allocation and its impact on implementation 141

6.2.3. Systems for ensuring accountability and their influence on program performance 141

6.2.4. Contract management executive authority and control 142

6.2.5. Organizational processes and procedures for contract management and their influence on program performance 143

6.3. The role of Human Resource Management and its relation to the health care system context..... 144

6.3.1. Human resource executive authority and control..... 144

6.3.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation 145

6.3.3. Comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration, and deployment..... 146

6.4 Recommendations and actions taken..... 147

6.4.1. Belief systems and their influence on CCMDD program implementation problems147

6.4.2. Organizational processes of knowledge sharing and their contribution to implementation problems. 148

6.5 Outcomes – First, Second and Third person practices 150

6.5.1. First person practice outcomes 150

6.5.2. Second person practice outcome..... 151

6.5.3 Third person practice outcome..... 151

6.5.4. Study limitations and future research..... 151

6.6. Summary of conclusions, recommendations, and actions taken per problem domain, research question, interview guiding questions and implementation level 152

List of References 159

Appendix 1 – CCMDD program Nvivo data thematic analysis 168

Appendix 2 – Nvivo thematic analysis of initial problem mapping data 197

Appendix 2A - Nvivo micro-level coding word trees of key concepts of the study 203

Appendix 3 – Participant consent form 210

Appendix 4 – Interview guiding questions. 213

LIST OF TABLES

Table 1. 1 Multiple stakeholders and the various perspectives that contribute to failure to increase access through CCMDD program and supporting literature 28
Table 1. 2. Linking CCMDD program issues with existing frameworks 31
Table 1. 3: Interview guiding questions 35
Table 1. 4 Key informants based on expertise and knowledge 37
Table 2.1 CCMDD program action research stakeholder engagement matrix 44
Table 2. 2 Stakeholder engagement methods and related frameworks 46
Table 2.3. Stakeholder interaction impact on the research problem scope. 62
Table 5.1. Empirical findings-based answers to questions according to-problem domains, determinants, variables, and related stakeholders 134
Table 6.1 Summary of conclusions and recommendations per problem domain interview guiding questions and implementation level 153

LIST OF FIGURES

Figure 1.1. Problem overview 19
Figure 1.2. Problem Background..... 20
Figure 1.3. CCMDD program's external clinical environment and related key stakeholders 22
Figure 1.4. CCMDD program issues cause and effect 26
Figure 1.5. - Research Problem and Question..... 27
Figure 1.6. - CCMDD program systemic interlinkages with existing frameworks..... 30
Figure 1.7. - Thesis structure outline..... 37
Figure 2.1- Dentoni (2013) Inductive Multi-Stakeholder Engagements Framework 41
Figure 2.2 - Coughlan and Brannick (2014) -Action research cycles 49
Figure 2.3 – Contextualized action research cycle for this study..... 50
Figure 2.4. Problem mapping results – verification of observed apparent cause effect relationships with stakeholders in the action research cycle 55
Figure 2.4A Problem mapping results for the domains of legislation, policy & guidance and organizational environment (Expanded view)..... 56
Figure 2.4B Problem mapping results for the domains of organizational processes & procedures and people and perspective issue (Expanded view)..... 57
Figure 2.5 - screen grab of the Nvivo thematic analysis 65
Figure 2.6 - Screen grab of the Nvivo thematic analysis table..... 66
Figure 3.1 - CCMDD program issues cause and effect linkages to literature and research 71
Figure 3.2 - Linkages between CCMDD program issues and the United Nations (2012) Access to medicines governance framework analogue 72
Figure 3.3 - Linkages between CCMDD program issues and the van Olmen et al. (2012) framework analogue 73
Figure 3.4 - Linkages between CCMDD program issues and the Bigdeli et al. (2013) Access to medicines through a systemic approach framework analogue 74
Figure 4.1 Problem mapping results – verification of observed apparent cause effect relationships with stakeholders in action research cycle one 94

ABBREVIATIONS AND ACRONYMS

CCMDD	Centralized Chronic Medicine Dispensing and Distribution
CBD	Community -Based Distribution
DoH	Department of Health
GDP	Gross Domestic Product
NHI	National Health Insurance
KZN	Kwa Zulu Natal
NDoH	Non-Governmental Organization
NGO	National Department of Health
PRO	Public Relations Officer
SA	South Africa
SAPC	South African Pharmacy Council
SOP	Standard Operating Procedure
UN	United Nations
WBOT	Ward Based Outreach Teams
WHO	World Health Organization
ZAR	South African Rand

Exploring the Issues Behind Centralised Chronic Medicine Distribution and Dispensing (CCMDD) Program Failure to Provide Access to Chronic Medicines in eThekwini, South Africa

Chapter 1 – Study overview

1. Introduction

The role of management in improving health care provision to increase life expectancy for the benefit of increasing organizational productivity, decreasing organizational cost, and contributing positively to the Gross Domestic Product has been a concern for both scholars and practitioners for long (World Health Organization 2000; Atun et al. 2009). As such, over the last decades, extant literature has increasingly emphasised the importance of integrating management principles such as policy, perspectives, organizational culture, knowledge sharing and human resource management into organizational health care provision models with the aim of providing sustainable health care provision to support business productivity and performance (van Olmen, 2012; United Nations, 2012). Similar ideas have been reinforced by several authors who concurred that the objective of business management is to create value synergies through integration of the economic, social, and health care ecological fields of corporate performance whereby business focuses not only on the customers but in all interested stakeholders (Van Marrewijk & We, 2003; Jonker & Karapetrovic, 2004).

However, emerging research has indicated the importance of focusing on health systems strengthening and the demand for policy-makers to provide management research-based evidence to support their health care decisions (Bennett, 2011; Mills, 2011; Bigdeli, et al, 2015). Authors such as van Olmen, 2012 and Bigdeli et al, 2015 have affirmed that the domain of public health is more thant clinical medicine, health policy and systems because it involves dynamic alliances between actors from scientific, policy and operational backgrounds as well as Non-Governmental Organizations and actors from the private sector. Therefore, stakeholders from different backgrounds, each with their own logic and paradigms have a strong influence which contributes to the perceived lack of clarity (ibid.). Hence the need to explore the underlying issues behind failure to provide sustainable medicine access. It is important to involve stakeholders in the organizations' operations since this can lead to proactive environmental response and subsequently to improved organizational performance (Rasi et al, 2014).

According to the extant literature, the various reasons behind failure to provide access to chronic medicine through the CCMDD program are not understood because there is a lack of management research regarding the issues behind the failure (Bigdeli et al, 2015; Magadzire, Marchal & Ward, 2016). Also, existing literature does not analyse the management focused interactions and dependencies of the elements of a health system from the frame of management complexity principles (ibid.). Moreover, existing studies do not focus on management behavioural science values as significant drivers for people's behavior and governance as well as the consequential impact of those choices and processes in the provision of governable and sustainable health care (Bigdeli et al, 2015; van Olmen et al, 2012). In response to the aforementioned management issues' focus shortfalls, this research is novel because it explores the management behavioural science and governance focused issues behind the centralised chronic CCMDD program failure to provide access to chronic medicine.

1.1. Background and thesis scene-setting: Chronic diseases and resource limitations in South Africa

Health care provision is entrenched in the field of Management because it involves management of multiple inter-reliant stakeholders from various backgrounds, agendas, and attitudes that shape their behaviour (Paina & Peters, 2012). Thus, it requires utilization of multistakeholder engagement methods to manage its complexity (ibid.).

This research is crucial because chronic diseases are the leading cause of deaths globally (WHO,2014). Chronic diseases are drivers of organizational costs due to arising complications and loss of income due to shorter life expectancy, ill health, and consequential loss in the gross domestic product (ibid.). Consequently, the higher value of CCMDD program success lies in increasing life expectancy, decreasing organizational cost, and contributing positively to GDP. Programs such as CCMDD program potentially could increase access to chronic medicines (Magadzire et al. 2015), improve patient care, and save costs (ibid.). However, their successful implementation also requires a high degree of multi-disciplinary collaboration, guiding policy, skilled personnel, and adequate human resource capacity (United Nations - Management for Sciences, 2012; Magadzire, Marchal & Ward, 2016). To alleviate patient overcrowding in resource-constrained healthcare facilities, the South African government implemented the CCMDD program.

1.2. Managing Community-Based Distribution to overcome resource limitations in South Africa

Managing Community-Based Distribution in resource constrained South Africa Provision of chronic medicines at Community-Based Distribution (CBD) sites is the SA government's strategy for achieving improved chronic health care. Disciplined adherence to prescribed medication protocol potentially improves lives and prevents debilitative consequences, such as stroke and premature death (Gubela et al., 2017). Although the government is aware that provision of chronic medicines at CBD sites may not automatically improve adherence, it regards the CBD program as a positive step in the continuous broad program of improving chronic care management within the eThekwini district context.

This research study has a focus on eThekwini district, one of 44 districts that constitute the country of South Africa. It draws parallels from the global environment to provide a balanced view. It is crucial to study chronic disease management through access to chronic medicines and adherence because typically in the SA environment, most patients take chronic medication erratically. Inevitably, they end up in the hospital with debilitating conditions, such as stroke or die prematurely. Such occurrence is predominantly because, in rural areas of SA, most people are affected by high poverty levels, and cannot afford travel costs to clinics that are invariably far away (Eyles et al., 2015; Gubela et al., 2017). The SA state is bound by the country's constitution to realize the right to health for its citizenry.

The eThekwini District has a population of ±3.6 million comprising of both rural and urban areas. Life expectancy is low in eThekwini because of high disease burden. For instance, a high incidence of TB (21%), HIV (8.6%), chronic illness and deaths due to violence and injury (DOH, 2016). The unemployment rate is high at ± 30.2% (1.0 million), and 31% of its populace lives in extreme poverty (HST, 2017). Consequently, the reliance on the public health care system is high. Approximately 55% (1.9 million) people in the district lack housing and live-in shacks which increases the risk of infectious diseases due to poor sanitation and hygiene. Illiteracy levels are high in eThekwini district. For instance, 4.2% (144 000) of the population that is 20 years of age have had no schooling, and only 37.1% (1.3 million) have matric (Stats South Africa, 2011). Consequently, adherence to medicine treatment protocols is still a challenge because its populace has yet to understand its importance in chronic disease management.

To increase access to chronic medicines the Department of Health (DoH) is utilizing the CCMDD program, which involves prepacking, and distribution of chronic medicines

through a private sector service provider. The prepacked medicine must be delivered to collection sites of a patients' choice, for instance, near a place of work or residential area. The CCMDD program aims to make medicine easily available, especially to the rural communities that are dependent on the public healthcare sector (DoH, 2015a). Collection sites external to the healthcare facility environment are known as Pick-up Points (ibid.). As can be seen from Figure 1.1 for people who live in informal homes (shack dweller homes) (picture 1), obtaining chronic medicine from traditional healthcare facilities (picture 3a) involves traveling long distances in hard terrain roads (picture 2).

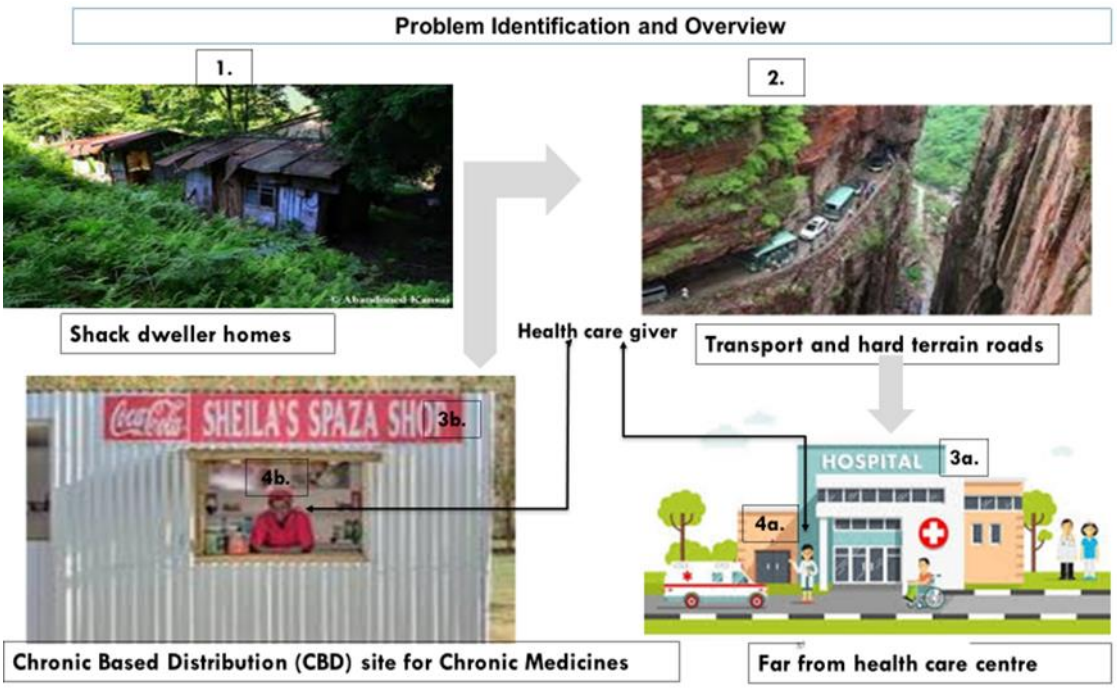

Figure 1.1. Problem overview

However, enrolling to the CCMDD program offers the possibility of obtaining chronic medicine at community-based distribution sites that are closer to home, albeit in an informal site. For instance, an informal small shop in a township, often run from a house, referred to as a spaza shop (picture 4b). The downside is that choosing the community distribution site route involves giving up the attention of a skilled healthcare worker (picture 3a), and accepting that of an unskilled community member, referred to as a health caregiver (picture 4b).

Figure 1.2 (picture 1) illustrates a typical crowded SA healthcare facility whereby because of inadequate infrastructure, patients must wait outside. Once inside, because of the lack of human resource capacity, the patient's waiting time may be further extended (picture 2). The envisaged aim of the CCMDD program is providing the 60% of chronic patients with

medicine at community-based distribution sites, external to the crowded healthcare facilities. For instance, at community halls (picture 3) or retail pharmacies (picture 4).

Picture 1- typical crowded SA healthcare facility ***Picture 2- Long waiting time due to inadequate human resources***

Picture 3- CCMDD program operating in a community hall ***Picture 3- CCMDD operating in a retail pharmacy***

Figure 1.2. Problem Background

To overcome the challenges illustrated in Figure 1.2, a root cause analysis as detailed in section 1.3 is needed.

1.3. Managerial perspectives on potential cause-effect relationships related to the problem domains in community-based distribution and associated problems

There appears to be a number of different problem domains, determinants, and variables as well as stakeholders that constitute the issue that prevents the CCMDD program to increase access to chronic medicines and enrolment rates. Consequently, this study aims to determine specifically about the reasons for such low enrolment rates and more generally why the CCMDD program is not increasing the access to chronic medicines. For example, why some patients are de-registering from the program. Currently, it is not clear

what the various reasons are, or how they are related one to each other, which this study will explore in detail.

From initial observations, the following identified different domains of the problem appeared to exist.

1.3.1 Perspective Issues

As shown in section 4.1, findings indicate that there are issues among stakeholders' perception that prevent the uptake of enrolment to CCMDD program despite several marketing strategies. Perceptions are ideas, values and belief systems that influence people's behavior (Stankov et al., 2017). Studies indicate that perceptions have contributed to failure to increase access to medicine through community-based distribution. For instance, the Kahabuka, Gunnar, Marie, Hinderaker (2012) study found that 59.2% people bypassed community-based sites in Tanzania. De Schepper, Dooms & Haezendonck (2014) found that dynamic and diverse perspectives among multidisciplinary health teams contributed to program failure. Such variance in people's perceptions contributes to the failure to increase access to medicine because people and their relationships are crucial actors in maintaining its sustainability (van Olmen et al., 2012). At the core of this issue, is the perception held by organizational stakeholders that CCMDD program is a Pharmacy program. Such a perception is problematic because it isolates the program to one component and contributes to poor participation by other key stakeholders. For instance, doctor and nurse prescribers, as well as Public Relations Officers (PROs). Prescribers are key initiators of CCMDD program enrolment because they must identify patients who meet set criteria for enrollment, namely, patients who have a history of adherence to prescribed medicine treatment regimens. Pharmacy's key CCMDD program role is patient registration for the program, as well as offering Pick-up Points (PuPs) options. Pick up Points are chronic medicine collection sites that are located external to the traditional healthcare facility environment, for example, community halls (DoH, 2015a). The purpose of PuPs is to increase access to medicine by delivering it to the patient (ibid.). Because PuPs are community-based sites, optimization of their use calls for the participation of the Public Relations Officers (PROs), who play a liaising role between health care facilities and community leadership. Because community and Department of Health structures have different mandates, such intersectoral collaboration requires guiding policy. However, the challenge is that the CCMDD program got implemented without such a guiding policy.

1.3.2. Absence of guiding policy

The nature of the community-based distribution model is that the medicine distribution sites for the CCMDD program fall outside of the standard control that applies to the traditional internal healthcare environment, and as illustrated in Figure 1.3.

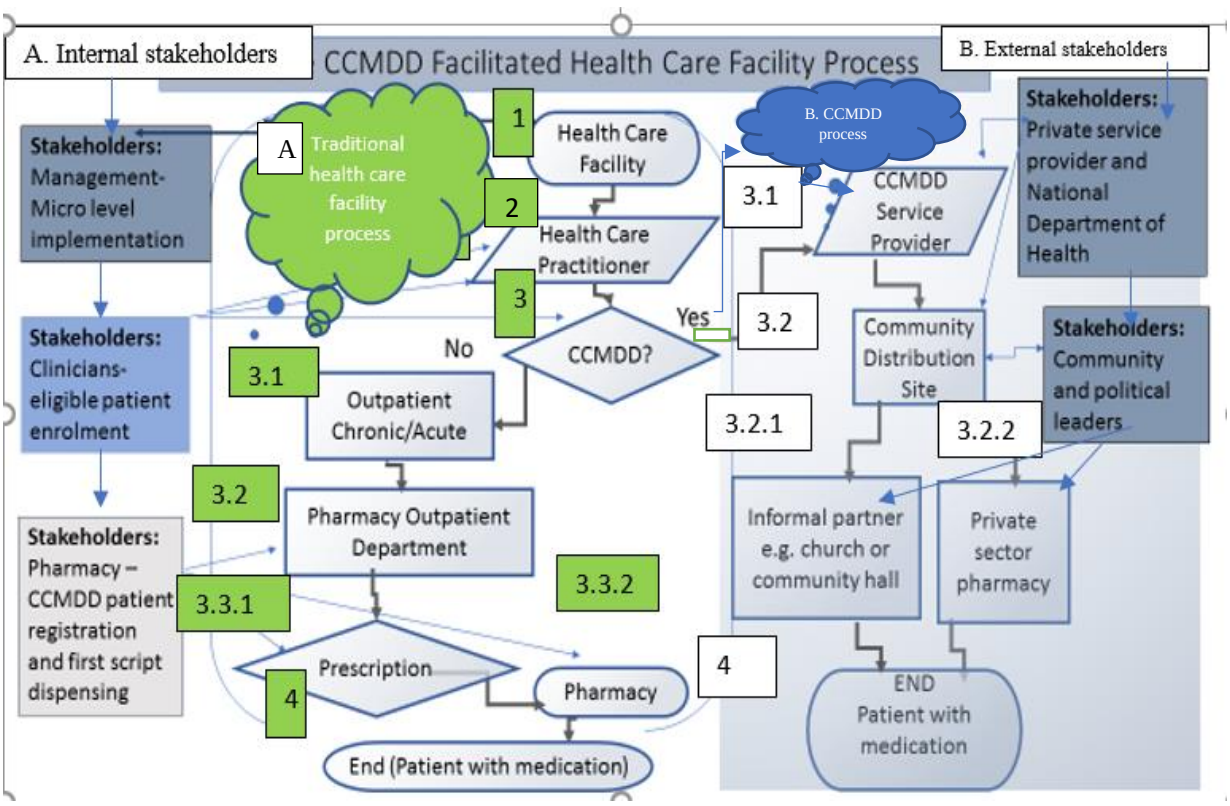

Figure 1.3. CCMDD program's external clinical environment and related key stakeholders

Figure 1.3 indicates the traditional medicine collecting process that patients routinely follow when collecting medicine from a health care facility. This process is illustrated by the green highlighted texts (A) and numbers 1 to 4 that show the steps involved. The traditional health care facility process (A) is compared with the blue highlighted text (B) and white highlighted numbers 3.1 to 4 which indicate the steps that occur externally, for instance, in the private sector and community-based contracted Service Provider sites. Therefore, enrolling in the CCMDD program provides patients a different medicine collection process which involves different steps. In the traditional medicine collecting steps (A) the patient accesses the health care facility (1) where she/he is attended to by a health practitioner (2), who then provides the patient the option to enrol to CCMDDD program (3). If the patient is in agreement (indicated by Yes in figure 1.3) then the patient enters the external CCMDD program medicine collecting process (B) which involves being registered with the contracted Service Provider (white highlighted 3.1). The Service Provider prepacks the

medicine parcel according to the patients' prescription and delivers it to the community medicine distribution site (white highlighted 3.2) which may be an informal contracted partner such as a church or community hall (white highlighted 3.2.1) or private sector retail pharmacy (white highlighted 3.2.2). The process ends when the patient takes receipt of the medicine parcel (white highlighted 4). However, if at the green highlighted step 2, the patient refuses the CCMDD program offer, as indicated by (No) in figure 1.3, then the patient follows the routine health care facility process (A), which involves collecting the medicine parcel from the Pharmacy Outpatient Department (green highlighted 3.2). The process ends when the patient receives the internal- pharmacy- prepacked medicine parcel (green highlighted 4)

Therefore, the DOH governance structure that sustains its healthcare facilities does not apply to the community sites. This is partly because the infrastructure, and personnel at the community level are not within DOH jurisdiction. For instance, church halls belong to specific community municipalities, and personnel at CBDs are volunteers. The consequential lack of role clarification and accountability has contributed to the failure of the CBD program. For instance, patients did not receive their medicine because of service provider failure. Other patients received wrong medicines because of the utilization of unskilled community members at CBD sites. The overall consequence is that patients end up returning to health care facility level, thus compounding health facility decongestion efforts. In the tradition healthcare environment, the Department has built-in control measures to discipline failing service providers. However, the intersectoral CCMDD program contracting process experienced several delays which rendered accountability untenable.

1.3.3. CCMDD program Contract management

According to Department of Health protocol, there must be a contract and Service Level Agreement between the Department and a private service provider before business commences. The resultant legal documents then shape the framework which spells out respective obligations and responsibilities (DoH, 2015a). In the hierarchically controlled health department, contract and service level agreement issues are centralized at the national office's legal department. Information is then cascaded down to district and healthcare facilities' level to guide the implementation process. The challenge is that there was a delay in the CCMDD program contracting process by a month and Service Level Agreement by

four months. Nevertheless, the service provider started working to prevent a break in patient service. However, during the grey area transition phase, there were no transparent service provider-department of health obligations to guide implementation practice. The delayed contract process had a negative impact on service delivery. For instance, the service provider could not be held accountable for failure to collect prescriptions in time from health care facilities. Furthermore, as detailed in section 4.3.2, findings indicate that although contract executive authority and management are centralized at national level, contract management systems were poorly managed, especially during the contract transition period, thus contributing to poor service provider performance.

1.3.4. Lack of human resource capacity

The CCMDD program is not yet in the organizational organogram. In the public healthcare sector, the organogram specifies all programs and the number of personnel that may be appointed for each. However, the CCMDD program was pushed in prematurely without the establishment of inbuilt control systems. Therefore, there was no human resource allocation for the CCMDD program. The challenge is that CCMDD program duties had to be added on to available personnel's job descriptions, thus expanding their portfolio. This is a challenge because the public health care sector is grossly underfinanced, understaffed, and overstretched (Eyles et al., 2015). Consequently, program implementation, monitoring, and evaluation are not optimal. For instance, the department is dependent on the service provider for prescription registration personnel. It is also dependent on non-governmental organization personnel for registration and supervision of community-based medicine distribution sites. However, clinicians are by far the most significant resource limitation for the public health department. Such constraints have contributed to the utilization of non-clinicians for medicine issuing at community sites.

1.3.5. Utilization of non-clinicians

The service provider prepacked chronic medicine is issued at community sites by non-clinicians, who apply to the Department of Health to provide the service. The criteria for acceptance do not include clinical training. The principal reason for the lack of stringent criteria is the low remuneration when compared to that of clinicians. For instance, community medicine issuers earn an average of ZAR10.00–20.00 per parcel, which is about US$1.00-2.00 per medicine parcel issued (Magadzire, Marchal & Ward, 2016). This is in

stark contrast to paying the more expensive clinician, be it a pharmacists' assistant, enrolled nurse, pharmacist or doctor. The challenge is that the lack of clinical training includes lack of skills for medicine storage.

1.3.6. Lack of medicine storage skill

According to Good Pharmacy Practice principles, medicine must be stored at a specific temperature to maintain its potency (SAPC, 2010). For instance, the room temperature must be between the required minimum and maximum temperature limits. Impotent medicine is a wasteful expenditure because it must be destroyed (ibid.). While clinicians have the requisite training to facilitate temperature maintenance, non-clinicians do not. The challenge is that lack of medicine storage skill limits the amount of medicine and period for its storage at community sites. For instance, if a patient fails to collect the medicine parcel in time, it may not be kept for more than seven days. The service provider charges the Department for each returned medicine parcel. A patient who fails to collect medicine at a stipulated date is regarded as non-adherent and is de-registered from the program. Because of the high number of defaulters, the number of de-registrations has contributed to the reduction in CCMDD program enrolled patients (Magadzire, Marchal, & Ward, 2015). Overall, understanding issues in the uptake of CCMDD program and community-based distribution through root cause analysis are best detailed by in section 1.3.7 and figure 1.4.

1.3.7. Initial view of the problem and apparent relations

Initial observations indicated apparent relations among the different parts of the CCMDD program problem. The following diagram illustrates the possible cause and effect relationships about the research problem.

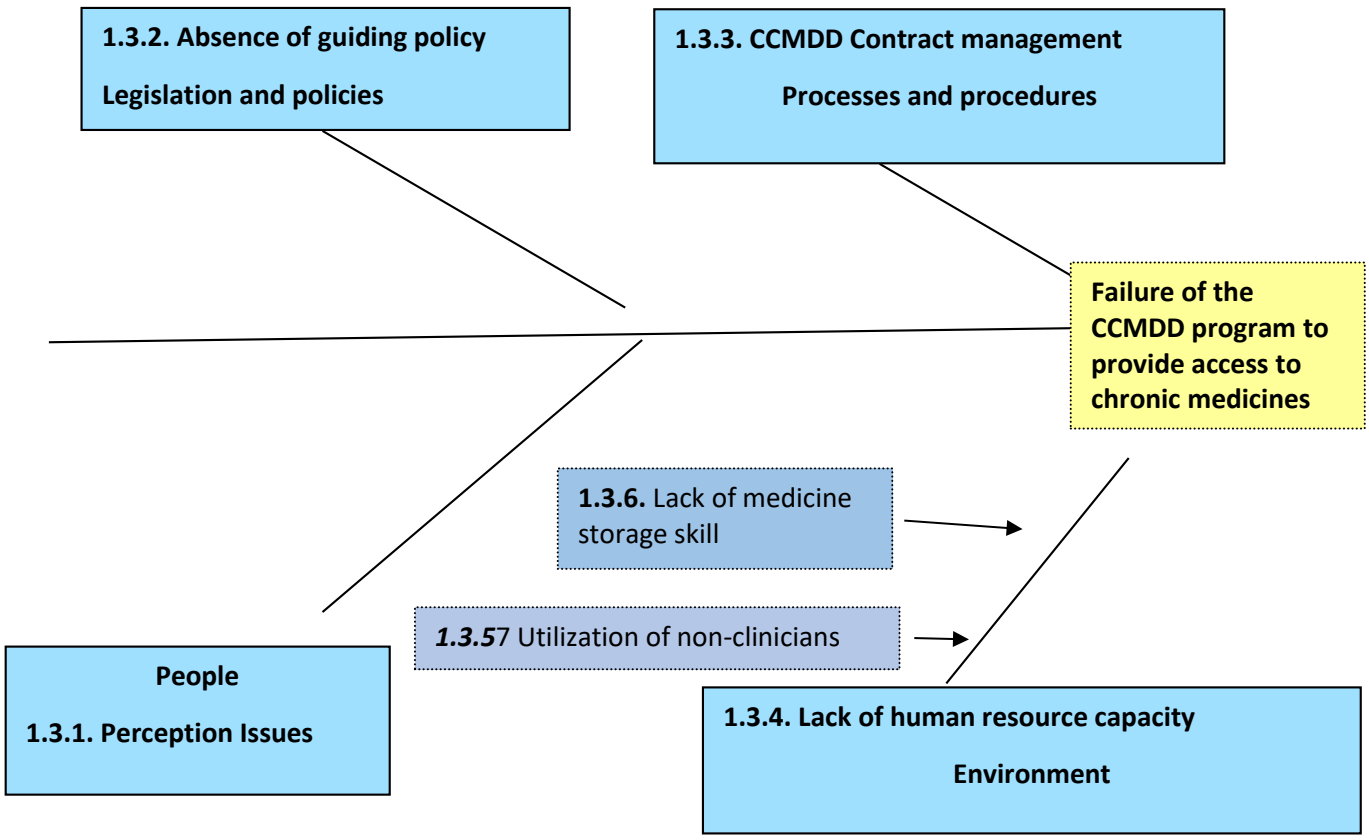

Figure 1.4. CCMDD program issues cause and effect

Consequently, the pressing need for the South African Department of Health to implement the CCMDD program despite resource constraints as discussed in section 1.1 and 1.2, has given rise to challenges as detailed in section 1.3.1 - 1.3.7. In figure 1.4 the potential causes are highlighted in blue and numbered according to the sub sections that provide further detail. The yellow highlighted block indicates the research problem. Overall, it has given rise to the need to explore problem comprehension and possible resolution using adequate research methodology.

1.4. Research objective

This research aims to uncover the issues that prevent CCMDD program from increasing access to chronic medicines and enrolment rates. While some issues could already be observed (see 1.3), currently, it is not fully understood what the various reasons are, or how they are related one to each other. This was detailed in section 1.3 and 1.4. Therefore, the objective of this study is to explore them in detail. Figure 1.5 indicates the research problem and question in alignment with the research .

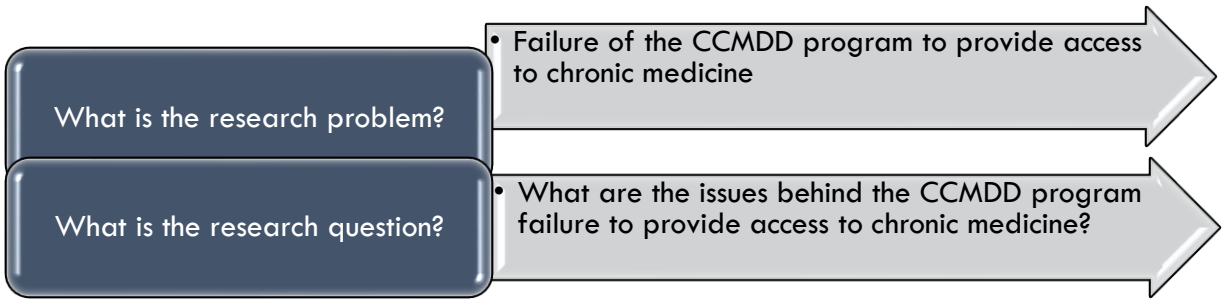

Figure 1.5. - Research Problem and Question

Attaining the research objective is underpinned by first generating a precise research problem statement.

1.5. Managerial perspectives on problem domains, determinants, variables and stakeholders involved in Community-Based Distribution and associated problems

As indicated in section 1.3, there appears to be a number of different problem domains, determinants, and variables as well as stakeholders that constitute the issue that prevents the CCMDD program to increase access to chronic medicines and enrolment rates. Subsection 1.3.1 to 1.3.7 then detailed those that were based on initial observations. This section then augments the above discussions with a tabulated illustration of the problem domains, problem determinants and variables related stakeholders.

Table 1.1 indicates the multiple stakeholders (4) and the various perspectives (2) that contribute to failure to increase access through CCMDD program and supporting literature (1). According to Van Olmen et al. (2012) there are key variables whose presence or absence determine the success or failure to meet a specified objective. These are called the problem determinants and variables (ibid.) indicated as 3 in the Table 1. 1. In this study, to meet the research objective of exploring the underlying issues behind CCMDD program failure (1.4) variables such as policy guidance, coordination of actors, are required to address the managerial stakeholder perspective that views the research as consisting of problem parts such as; absence of guiding policy (1.3.2), CCMDD program contract management (1.3.3), lack of human resource capacity (1.3.4), utilization of non-clinicians (1.3.5), lack of medicine storage skill (. 1.3.6) and perspective issues (1.3.1). This is detailed in section 1.3 and 1.5.

Table 1. 1 Multiple stakeholders and the various perspectives that contribute to failure to increase access through CCMDD program and supporting literature

1.Frameworks	**2.Domains**	**3.Specific determinants**	**4.Stakeholders**
van Olmen (2012); UN (2012)	1. Absence of guiding policy (1.3.2).	Policy guidance for the whole system (private, public sectors)	Policy maker
		Coordination of actors (private, public sectors)	
		Regulation of different functions	
		Optimal allocation of resources	
		Systems for ensuring accountability	
Meessen et al. (2011)	2. CCMDD Contract management (1.3.3.).	Governance policy to control, regulate service providers (public, private, formal, informal)	Policy maker
		Integrated systems to plan, organize, coordinate, and monitor involved actors	
Marchal & Kegels (2003)	3. Lack of human resource capacity (1.3.4).	Human resource governance to regulate and coordinate all actors	Chief Director
	3.1. Utilization of non-clinicians (1.3.5).	A comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration and deployment	
	3.2. Lack of medicine storage skill (1.3.6).	Human resource practices and strategies that balance financial and non-financial incentives	
Cummings & Woley (2015)	4. Perspective issues ((1.3.1).	Belief systems	Human resource manager
		organizational environment	Clinicians (Pharmacists, doctors, nurses)
		Culture	
		Education	Clinical Manager
		Organizational structure and function	

1.5.1. Literature support for identified different problem parts and apparent relations

Existing frameworks and concepts from present studies concur that there are apparent direct or indirect relations between CCMDD program failure to increase access to medicine through community-based distribution and its different issues such as; perception Issues (1.1), Absence of guiding policy (1.2), CCMDD program Contract management (1.3), Lack of human resource capacity (1.4), Utilization of non-clinicians (1.5), or Lack of medicine storage skill (1.6). For instance, findings from the Magadzire, Marchal & Ward (2016) study.

One of such frameworks that have been identified in support of identifying contributing factors in failing to provide sustainable medicine access through community-based distribution is the United Nations (2012) medicine governance framework posits that barriers to medicine access include absence of guiding policy and lack of human resource capacity. This is further complemented by the Bigdeli et al. (2012) framework which further points out that barriers also include failure to acknowledge systemic linkages involved in sustaining medicine access in the highly complex health care environment. Similarly, this framework supports the additional complexity angle, and its contribution to failure to attain sustainable medicine. The CCMDD program linkages with existing frameworks are illustrated in Table 1. 2. Overall, the potential linkages between CCMDD program issues and extant literature empirical and conceptual frameworks are illustrated in Figure 1.6.

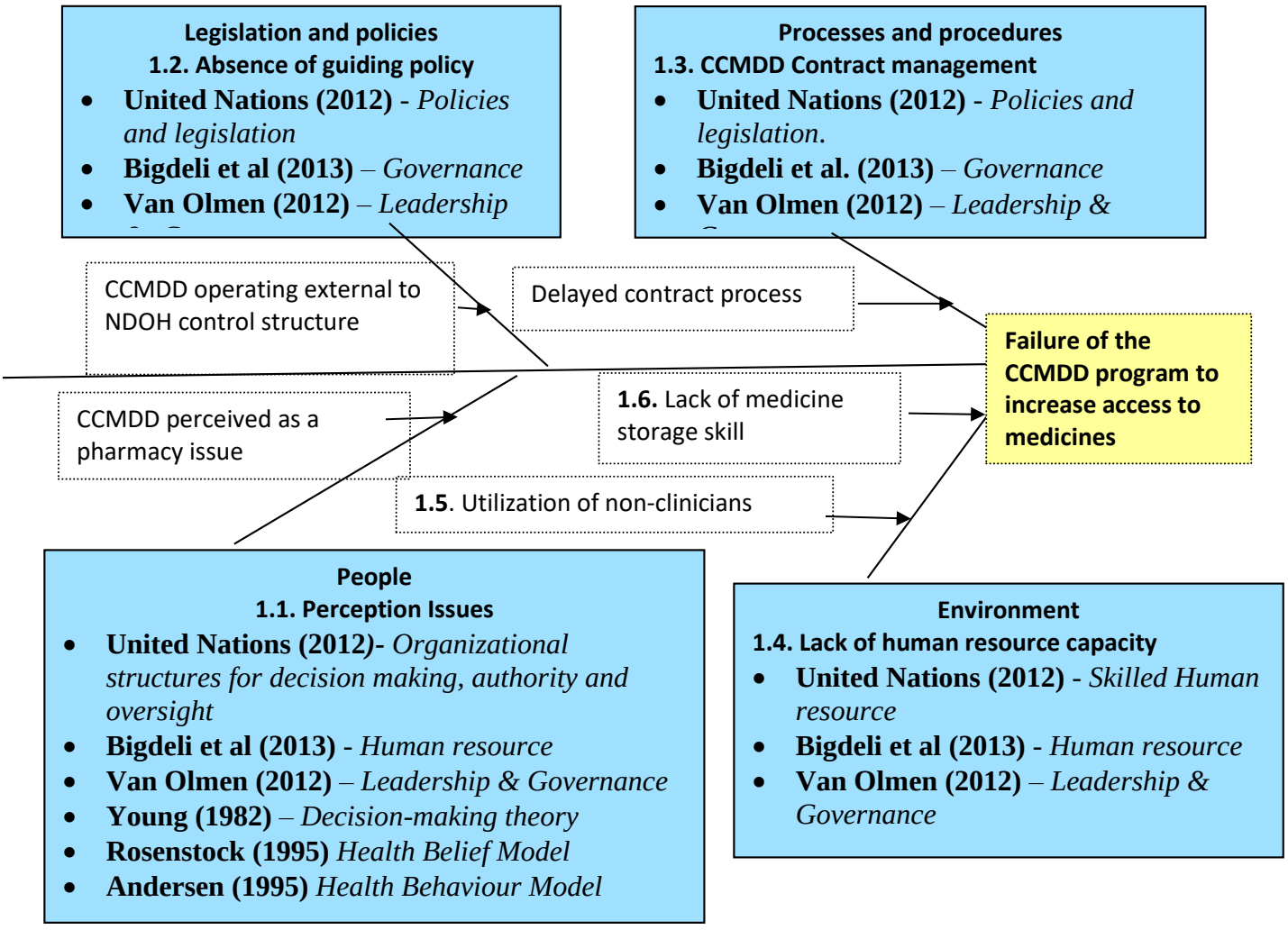

Figure 1.6. - CCMDD program systemic interlinkages with existing frameworks

Building on the initially identified CCMDD program cause-effect relations Figure 1.6 illustrates how and where the CCMDD program issues might relate to each other in accordance with such frameworks. For instance, the Perception Issues (1.3.1) links to the United Nations (2012) principle of the establishment of organizational structures for decision making, authority, and oversight. Furthermore, the Perception Issues (1.3.1) is addressed in the Bigdeli et al. (2013) framework by the principle of establishing effective Human resources. Similarly, it is addressed by the principle of human resources in the van Olmen (2012) framework. Furthermore, people perception issues are covered by the Young (1982) Decision-making theory, the Rosenstock (1995) Health Belief Model, and the Andersen (1995) Health Behaviour Model. Table 1.2 below illustrates the apparent cause-effect relationships to the mentioned frameworks. The first column indicates the issues detailed in section 1.3. The second column indicates literature support as detailed in section 1.5. The third and fourth column indicate the stakeholders based on literature (studies) respectively.

Table 1. 2. Linking CCMDD program issues with existing frameworks

CCMDD Issues	**Covered in framework**	**Stakeholders involved (based on literature)**	**Studies**
People perception issues (1.1)	UN (2012); Bigdeli (2013); Van Olmen (2012); Young (1982); Rosenstock (1995); Andersen (1995)	Macro, meso and micro stakeholders	Jalali et al (2017); Stankov et al 2017; De Schepper, Dooms & Haezendonck (2014)
Absence of guiding policy-Legislation, and policies (1.2)	UN (2012); Bigdeli (2013); Van Olmen (2012)	Macro, meso and micro stakeholders	Jalali et al (2017); Magadzire, Marchal & Ward (2015, 2016); Magadzire et al (2017); Musila & Mueni (2014); De Schepper, Dooms & Haezendonck (2014)
CCMDD Contract management -Processes and procedures (1.3)	UN (2012); Bigdeli (2013); Van Olmen (2012)	Macro, meso and micro stakeholders	Magadzire et al. (2017); De Schepper, Dooms & Haezendonck (2014)
Lack of human resource capacity-Environment (1.4)	UN (2012); Bigdeli (2013); Van Olmen (2012).	Macro, meso and micro stakeholders	Magadzire, Marchal & Ward (2016); Musila & Mueni (2014); De Schepper, Dooms & Haezendonck; Rasschaert et al. (2014)
Utilization of non-clinicians (1.5)	UN (2012); Bigdeli (2013); Van Olmen (2012).	Macro, meso and micro stakeholders multisectoral stakeholders,	Magadzire, Marchal & Ward (2016); Musila & Mueni (2014); Rasschaert et al. (2014)
Lack of medicine storage skills (1.6)	UN (2012); Bigdeli (2013); Van Olmen (2012).	Macro, meso and micro stakeholders	Magadzire, Marchal & Ward (2016); Musila & Mueni (2014)

The literature support for identified different problem parts and apparent relations also indicates that there are systemic dimension to the CCMDD program issue, such as high interlinkages between finance, human resources, infrastructure, leadership and governance (van Olmen et al., 2012).

1.5.2. Systems dimension to the CCMDD program problem

The problem of failure to increase access to medicines through community-based distribution has systemic dimensions that pertain to access to medicine and the health care system (Bigdeli et al. 2013). This is because medicine access is embedded within the health care system (ibid.). The health care system dimension is characterized by dynamic complex adaptive systems consisting of multiple actors and interconnections that continuously interact with each other (Paina & Peters, 2012). For instance, for medicine supply to be sustainable, actors in the finance, human resources, infrastructure, and the international medicine availability context must collaboratively work together (van Olmen et al., 2012). Furthermore, to attain the goal of improved health, and the outcome of increased access, the health system must work under leadership and governance that is open to the interaction with international & other sectors. For instance, global medicine raw materials manufacturers (ibid.). The health system also must work in alignment with the relevant circumstances of the impacted population (ibid.). However, to provide sustainable service provision within limited resources, the health system should efficiently organize its available resources of finance, infrastructure, human, and information. This is supported by the Bigdeli et al. (2013) and United Nations (2012) medicine access governance and accountability framework. Both frameworks emphasize the importance of governance as key to the attainment of sustainability. Governance in the health care system includes multi-levels in the health and political spheres of government, for instance, national, local and community level (van Olmen et al., 2012). Consequently, power issues inherent in the bureaucratic health care environment commonly impact program implementation, for example, in the CCMDD program.

1.5.3. Applying the action research lens to the CCMDD program problem and rationale

According to Paina & Peters (2012) the complexity and interconnectedness of the health care environment renders health care problems untenable through utilization of only linear

cause and effect relationships. Complex health care problems tend to be multidimensional, cross functional, trans organizational, occur at multiple levels of the organizational hierarchy (van Olmen et al., 2012). Also, they involve multiple stakeholders from various organizational sectors, such as private, public, non-governmental organizations and contracted Service Providers (ibid.) Consequently, complex health care problems tend to be entangled in multiple perspectives and potential management options (United Nations, 2012). One way of getting out of the muddle is to identify and prioritize a few actions that have the most probability to yield the greatest impact in achieving the required goal (ibid.). Another way consists of continuous involvement of multi-stakeholder, communication to reframe the problem to collaboratively make sense of the problem to the multistakeholder (Coghlan & Brannick, 2014). Applying the action research lens on complex health care problems can facilitate their management because action research is underpinned by the principles of participatory, problem solving and knowledge creation (ibid.). The action research lens provides flexible utilization of multiple methods by focusing on what works.

The preceding definitions and characteristics fit the CCMDD program problem because of the multidimensional, inter-organizational and complexity of its nature. For instance, it involves stakeholders not only from both the private and public sector but also from Non-Governmental Organizations. Furthermore, its cross-boundary nature also involves the community and political actors (van Olmen et al., 2012).

1.6. Research problem statement

The problem is the failure to increase access to chronic medicine through community-based distribution, referred to as the Centralised Chronic Medicine Distribution and Dispensing (CCMDD) program. Practice level issues indicated that the key contributing factors to CCMDD program failure include; 1. Perception issues 2. Absence of guiding policy 3. CCMDD program Contract management 4. Lack of human resource capacity 4.1. Utilization of non-clinicians 4.2. Lack of medicine storage skill.

Existing frameworks and studies concur that there are potential cause-effect relationships between failure to increase access to medicines through community-based distribution and 1. People issues 2. CCMDD program Processes and procedures 3. CCMDD program Contract management processes and procedures 4. Lack of human resource capacity 4.1 Utilization of non-clinicians and 4.2 Lack of medicine storage skill. For instance,

frameworks such as; United Nations (2012), Bigdeli et al. (2013), and Van Olmen et al. (2012).

1.6.1. Research problem question

The research question is: What are the issues behind the CCMDD program failure to provide access to chronic medicine?

1.6.2. Interview guiding questions

The research interview guiding questions are based on problem determinants, problem domains, determinants, variables, and related stakeholders as illustrated in Table 1.2. To ensure that the research interview guiding questions obtained responses that are relevant to the research objective, they were underpinned to the problem domains, determinants, variables, and related stakeholders. Table 1.3 below illustrates the interview guiding questions (5) that are based on the specific determinants (3) for each problem part or domain (2) as well as specific stakeholders (4) as indicated by literature support (1). The interview guiding questions for the policy maker (4) in the first row, are indicated by 1, 1,1; 1.2, 1.3, in alignment with the specific determinants (3) in the corresponding rows. However, these belong to one problem domain (1), absence of guiding policy, as supported by literature (1) and the discussion in section 1.3.2. The above explanation also applies to domains 2, 3, and 4. Nevertheless, they all answer one research question that is indicated in section 1.6.1.

Table 1. 3: Interview guiding questions

1.Frameworks	2.Domains	3.Specific determinants	4.Stakeholders	5.Interview guiding questions
van Olmen (2012); UN (2012)	1. Absence of guiding policy (1.3.2).	Policy guidance for the whole system (private, public sectors)	Policy maker	1. What guides CCMDD implementation?
		Coordination of actors (private, public sectors)		1.1.What control measures are there to coordinate public and private sector functions involved in CCMDD implementation?
		Regulation of different functions		
		Optimal allocation of resources		1.2.What kinds of resource support (for instance, infrastructure, human resource) contribute to the success of CCMDD?
		Systems for ensuring accountability		1.3.What determines transversal accountability for CCMDD implementation for both the private and public sector stakeholders?
Meessen et al. (2011)	2. CCMDD Contract management (1.3.3).	Governance policy to control, regulate service providers (public, private, formal, informal)	Policy maker	2.What controls CCMDD service provider performance?
		Integrated systems to plan, organize, coordinate, and monitor involved actors		2.1.What transversal oversight measures are there for public, private, formal and informal and actors?
Marchal & Kegels (2003)	3. Lack of human resource capacity (1.3.4).	Human resource governance to regulate and coordinate all actors	Human resource manager	3.What transversal human resource management system governs CCMDD implementation?
	3.1. Utilization of non-clinicians (1.3.5).	A comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration and deployment		3.1.What is the rationale behind utilization of non-clinicians at community-based distribution sites
	3.2. Lack of medicine storage skill (1.3.6).	Human resource practices and strategies that balance financial and non-financial incentives		3.2.What guides the practice of non-clinician personnel at community-based sites?
				3.3.What kinds of support are there, in terms of trainings or technical assistance, for non-clinical personnel to implement the CCMDD program at community sites?
Cummings & Woley (2015)	4. Perspective issues (1.3.1)	Belief systems	Front line managers and clinicians (Pharmacists, doctors, nurses)	4. What influences the perspectives of personnel with regards to CCMDD implementation?
		Organizational environment		4.1.How is the program consistent with or detracting from the work responsibilities of heath personnel?
		Culture		4.2.What could be done to make CCMDD more compatible with health service provision?
		Education		4.3.What knowledge would make it easier for personnel to enrol patients?

To attain the research objective, and answer the research question, it was important to design appropriate research methods.

1.7. Research methods

This study utilized exploratory qualitative methods. Exploratory methods provided greater problem understanding because of their focus on the uderlying issues behind the problem (Saunders, Lewis, & Thornhill, 2012). Qualitative research can produce contextualized deeper problem meaning (Creswell, 2013). The study approach consisted of the action research approach and the methods presented in the Methodology chapter (Chapter 2). The source of data was fifteen key informants which consisted of; frontline healthcare providers (doctors, nurses, pharmacists), policymakers, managers, supply chain and public health experts from multiple sites. Data collection included; interviews; nonparticipant observations and document review. Data analysis was performed using deductive thematic analysis. In-depth interviews, were conducted using a semi-structured interview guide. The key informants were purposively selected based on the knowledge and experience with the CCMDD program. Key informants provide the most valuable data for unique problems (Easterby-Smith, Thorpe, & Jackson, 2012). Interviews were in English, and each interview lasted an hour on average. All the interviews were conducted at a place convenient for the respondents, for example, at work. The process included the recording of interviews and note-taking as required. There was one action research cycle involving relevant stakeholders related to the identified root causes. For instance, the multidisciplinary team to input on the perception issues in point 1.3.1. The action research cycle included brainstorming, planning, and verifying the collaborative cause and effect analysis. Table 1.4 below indicates the key informants for this study.

Table 1. 4 Key informants based on expertise and knowledge

Category	**Number of respondents**
National-level policymaker in pharmaceutical regulation	1
Senior provincial directors and policymakers	3
Academic in public health	1
Provincial managers of the medicines supply chain	1
Mid-level managers (sub-structure pharmacists; primary healthcare managers)	4
Frontline health workers (clinicians, health promoters, NGO personnel	5
	Total of 15

Another key aspect of the research methods is to outline the thesis structure.

1.8. Thesis outline

The following is an outline of the thesis structure. There will **be six chapters** as per the illustration below.

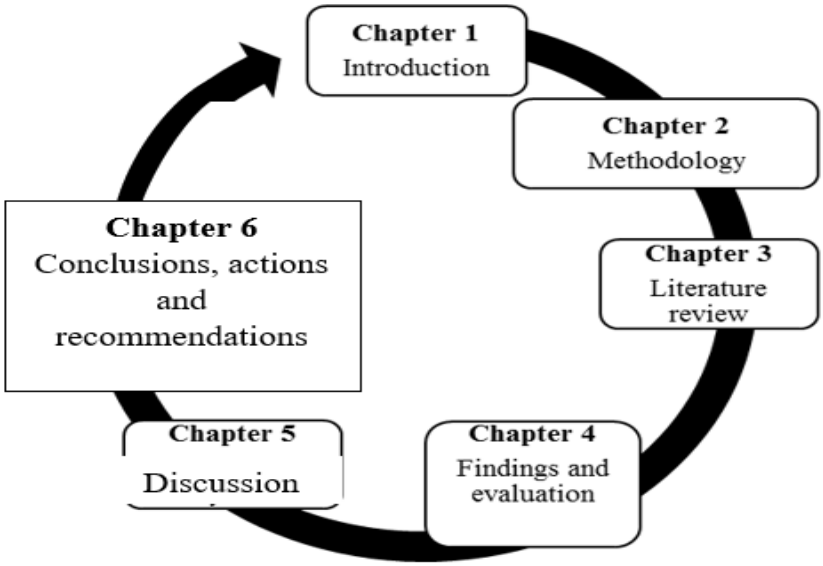

Figure 1.7. - Thesis structure outline

Figure 1.7 indicates the outline of the thesis chapters sequence from the study overview (chapter one), the research methodology (chapter 2), the literature review (chapter 3), the findings and evaluation (chapter 4), the Discussion (chapter 5) and conclusions, actions, and recommendations (chapter 6). The chapters are detailed in their respective sections as per table of contents.

1.9. Summary of study overview

The introductory chapter has provided background information regarding chronic medicine access amid resource limitations in the South Africa public health care sector. It further detailed the nature of CCMDD program, a community-based distribution program that was implemented to overcome such resource constraints. Furthermore, it discussed the necessary theoretical background of chronic disease management. It further gave an analysis and illustration of the CCMDD program problem regarding its apparent root causes and its wicked nature. Based on the initial problem view, it detailed the research question, purpose, problem statement and corresponding research sub-questions. The chapter also detailed a critical review of related extant literature findings, and conclusions from other researchers work. Grounded in previous research, the chapter then detailed the research study design, approaches, methodologies and justifications thereof. Finally, this chapter illustrated the intended thesis outline. The next chapter will provide the research methodology and design in alignment with the research objective and questions.

Chapter 2 Research Methodology

2. Introduction

This chapter discusses the research methods and study design. It discusses the research philosophy, the data gathering required to inquire into the problem, inclusive of key interview guiding questions for stakeholder engagement, as well as the appropriate methods and techniques for gathering the data, for instance, stakeholder engagement methods and supporting literature. Furthermore, it details the qualitative research design inclusive of the chosen research methods and methodologies, their justification, and grounding; for instance, action research cycles, data collection, and analysis, data triangulation as well as ethical considerations. Finally, the chapter indicates the way forward for the literature review.

2.1. Research Philosophy

The research philosophy for this study is guided by the ontology of relativism and the epistemology of pragmatism; leading to the action research lens. While relativism perceives reality as consisting of multiples of truths relative to circumstances, pragmatism perceives knowledge about reality as attainable through the use of methods that work (Easterby-Smith, Thorpe, & Jackson, 2012). What works for this study is an extended epistemology. As (Coghlan & Brannick, 2014) posited, the action research philosophy consists of an extended epistemology and ontology because of its underlying principles of focusing on what works, in a participatory, democratic, problem solving and knowledge creating manner. Such a philosophical approach was deemed justifiable for this study because it enabled methodological flexibility. Flexibility was crucial for this study because of the complexity of the health care environment which does not lend itself to linear cause and effect relationships (Paina & Peters, 2012). While realism and positivism may have been utilized, they were not appropriate for this study because they were not in alignment with the research purpose (Easterby-Smith, Thorpe, & Jackson, 2012). For instance, the realism and positivism paradigms perceive reality objectively independent of the observer. However, this research' objective required exploration and interpretation of the community-based problem in its context. Thus, it lended itself to qualitative interpretive methods as well as complexity science approaches (Creswell, 2013).

2.2. Data that needed to be gathered in actioning the problem: Key questions for stakeholder engagement

The required data for actioning the problem was determined by the CCMDD program problem domains. Therefore, multi-stakeholder engagement was based on such components. For instance; 1. People- Perspective issues 2. Policies and Legislation- 3. Environment-Absence of guiding policy. 3. Processes and procedures- CCMDD program contract management 4. Lack of human resources. The aim was to gain multi-perspectives on the potential cause-effect relationship determined from the multiple stakeholders with expertise in each dimension. Attaining such multiple stakeholders' perspectives was guided by the Ainsworth & Feyerherm (2016) Trans systems analytical framework. What made utilization of the Trans systems model justifiable for this research process was that it provides structure to guide investigation of the complex multiple stakeholder problem based on design criteria for trans system effective functionality - for instance, mission, vision, constituency, governance structure, and information systems (ibid.) Nevertheless, key data gathering for actioning of the research problem required asking key interview guiding questions to the relevant stakeholders through utilization of appropriate methods and techniques - for instance, the Dentoni (2013) inductive multi-stakeholder engagements framework which involves the process of asking the Why, When, Which and How questions of Multi-Stakeholder Engagements. Figure 2.1 below illustrates the model and the questions around which the multi-stakeholder engagement was based.

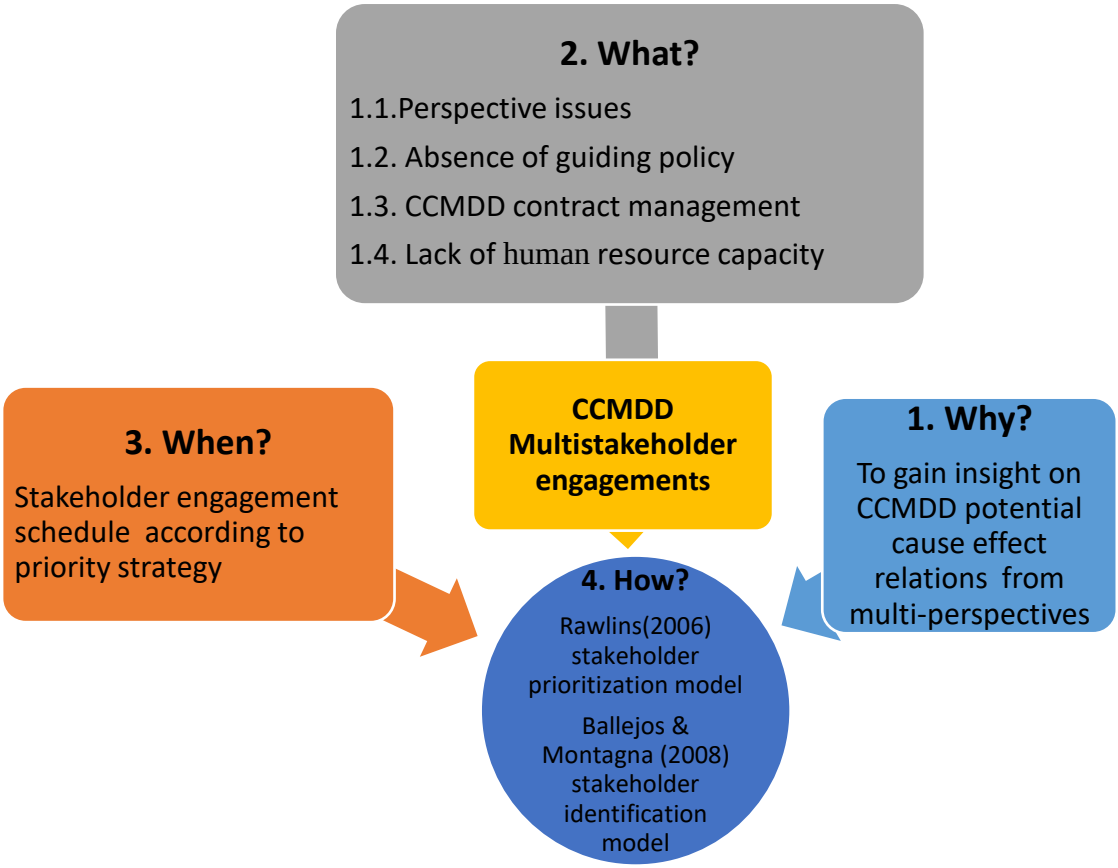

Figure 2.1- Dentoni (2013) Inductive Multi-Stakeholder Engagements Framework analogue

Figure 2.1 illustrates the Dentoni (2013) Inductive multi-stakeholder engagements framework that was applied in this study. The technique involves asking the Why, When, Which and How questions to provide structure to the multi-stakeholder engagements process. The 'Why?' question numbered 1 in the diagram provided the reason behind the multi-stakeholder engagements process, that being: To gain insight on CCMDD program potential cause effect relations from multi-perspectives. This was discussed in detail in section 2.2.

The 'What? question, numbered 2 in the diagram provided the context of the multi-stakeholder engagement based on their expertise on the problem domain, such as: 1.1. Perspective issues 1.2. Absence of guiding policy 1.3. CCMDD program contract management1.4. Lack of human resource capacity. This was discussed in section 2.3.2. The 'When? question, numbered 3 in the diagram indicates the stakeholder engagement schedule according to priority as detailed in section 2.3.3. The 'How? question, numbered 4 in the diagram indicated the stakeholder engagement methods that were utilized to bring out their perspectives as detailed in section 2.3.4.

2.3. Action Research - Stakeholder engagement as a method of choice to answer the research question.

2.3.1. Stakeholder identification methods

According to Ainsworth & Feyerherm (2016), stakeholders may be identified according to groups such as internal, external and inter-organizational. Additionally, stakeholder identification among groups may be based on power, influence, and competence (ibid.). Also, it may be based on linkage to the organization and the problem issues under consideration (Rawlins, 2006; Ballejos & Montagna, 2008; Dentoni & Ross, 2013). Consequently, CCMDD program related stakeholders consisted of the following groups: internal stakeholders such as; Department of Health (DOH) managers from various levels of public health sector governance, namely; Top management, policymakers, directors for specific specialities (Pharmacy, Primary Health Care, Monitoring & Evaluation (M&E), Information Technology (IT), Office of the Member of the Executive Council). Secondly, external stakeholder consisted of; Non-governmental organizations (NGOs) Top Management, directors for specific specialties (Pharmacy, M&E, IT), Public health registrars and the contracted Private Service Provider management. Thirdly, the inter-organizational stakeholders consisted of identified cross-sectional representatives from both internal and external groups who possess the required competencies for CCMDD program progress. Nevertheless, since healthcare problems are complex and dynamic, stakeholder identification and prioritization may evolve in time due to the dynamism of the organizational context (Cummings & Worley, 2015). However, stakeholders may also differ according to the different parts of the complex health care problem.

2.3.2. Stakeholder categorization according to the different parts of the workplace-based problem

Stakeholder separation according to the different parts of the problem tends to be obscure because of its multidimensional nature (Rawlins, 2006). Furthermore, for complex multistakeholder workplace issues, there may be both separation and conglomeration of diverse stakeholders based on issue criteria, such as; the degree of influence, competence and linkage to the organization impacts (Rawlins, 2006; Ballejos & Montagna, 2008; Ainsworth & Feyerherm, 2016). Consequently, for the CCMDD program component issues such as; 1. Absence of policy 2. CCMDD program contract management 3. Lack of human resources and

4. People perspectives prioritized the internal- top management stakeholder members because they have the power to influence the entire organization. However, mid-level internal managers (pharmacists; primary healthcare managers) involved exploration of issues such as; human resources and people perspective over which they had high competence, and high linkage but little influence. The NGOs and academic, public health specialist had low influence, high competence, and linkage on all components of CCMDD program issues, which rendered them useful mostly in the cross-sectional inter-organizational task team stakeholder group.

Table 2.1 below illustrates the CCMDD program action research stakeholder engagement matrix. The matrix matches stakeholders to CCMDD program problem components, role, priority influence, problem domain, impact and supporting literature. The first column (Stakeholders) indicates stakeholder identification, such as; internal stakeholders (IS), external stakeholders (ES) and interorganizational stakeholders (IOS). The second column (Role) indicates the stakeholders' role such as executive authority and oversight with regards to the CCMDD program issue. This is discussed in section 2.3.1.

The third column (priority influence, and impact) indicates stakeholders' categorization according to the degree of influence on the problem. This is discussed in section 2.3.3**.** The fourth column CCMDD program problem domain indicates stakeholder categorization according to the different parts of the workplace-based problem. This is discussed in section 2.3.2. The fifth column indicates literature support for the stakeholder analysis matrix. This is discussed in section 2.3.

Table 2.1 CCMDD program action research stakeholder engagement matrix

Stakeholders	Role	Priority, influence and impact	CCMDD Problem domain	Supporting Literature
(IS) Top Management	Executive authority and control	High priority, impact and influence	→ Absence of guiding policy → CCMDD contract management → Lack of human resources capacity → Perspective issues	Rawlins (2006) Ballejos & Montagna (2008) Ainsworth & Feyerherm (2016) Williams (2002) Cummings & Worley (2015) Dentoni & Ross (2013) Dentoni, Hospes & Ross (2013)
(IS) National and Provincial CCMDD Policymakers	Establishment of National strategic directive and regulations	High priority, impact and influence		
(IS) Provincial Managers (NHI, Pharmacy, PHC, M&E, Office of the MEC)	Directorship of component specific resources	High priority but medium impact and influence		
(IS) District Manager	Overall control & directorship of district facility functions- the power to align district resources towards CCMDD progress	High priority, impact and influence		
(IS) Mid-level managers (pharmacists; primary healthcare managers)	Establishment of operational strategies and implementation plans	Low priority, medium influence and impact	→ Lack of human resources capacity → Perspective issues	
(IOS) Trans-system members	Cross-sectional task functions (strategies for identified issues, task allocation, role clarification, monitoring, and reporting)	Medium priority, high impact and influence	→ Absence of guiding policy → CCMDD contract management → Lack of human resources capacity → Perspective issues	
(ES) NGO Management	Oversight & strategic plans to ensure CCMDD sustainability	Medium priority, low impact and influence	→ Lack of human resources capacity → Perspective issues	
(ES) Contracted private service	Overall authority and directorship of	Medium priority, medium	→ Contract Management	

(IS)—Internal Stakeholders, **(IOS)**—Inter-organizational Stakeholders, **(ES)**—External Stakeholders

Stakeholder analysis was followed by stakeholder prioritization based on their impact on problem tackling. According to Rawlins (2006) stakeholder prioritization models guide stakeholder prioritization. In this study, stakeholder prioritization was attained through utilization of stakeholder prioritization models as discussed below.

2.3.3. Stakeholder prioritization methods to structure the data gathering schedule

Stakeholder prioritization was guided by stakeholder prioritization models, for instance, the Rawlins (2006) model which advocates for identification and prioritization of stakeholders according to linkage to the organization. Linkage refers to functional or regulatory relationships to the organization -for instance, medicine suppliers and government respectively concerning the CCMDD program problem. Stakeholder prioritization may also be according to attributes, for instance, power, influence, and interest, for example, national policymakers and directors for the CCMDD program problem. Prioritization of stakeholders may also be by relationship to the situation, for instance, those that are actively involved in the CCMDD program distribution model, for example, clinicians and managers.

The stakeholder prioritization principles of the Rawlins (2006) model are supported by the Ballejos & Montagna (2008) inter-organizational multidimensional stakeholder identification framework which further adds that stakeholder prioritization should also be based on competence or knowledge, for instance, academic experts for each domain that constitutes the problem. Therefore, for the CCMDD program problem, the first priority stakeholders were those who held power, authority, and influence, for instance, policymakers, directors at various levels of the organization. However, the situation was contextualized to suit organizational circumstances. Overall, the key issue behind the utilization of stakeholder prioritization frameworks was to obtain their multi perspectives about the CCMDD program. Drawing such multi perspectives required the utilization of multi-stakeholder engagement techniques.

2.3.4. Stakeholder engagement techniques and methods to bring out their different perspectives and supporting literature

Stakeholder engagement methods for this study consisted of; problem mapping, design thinking, problem diagnosis, problem management through continuous collaborative engagement, and the art of designing a context-based stakeholder engagement mix. Table 2.2 below describes each method, how it works and the corresponding supporting literature.

Table 2. 2 Stakeholder engagement methods and related frameworks

Stakeholder engagement method	Reason	How the method works	Frameworks
Problem mapping to create a visual systems model	Flexible	Drawing identified different problem nodes and observed relational links	Wujec (2017)
		Collaborative reflection on shared mental pictures to obtain mulitiperspectives	
		Releasing agreed upon flexible, integrated mulitiperspectives model that visualizes the entire system.	
Design thinking through collaborative problem conceptualisation	Flexible	Problem node construction, observation, and interpretation	Pries-Heje & Baskerville (2008)
Problem diagnosis through multiperspective input	Flexible	Iterative cycles of problem diagnosing through the process of observation; and multiperspective interpretation	Yawson (2015)
Problem management through continuos collaborative engagement	Flexible	Utilization of working groups of experts, stakeholder forums and continuous observation	Dentoni & Bitzer (2016)
Design thinking	Flexible	Creation of context based, practical, flexible, adaptive approach using both formal and informal techniques	Rao (2017)
Art of designing a context based stakeholder engagement mix	Flexible	Considerations of pool of techiques based on 'when, what, and how' to select methods to achieve the aim of the project	Dentoni (2013)

Table 2.2 illustrates stakeholder engagement techniques and methods to bring out their different perspectives, and supporting literature. The first column indicates the type of stakeholder engagement method, for example problem mapping. The second column indicates the method's justification and column three indicates how the method works. The fourth column indicates literature support.

Stakeholder engagement methods may include; visualization using drawings, sticky notes, and cards, meetings, workshops, conferences, interviews, emails, focus groups, and telephone calls (Dentoni & Bitzer, 2016). This is because stakeholder engagement methods and techniques for complex multi stakeholder issues tend to be flexible, adaptive, context-based (ibid.).

Furthermore, they depend on the type of stakeholder, information required, capabilities, resource availability, transaction costs and may include several nonlinear dimensions (Yawson, 2015). Consequently, the suggested best practice for stakeholder engagement methods should be selected and tailored to suit the identified level of participation (Reed, 2008; Yang et al., 2011). Consequently, meetings may be combined with emails, forums, and interview data collection methods (ibid). This is because the choice of the approaches is art with extensive considerations of 'when, what, and how' to select methods to achieve the project aims (Dentoni, 2013).

2.4. Methodological approach

The research methods for this study consisted of exploratory qualitative and the participatory action research modality.

For the qualitative part of the study the source of data was obtained from fifteen key informants consisting of; frontline healthcare providers (doctors, nurses, pharmacists), policymakers, managers, supply chain and public health experts. The rationale being that it is the best approach to answering the research question.

Firstly, the exploratory nature of the study is appropriate because it can enhance problem comprehension in areas with scant previous research. Furthermore, it can also create qualitative knowledge-based on interpretation, using few research participants, save time and other resources (Brown, 2006; Singh, 2007; Saunders, Lewis, & Thornhill, 2012). Secondly, qualitative research is appropriate because it can yield contextualized deeper subjective meaning of constructs and enable the inductive building of theories and models (Creswell, 2013). Thirdly, the case study methodology can bind a case through time and place, enable an in-depth contextual analysis of complex and unique phenomena, accommodate and multi-method utilization (Yin, 2003). Fourth, participatory action research has the potential to yield both problem-solving and system-wide change through altered thinking patterns and behaviour triggered by critical reflection and learning (Coghlan & Brannick, 2014). Fifth, purposive participant choice is rational because it can yield data from a selected group of participants who possess the requisite knowledge to answer the interview questions and consequtively the research question (Mason, 2002). In combination, the approach can yield both applied and theoretical knowledge. The next section details how data was collected and analysis for this study.

2.4.1. Data collection and analysis

Data was collected through in-depth interviews; nonparticipant observations and document review. In-depth interviews, were conducted using a semi-structured interview guide. The interview guide was obtained from the Magadzire, Marchal & Ward (2016) although it was contextualized. The key informants were purposively selected based on the knowledge and experience with the CCMDD program. Interviews were conduct in English, and each interview lasted an hour on average. All the interviews were conducted at a place convenient for the respondents, for example, at work. The process included note-taking as required.

In this study, data was analyzed through both deductive and inductive thematic analysis. The thematic analysis process included data reduction through utilization of identified codes, themes, and categories, obtained from previous research, and those that emerged from research data such as apriori themes from the Magadzire, Marchal & Ward (2016) and Magadzire et al. (2017) studies. Utilization of apriori codes **was** justifiable because of their prior successful use and validation in previous empirical studies (Creswell, 2013).

According to Coughlan and Brannick (2014) data collection and analysis can co-occur flexibly from research commencement. Thus, in this study data collection and analysis included data obtained from both the action research cycle and interview guiding questions.

An interview guide sourced from the Magadzire, Marchal & Ward (2016) and Magadzire et al. (2017) studies provided guidance. However, during the action research cycle, there was consultation with the focus group and CCMDD program experts to assess the interview questions for suitability, relevance, and comprehension. As Greenwood & Levin (2007) posited; flexible, contextualized methodology application for collaborative practice level problem-solving facilitates the relevance of the findings.

According to Creswell (2013) data interpretation involves examination of identified categories and comparing them with existing literature and theories. In this study data interpretation through comparison with existing literature is discussed in chapter 5. The section below indicates the nature of the action research cycle.

2.4.2. Action research cycle

This study included one action research cycle involving relevant stakeholders related to the identified root causes; for instance, the multidisciplinary team to input on the perception issues

as detailed in section 2.3. The action cycle involved problematization, verifying the apparent cause and effect analysis and planning of the effective intervention strategy as detailed in section 2.5. Coughlan and Brannick (2014) illustrate the structure of action research cycles as shown in figure 2.2 below.

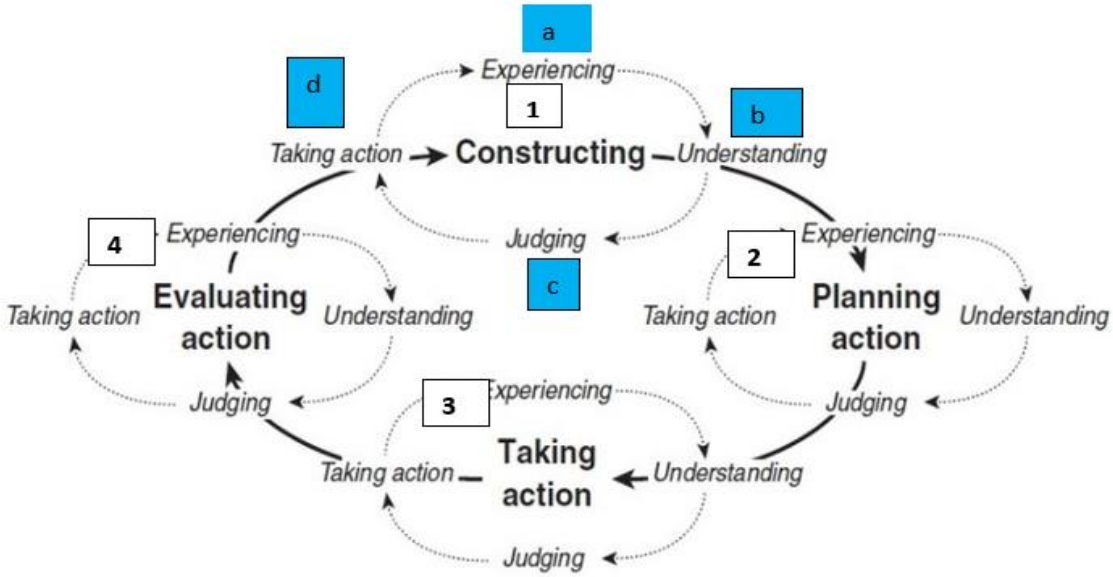

Figure 2.2 - Coughlan and Brannick (2014) -Action research cycles

Figure 2.2 illustrates the Brannick (2014) structure of the action research cycles which consists of the core phases of; construction, planning action, taking action and evaluating action outcomes in order to inform the next iterative cycle. In figure 2.2 the phases are numbered 1,2,3,4 respectively. Furthermore, action research includes a concurrent reflection and learning in action cycle consisting of; experiencing, understanding, judging and taking action for each of the core phase steps (ibid.). In figure 2.2 the reflective phases are shown as a, b, c, d, respectively.

Regarding the core phase, the construction phase (1) involves participatory problematization to attain multiperspectives. The planning action phase (2) involves collaborative planning of the best way forward in the light of collaborative problem reframing. The taking action phase involves taking the agreed upon action (3). The evaluating action phase involves assessment of the results from implementing the action (4) (ibid).

Regarding the concurrent reflection and learning phase, experiencing (a), understanding (b), judging (c) and taking action (d) involves co-reflection and sensemaking to facilitate problem

reframing and informing the intervention plan that can be actioned in alignment with organizational goals and available resources.

According to Coghlan (2011) the action cycle can be enacted creatively based on organizational circumstances to facilitate organizational change and action learning. Thus, the contextualized version of the action research cycle core and reflection phases is detailed in section 2.5. and illustrated in figure 2.3.

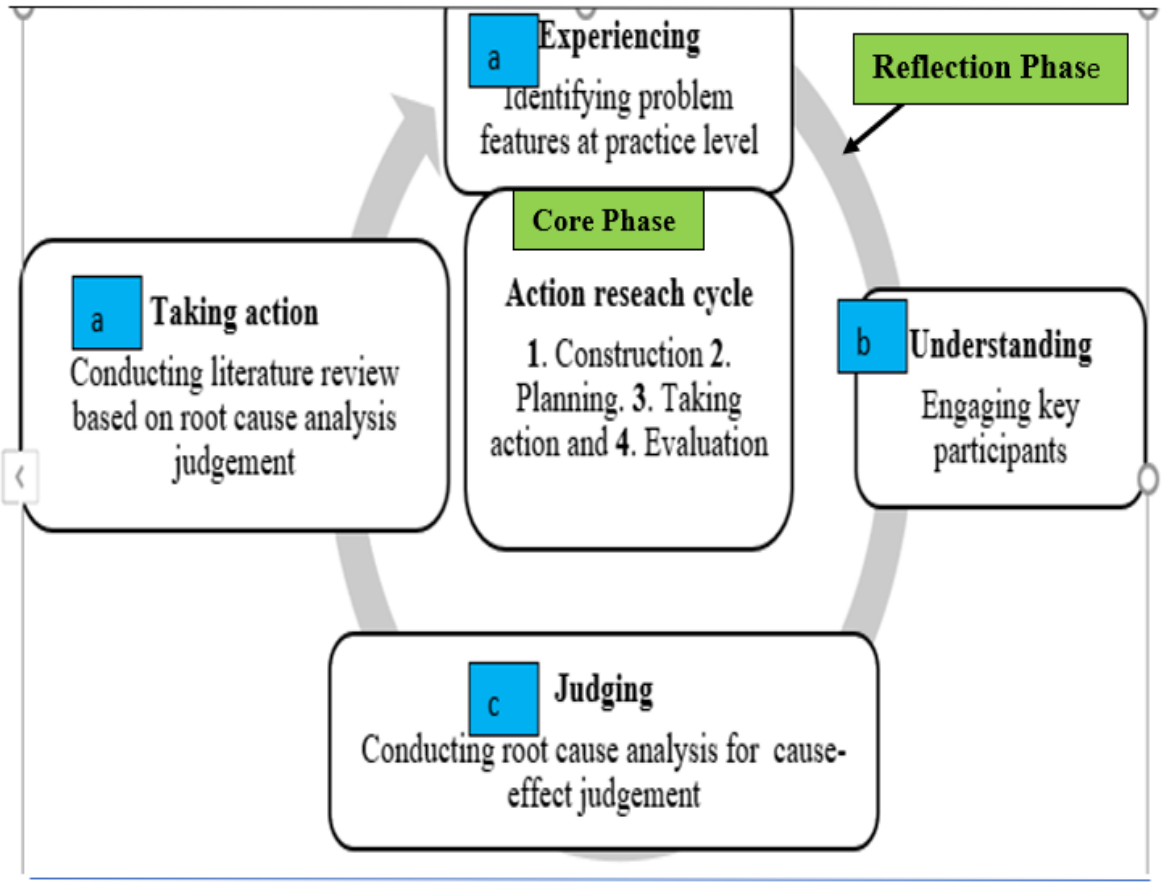

Figure 2.3 – Contextualized action research cycle for this study

In Figure 2.3 the contextualized core action and reflection phases are highlighted in green. The action research cycle core phase steps of 1. Construction 2. Planning 3. Taking action and 4. Evaluating were merged to accommodate time constraints and availability of senior managers. Also, the contextualized reflection phase of experiencing (a), understanding (b), judging (c) and taking action (d) occurred concurrently with the core phase.

The core phase involved problematization aimed at verifying the identified apparent problem root cause analysis relationships as discussed in section 2.5. The reflection phase involved critical reflection and learning in action as discussed in section 2.6. Furthermore, it involved sensemaking from the action research cycles and collaborative development of a plan of action as discussed in sections 2.7.

Nevertheless, by scientific research principles, the research design has to contain techniques to validate data for accuracy (Creswell, 2013). For this study, data triangulation was utilized to ascertain validity and accuracy as discussed in section 2.4.3 below.

2.4.3. Data validity through triangulation and action research reflexivity

Data triangulation is a research validating technique that involves the utilization of multiple data sources to provide corroborative evidence (Creswell, 2013). Data triangulation is crucial because it provides the study credibility and accuracy (ibid.). In this study, the triangulation of data was achieved through the utilization of different data collection methods, for instance, focus groups, interviews, and documents. Furthermore, since data was obtained from multiple sites, triangulation occured through comparing data from the multiple sources which formed the multistakeholder group. Also, triangulation occurred during the coding process whereby codes obtained from interviews, focus groups and documents were compared for corroboration. According to Lemon & Hayes (2020) triangulation through utilization of a diverse group of participants with different expertise and organizational background enhances data quality.

Triangulation is a justifiable data quality method to ensure validity and accuracy of data for this study when compared with other data quality methods. According to Lincoln & Guba (1985) triangulation enhances data validity and credibility because it meets the key dimensions that are utilized to measure data quality. The key six dimensions of data quality are: completeness, consistency, conformity, accuracy, integrity and timeliness (Fox, Levitin & Redman, 1994; Batini, Cappiello, Francalanci & Maurino, 2009). Completeness refers to the degree to which data collection includes data describing the real-world phenomenon. Consistency refers to alignment of data across all the data sets. Conformity means the data is adherent to a set of specified data formats, for example data type. Accuracy is the extent to which data accurately represent the real-world phenomenon being defined. Integrity means validity of data across the relationship linkages and confirms that all data can be sketched and associated to other data (ibid.)

In this study, the key six dimensions of data quality consisting of completeness, consistency, conformity, accuracy, integrity and timeliness were met. Completeness was attained through inclusion of all the relevant multi stakeholders according to their expertise and experience to answer the research question according to problem as shown in section 2.3.

Consistency was attained through verification of alignment of data across all the data sets, such as focus groups and interviews. This is shown in section 2.5 which indicates method triangulation through utilization of various techniques and methods to engage with the respective stakeholders and to bring out their different perspectives (2.5.1). Consistency is also shown through verification of findings from the action research cycle with those from Nvivo thematic data analysis. This is shown in section 2.5.2 which indicates the outcomes of identified stakeholders' approach and perceptions about the workplace-based problem and its domains. The outcomes in section 2.5.2 were found to be in alignment with those from Nvivo thematic analysis as show in figure 2.4 which is an Nvivo produced visual mapping of the problems associated with the CCMDD program that is based on the analysis of data from the multi-stakeholder engagement process that occurred during the action research cycle problematization process.

Conformity was attained through categorization of data according to the specified format of problem domains. As shown in section 2.2, the data that needed to be gathered in actioning the problem through asking key questions for stakeholder engagement was determined by the CCMDD program problem domains.

Accuracy was attained through utilization of stakeholder engagement as a method of choice to answer the research question to yield data which accurately represents the real-world CCMDD program phenomenon. This is shown in section 2.3 which indicates the stakeholder engagement as a method of choice to answer the research question. Real world representation of the CCMDD program problem was through utilization of stakeholders; identification methods (2.3.1); categorization according to the different parts of the workplace-based problem (2.3.2); prioritization methods to structure the data gathering schedule (2.3.3); engagement techniques and methods to bring out their different perspectives and supporting literature (2.3.4).

Integrity was attained through validation of data across the relationships linkages that confirmed that all data can be sketched and associated to other data. This is shown through validation of initial cause effect relationships from action research outcomes from data form

identified stakeholders (2.5.2) with the NVivo produced visual mapping cause effect relationships regarding CCMDD program.

According to Batini, Cappiello, Francalanci & Maurino (2009) data quality method comparison may be classified into two key categories based on focus on a subset of data quality issues. The first category consists of complete methodologies, which focus on both the assessment criteria and data improvement costs. The second category consists of audit methodologies, which focus mostly on the assessment criteria with limited focus on data improvement costs (ibid.). While data quality assessment criteria refer to measures utilized to determine data quality, data improvement focus refers to the costs of data improvement (ibid.).

Therefore, triangulation can be seen as a more beneficial approach compared to other data quality methods because it focuses on both data quality assessment criteria such completeness, consistency, conformity, accuracy, integrity and timeliness as well as costs of data quality improvement (Creswell, 2013). Audit methodologies such as peer review and external audits are not a cost-effective data quality method because they focus mostly on the assessment criteria with scant focus on the costs of data improvement (ibid.). Holt & Thorpe (2008) define peer review as a data quality testing method to ensure validity and accuracy by exposing the research project to critique by external peers who are experts in the same field. External auditing involves utilization of an external auditor to scrutinize the research process and findings to assess their accuracy (Creswell, 2013). Consequently, in this research the complete data quality methodology which focuses on both the assessment criteria and data improvement costs was utilized.

2.5. Action research cycle of action, reflection and sense-making

2.*5.1. Techniques and methods utilized to engage with the respective stakeholders and to bring out their different perspectives*

The stakeholder engagement techniques and methods that were utilized to bring out different perspectives included; visualization using drawings, meetings, interviews, emails, focus groups, and telephone calls. According to Dentoni & Bitzer (2016) complex health care problems' multistakeholder engagement methods are adaptable to contextual settings. Also, they may include non-formal dimensions (Yawson, 2015).

The outcome of the first action research cycle engagement with the respective stakeholders yielded findings that indicated their approach and perceptions about the CCMDD program problem and its domains.

2.5.2. Outcomes of identified Stakeholders' approach and perceptions about the workplace-based problem and its domains

The identified stakeholders approached the problem through diverse lenses that agreed and disagreed with the initially identified problem parts. The initial view of the problem parts consisted of 1. Absence of guiding policy 2. CCMDD program contract management 3. Human resource capacity and 4. People- perspective issues.

However, application of a context-aligned Wujec (2017) visual mapping technique indicated a diversity of perspectives based mainly on the expertise, organization, experience, and work level of the identified stakeholder. Of the seven stakeholders engaged, two top managers disagreed, and five managers from diverse levels, organization, and disciplines agreed with the four-component categorization of the CCMDD program problem. The two top managers, the organization-wide deputy director, and policymaker perceived it as a two-component issue consisting mainly of; 2. CCMDD program contract management and 4. People perspectives. However, the deputy directors (pharmacy and primary health care), managers (pharmacy, nursing) and one operational level pharmacist agreed with the four component parts of the problem. Nevertheless, there were diverse perspectives regarding the observed symptomatic effects and their potential relational links to each component. For instance, poor supervision was viewed as a people perspective and or environment issue. Overall, the visual mapping exercise both tested and validated the four-component categorizing of the problem and the relational links.

The action research cycle stakeholder findings and evaluation thereof led to critical reflections about the way forward for the research process. Overall, the findings verified the initial observed apparent cause effect relationships as illustrated in figure 2.4, 2.4A and 2.4B below.

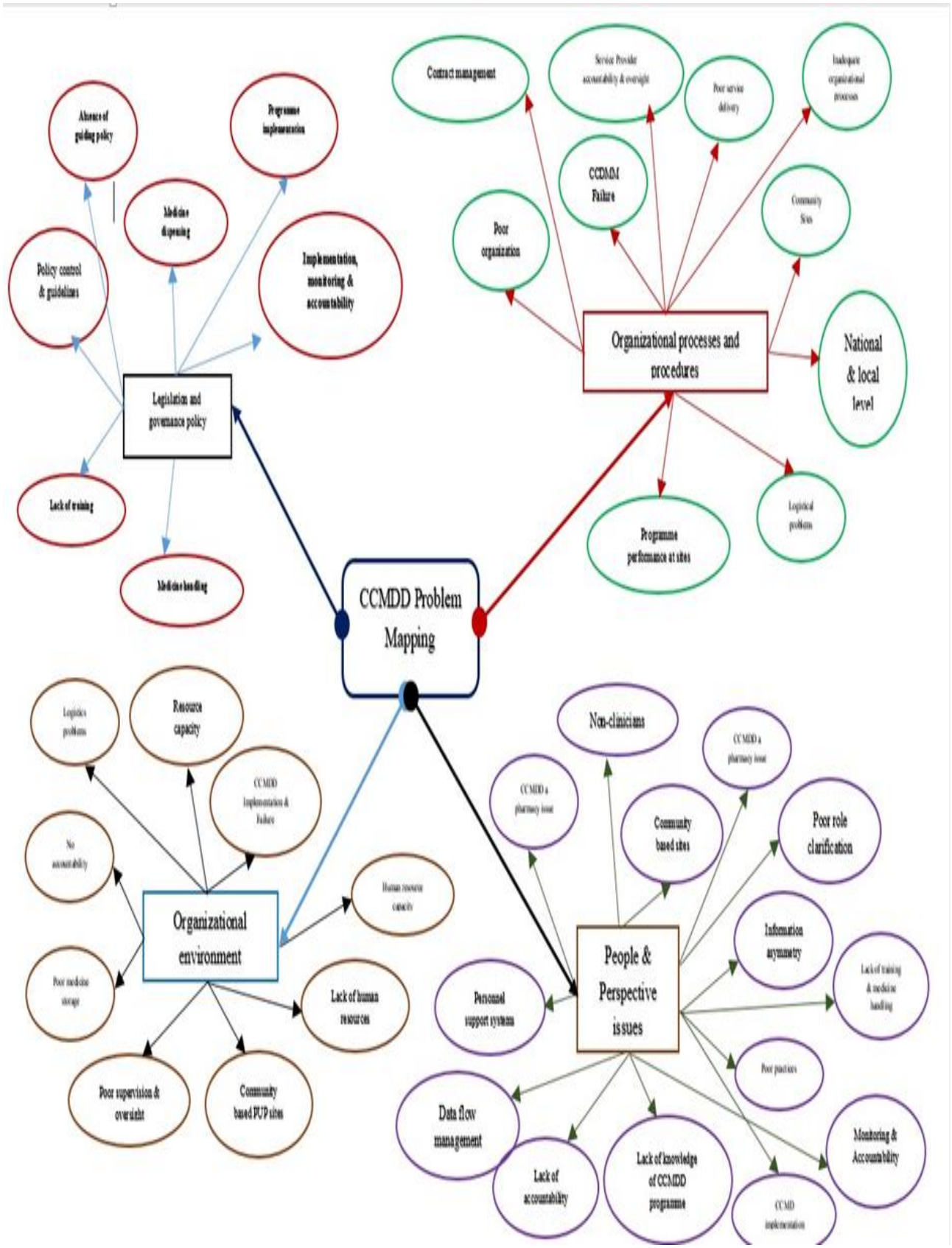

Figure 2.4. Problem mapping results – verification of observed apparent cause effect relationships with stakeholders in the action research cycle

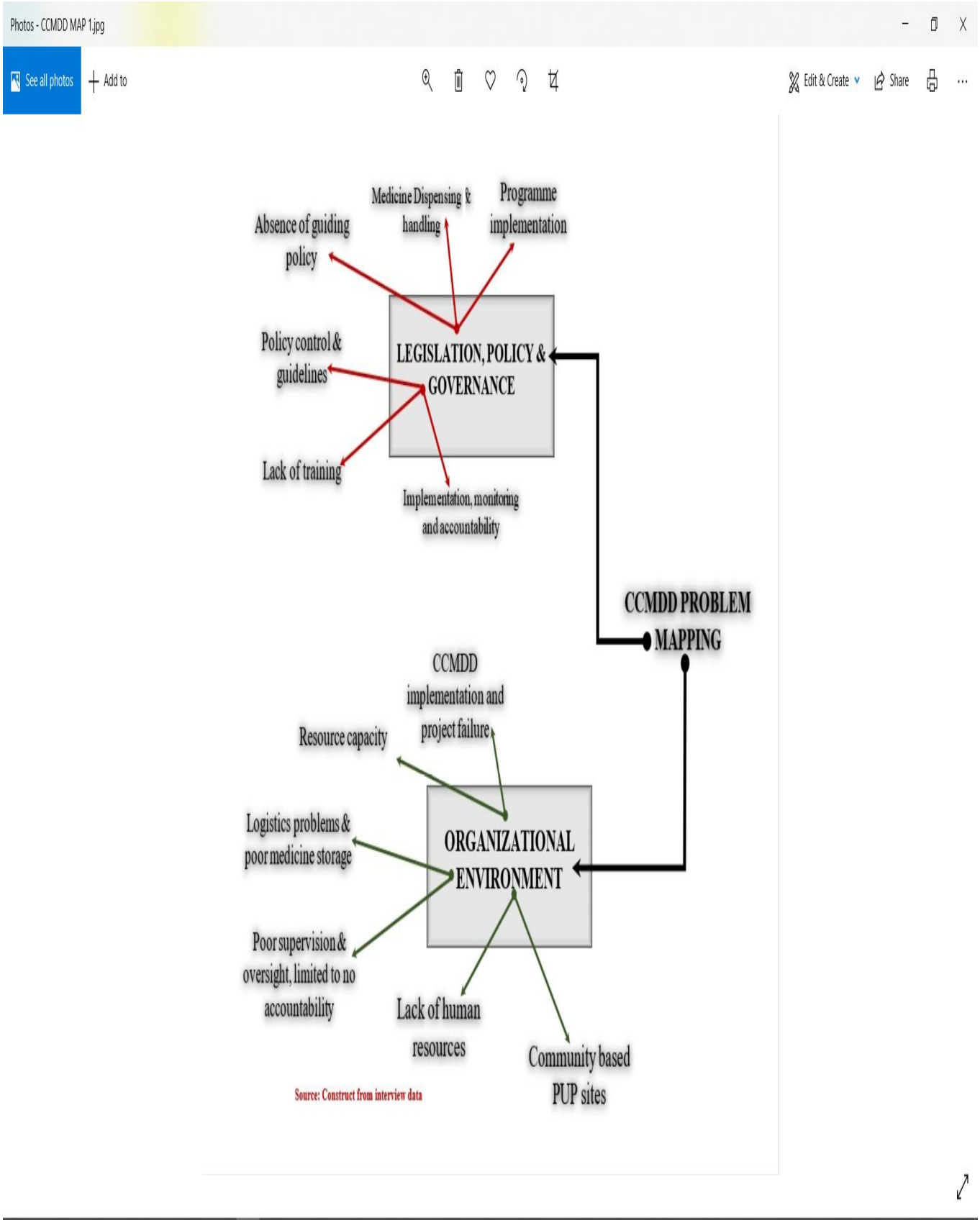

Figure 2.4A Problem mapping results for the domains of legislation, policy & guidance and organizational environment (Expanded view).

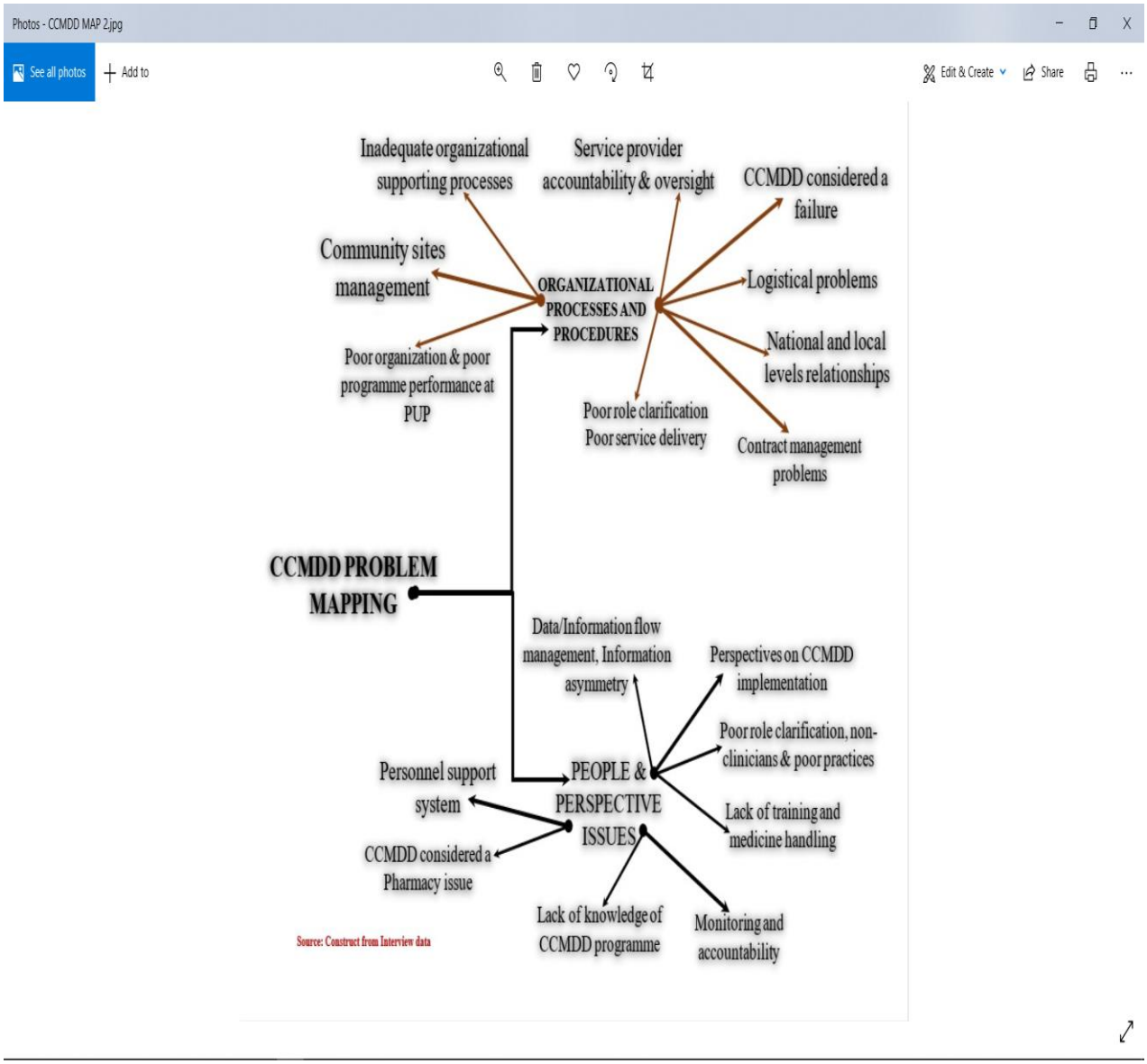

Figure 2.4B Problem mapping results for the domains of organizational processes & procedures and people and perspective issue (Expanded view).

Figure 2.4 is an Nvivo produced visual mapping of the problems associated with the CCMDD program. It is based on the analysis of data from the multi-stakeholder engagement process that occurred during the action research cycle problematization process. The Nvivo thematic analysis is discussed in section 2.8. Figure 2.4A and 2.4B provide the larger font version of figure 2.4

The figure nodes served to map out the problems and issues for further development. The problem mapping findings facilitated the design of the semi-structured interview guiding questions that were utilized for further data collection through interviews. The data mapping results are linked to the Chapter four final study results because they share similar concepts

such as, policy and human resources. Moreover, concepts from the initial problem mapping were utilized in the development of the main interviews. Thus, the two were interlinked yet reported separately.

2.6. Critical reflections and meta-learning about the outcomes of first stakeholder engagement findings and evaluation

According to Coghlan & Brannick (2014) meta-learning is a process of learning through inquiry and reflection about the degree of learning that occurs throughout the enacting of the action steps of the action research cycles and how they are informing the next research steps. Furthermore, meta-learning includes three forms of reflection; self-awareness, the authors thoughts about the processes and procedures utilized and reflection on underlying assumptions and perspectives (Mezirow, 1991). Also, meta-learning consists of three practices; first person, second person and third person practice (Coghlan & Brannick, 2014).

In this study meta-learning in the first-person practice occurred through self-inquiry about author's initial thoughts about theoretical stakeholder engagement techniques that were utilized, as well as reflection on the author's underlying assumptions and perspectives.

2.6.1 First person practice meta-learning: Practical experience of the application of literature-based stakeholder engagement techniques to bring out different perspectives about the CCMDD program problem

The author's initial assumption of the applicability of the theoretical stakeholder engagement techniques in practice according to the planned, prioritized schedule was tested in practice. Resource constraints, such as time, availability of identified stakeholders, and equipment made it unfeasible. Therefore, as a necessary trade-off, the technique was re-aligned to suit third world contextual circumstances. For instance, stakeholders were met one to one when available. Secondly, the process was abbreviated such that all they had to do was to fit a list of effects on already drawn potential nodes according to their perspectives. Furthermore, other stakeholders were from geographically distant locations. The trade-off was to conduct telephonic interviews and send the mapping tool via email.

Moreover, the opportunity became more important than the priority schedule. Thus, although Non-Governmental Organizations' (NGO) directors and managers were not the priority, their presence in a traditional work platform provided a face-to-face meeting opportunity. The

reason for the initial assumptions may be linked to the tendency to trust in peer-reviewed empirical theories until they prove contextually inapplicable. For instance, the Wujec (2017) problem mapping technique seemed viable until inherent resource constraints in the public health sector environment proved different.

Therefore, through practical technique application, practice has been integrated with theory thus yielding greater insight into the experience of applying stakeholder engagement techniques. Consequently, what has been learned through inquiry and reflection (meta-learning in the first-person practice) is that the work context determines the methodology of choice, and it is necessary to trade-off the ideal through flexibility.

2.6.2. Second person practice meta-learning: Knowledge and data about stakeholders' approach and perspectives on the workplace-based problem and the different parts initially identified

According to Coghlan & Brannick (2014) second person practice meta-learning involves collaborative co-inquiry, co-reflection and co-learning with the relevant stakeholders through dialogue and joint action. Furthermore, it involves collaborative reflection on underlying assumptions and perspectives (ibid.).

In this study, second person meta-learning occurred through the problematization and reframing phase of the action cycle. It involved brainstorming with multiple stakeholders with the aim of finding a collaborative intervention plan. Thus, second person practice meta-learning provided collaborative insight into the CCMDD program problem domains and how the problem could be reframed from its initial four domains in alignment with organizational scope of influence and power.

The initial assumptions of the four-component CCMDD program problem were tested through engagement with two top managers, namely, the deputy director and policymaker. Their two-component perspective of the problem was based on their belief that an immediate solution had to be implemented. Thus, focusing on legislation and policy, and increasing human resource was viewed as not a viable option because these are long-term methods with financial implications. However, changing procedures and people perspectives could yield relatively faster benefits for the community. Such perceptions brought to the fore an increased awareness of power relations because the top managers have influential power to move resources towards this study project' realization. Also, it raised questions regarding the reasons for the initial

beliefs, which leaned more on the governance component. This is because, in the traditional hospital environment, medicine availability is highly governed. However, the community, political, and private sector elements add more complexity to the medicine access issue.

Nevertheless, the policymaker and deputy directors' perspectives helped to refocus the thesis on broader social issues that benefit the wider social community rather than personal issues relating to pharmacy implementation difficulties. However, that does not mean that the other five stakeholders' views of the four component CCMDD program problem were void since they work relatively closer to the problem and have hands-on experience with it. It just provided a broader perspective that pinpointed leverage areas for managing the complexity of the CCMDD program issue.

Therefore, the new knowledge enabled integration of the theoretical concepts of cause-effect analysis through mapping techniques and practice to make sense of the CCMDD program experience. The outcome included greater knowledge and experience-based insight that pinpointed potential leverage points for the creation of actionable knowledge and exploration of future action.

Nevertheless, the critical reflections about the outcomes of first stakeholder engagement findings and evaluation led to an analysis of stakeholder potential impact on research focus and scope of the final written thesis.

2.6.3. Third person practice meta-learning: Stakeholder impact on research outcomes, focus and scope

The third person practice meta-learning is the actionable knowledge that emerges as an outcome of co-learning from the collaborative processes of stakeholder engagement during the constructing, action, evaluation, reflection and reframing (Coghlan & Brannick, 2014). It incorporates the learning from the first and second person practices to yield actionable knowledge that goes beyond stakeholders to the wider community thus contributing to the body of actionable knowledge (ibid.).

In this study, the third person practice includes the written actionable knowledge that is presented based on the evidence based empirical findings that informed the recommendations. This is presented and discussed in the conclusions chapter. Furthermore, third person practice meta-learning involves reflection about the results and their consequences (Coghlan & Brannick, 2014). In this study third practice meta-learning consists of the reflection about the

action research cycle results and the consequences thereof on research outcomes, focus and scope.

According to Daviter (2017) complex health care problems may be managed through the utilization of framing and scoping techniques. Framing and scoping techniques are concepts that aim to render the problem manageable while acknowledging the problem's complexity. Thus, through establishment of processes for inclusive participation the problem reframing may lead to workable consensus (ibid.).

In this study, the Daviter (2017) framing and scoping method was utilized to scope the CCMDD program problem from four to two domains. This was because the method facilitates problem scoping and reframing in the context of available resources within the organizations' jurisdiction, specialization or systems (ibid.). Table 2.3 below illustrates stakeholder impact on the research scope.

Table 2.3 indicates how sensemaking from the action research cycle outcome (2) of the engagement of the stakeholders (1) impacted on the problem scope (3) and the potential way forward for the study based on literature (4). It illustrates how through stakeholder engagement; the initial four component view of the problem that was discussed in section 2.5.2 was reframed to a two-component view of the problem. Also, it illustrates the potential way forward for the study based on the outcomes of the problematization process and sensemaking as discussed in section 2.7.

Table 2.3. Stakeholder interaction impact on the research problem scope.

1. Stakeholder	**2. Sensemaking from the action research cycle outcome**	**3. Impact of sensemaking outcome on the research problem scope**	**4. Literature support**	**5. Plan of actio based on sensemaking outcomes and literature support**
1. Policymaker 2. Deputy director	The leverage points were identified as: 1. Belief systems and 2. Procedures and processes for knowledge sharing because they fall within organizational scope of influence and power (2.5.2)	The problem parts were reduced from four to two (2.7).	Daviter (2017)	The initial problem parts a grounded in literature. However, contextual pow relations issues do not support pure academic exploration.
1. Deputy director - Primary Care 3. Manager- Nursing 4. Manager-Pharmacy 5. Clinician	High influence and impact stakeholders can use power over the direction of the research despite evidence-based literature and operational personnel support.	The problem was viewed as consisting of the initially observed problem parts (1.3.7)	Ainsworth & Feyerherm, 2016)	The sensemakir outcome inform ed the structure of the literature review to focus on the leverageable problem parts (2.7).

2.7. Sensemaking from the action research cycles and plan of action

From current findings, it has emerged that the absence of guiding policy domain (1) may be delimited from the broad focus of overall national policy and legislation development to institutionalized governance systems. This is because policy establishment is nationally centralized and is thus beyond the scope of influence for local management teams. Similarly, since contracting is also centralized, the CCMDD program contract management domain (2) may be excluded from this study. Concerning the human resource capacity domain, which is also centralised, it emerged from findings that the CCMDD program problem was leaning more towards poor role clarity and program insight rather than human resource capacity. Therefore, the human resource capacity domain may also be excluded from this study.

The perceptions issue domain, however, appeared crucial. It seemed that the problem involved poor role clarification, lack of program knowledge and insight. Such perception issues may be amenable to education programs within local management' scope of influence. Therefore, the problem domain remained pertinent. Consequently, with the exclusion of the guiding policy, contract management and human resource domains, the CCMDD program problem was scoped down from four to two domains, namely; lack of organizational processes of knowledge sharing, and perspective issues.

2.8. Nvivo thematic analysis

Thematic analysis is a data reduction and analysis strategy in which qualitative data are segmented, categorized, summarized and reconstructed in a way that captures the important concepts within the data set (Given, 2008). It is primarily a descriptive strategy that facilitates the search for patterns of experience within a qualitative data set with the product of the thematic analysis being a description of those patterns and the overarching design that connects them (ibid). Thematic analysis employs the thematic coding methodology by which data are segmented and categorized for thematic analysis (ibid.). Thematic analysis is premised on data reduction which differentiates it from axial and open coding employed in grounded theory, which enrich while increasing the complexity of the data through inclusion of analytic insights and queries used (Creswell, 2013). Furthermore, thematic analysis may include utilization of both apriori themes from previous studies and emerging themes from data analyis (Easterby-Smith, Thorpe & Jackson, 2012). In this study the thematic analysis utilized both deductive and inductive methods. The deductive method included utilization of

apriori codes from previous studies, such as the Magadzire, Marchal & Ward (2016) and Magadzire et al. (2017) studies. However, emerging themes were also incorporated into the findings.

According to Easterby-Smith, Thorpe & Jackson (2012) qualitative data analysis computer programs such as Nvivo facilitate the data analysis process. In this study, the Nvivo software was utilized to facilititate the thematic analysis process for both the action research initial problem mapping data as well as for the interview data. This is illustrated in Appendix 1 and 2 respectively.

In thematic coding, the research commences with a list of themes known or anticipated to be found in the data (Given, 2008). Coding categories serve as receptacles for important ideas (ibid.). Ideas in the data become coding categories through a rigorous process of analytic induction that encompasses both within and across case comparisons. Coding facilitates the development of themes (ibid.)

In this study, the coding process was carried out in two steps. Firstly, the data was broadly examined using the Nvivo qualitative data analysis software for frequently used expressions and general concepts on which the ideas revolved. Secondly, the summaries of the resulting ideas and concepts were then exported to Microsoft Word, where micro-level coding was done. The Nvivo software also simplified micro-level coding through enabling the mapping of key concepts as shown in the word tree map screen grab for the 'implementation' key concept in figure 2.5. Furthermore, the word tree maps of other key concepts such as policy and community are illustrated in Appendix 2A.

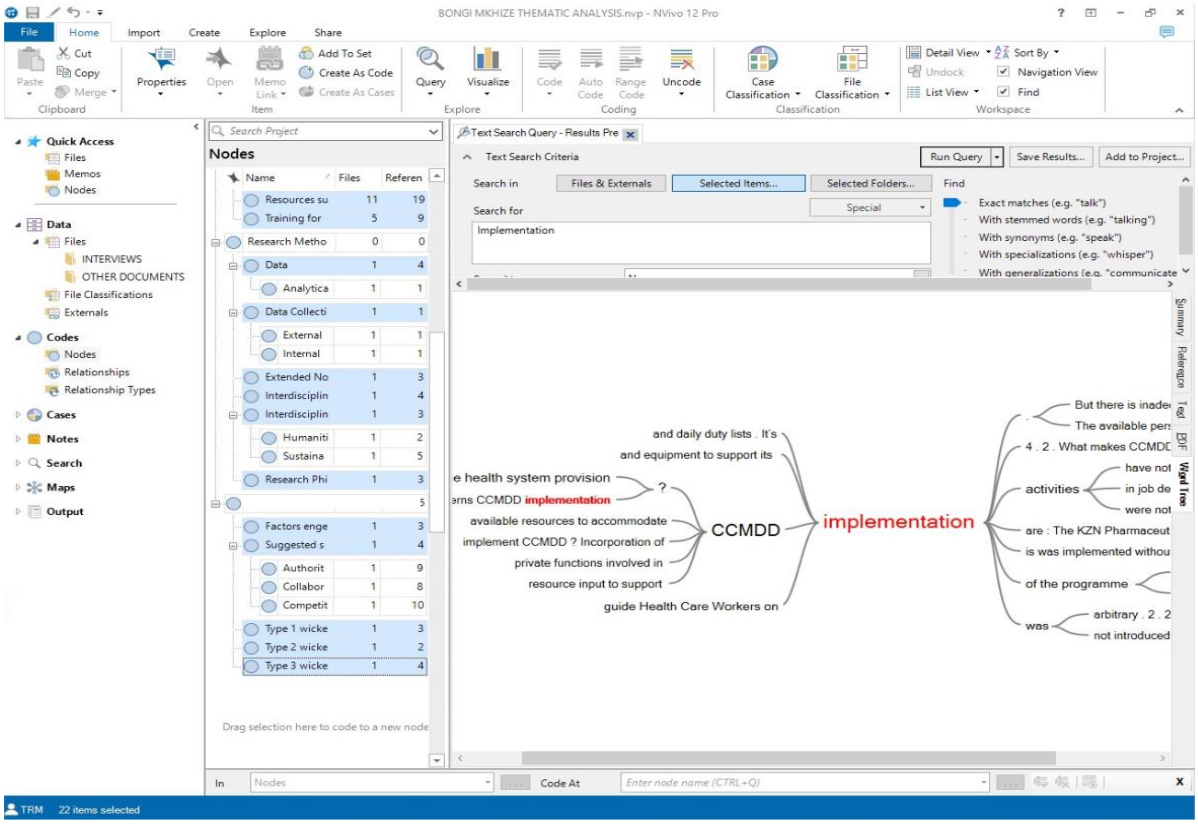

Figure 2.5 - screen grab of the Nvivo thematic analysis

Figure 2.5 is a screen grab of the Nvivo thematic analysis for the theme entitled "Accountability for CCMDD program implementation". The researcher then proceeded to examine the responses of the participants, focusing on those that revolved around the concept of "Implementation".

Creswell (2013) posited that the qualitative data analysis process is flexible and may be crafted relative to the context. In this study, microlevel coding process was accomplished through careful reading of the text and extraction of ideas that were deemed vital and connected with the central problem of the research, for instance, ideas suggested by the research question and the results from the exploratory analyis of data. As can be seen in the thematic analysis table screen grab in figure 2.6, some codes were simply word containers connected with specific references while others were phrases.

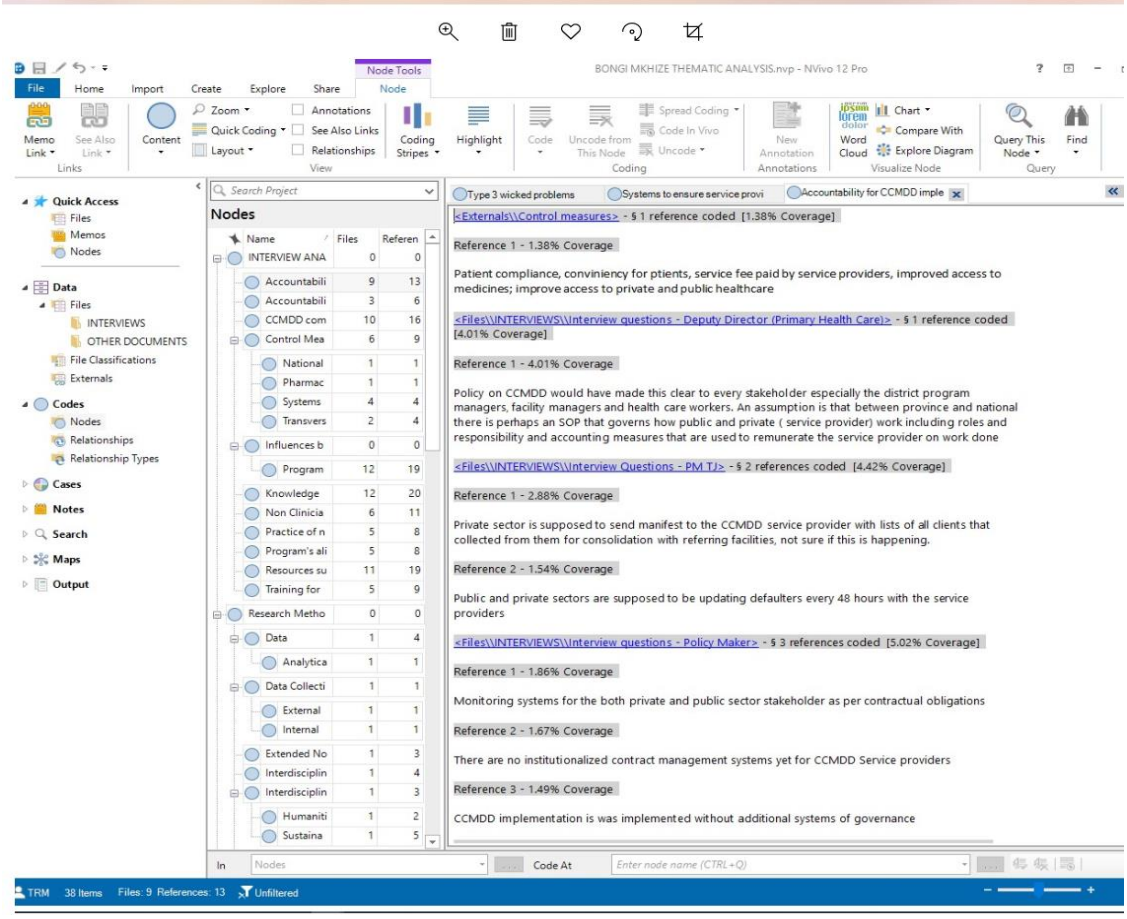

Figure 2.6 - Screen grab of the Nvivo thematic analysis table

Figure 2.6 is a screen grab for the thematic analysis table. It illustrates that the coding process involved codes that were word containers connected with specific references while others were phrases.

The theme development process involved utilization of the central concepts that were derived based on the similarity between the codes related to a given issue and their relation to the central question of the study. This is because the data was analysed based on responses to interview guiding question for each stakeholder. The constructs that were made from grouping similar codes were aggregated into themes, which were then presented in the findings. Furthermore, theme development was facilitated by the initial view of the problem and apparent relations as detailed in section 1.3.7. As shown in section 2.2 the key concepts included the problem domains such as 1. People- Perspective issues 2. Policies and Legislation- 3. Environment-Absence of guiding policy. 3. Processes and procedures-CCMDD program contract management 4. Lack of human resources. Thus, the data was examined to see how the respondents framed their responses around those concepts. All such responses were them grouped and then further subjected to micro-level analysis so that the

various uses and understandings of the concept were assessed and presented under the major themes.

Overall, through exploring the data using word trees (visual data maps) it was possible to analyse the various multi-perspectives held by the multi-stakeholders concerning the CCMDD program. These data connections were then used in coding and subsequent development of themes.

2.9. Ethical considerations

Ethical considerations relate to ensuring the protection of participants from harm related to participating in the research project (Creswell, 2013), for instance, victimization, and loss of dignity. Such considerations are an integral part of the research process and occur prior, during and after the research process (ibid.). For this study, ethical considerations commenced before study initiation through the ethical application process. Having satisfied requirements for both the employer and educators, ethical considerations continued throughout the research process and beyond.

The next section discusses the summary of this chapter.

2.10 Chapter summary

This chapter has detailed the research design for this study. Furthermore, it has indicated the sensemaking outcomes from collaborative stakeholder engagement. Overall, the methodology chapter has indicated how the action research approach enabled flexible methodology utilization, to inform the next research steps of the research project. The key outcomes included; a structured research design consisting of methods and methodologies utilized to answer the research question, a scoped down problem domains focus based on organizational scope of power and influence, and structure for the literature review.

Chapter 3 - Literature review

3. Introduction

As shown in chapter one there appears to be a number of issues that prevent the CCMDD program to increase access to chronic medicines and enrolment rates, such as Perception Issues (1.3.1), Absence of guiding policy (1.3.2), CCMDD program Contract management (1.3.3), Lack of human resource capacity (1.3.4), Utilization of non-clinicians (1.3.5), or Lack of medicine storage skill (1.3.6). As further detailed in section 1.3.1 there appeared to be some direct or indirect relations amongst such issues that at current are not fully understood. Furthermore, it has been learned that even though the CCMDD program problem is complex, there are taming methods that are although not offering problem solution, but may render some aspect of it manageable. Therefore, action research and three scientific disciplines have been flexibly utilized as approaches to tackle it, for instance, sustainability science (Batie, 2008). Furthermore, because of its complex, high interlinkages, it requires the utilization of contingent, context-based approaches for its different components, for instance, situational contingency framework (Alford & Head, 2017). Moreover, because of its trans organizational nature, it requires flexible, integrated, multi stakeholder techniques to facilitate diverse inputs from its multidisciplinary cross-sectional stakeholders. Nevertheless, although multi stakeholder issues tend to be infinitesimally complex they may be tamed through the utilization of framing and scoping frameworks (Burman, Aphane & Mollel, 2017). Therefore, this chapter aims to further explore such direct or indirect relations by drawing on existing frameworks and concepts from existing studies.

3.1. Different scientific disciplines from which the problem can be approached and literature support

The different scientific disciplines from which the CCMDD program problem could be approached include; normal science fields such as; medical and health care sciences, social sciences, and humanities. This is because the problem relates to medicines and is contextualized within the public health care service environment. Furthermore, the problem involves the exploration of a social phenomenon involving the community, and thus involves human actors with diverse perspectives. However, since complex health care problems tend to be multi-dimensional and involve multiple stakeholders they require flexible utilization of difference scientific approaches to facilitate their management (Batie, 2008). Sustainability

science provides an alternative complexity science disciple approach to the problem that is in alignment with the flexibility of the action research philosophy (Funtowicz & Ravetz 1994; Batie, 2008; Coghlan & Brannick, 2014). This is because sustainability science is highly integrated, multidisciplinary and focuses on stakeholder engagement, thus facilitating action research sensemaking in complex health care problems (ibid).

3.1.1. Sustainability science

Studies concur that post-normal science disciplines provide a viable option for tackling health care problems because of their flexibility, integrative, multidisciplinary and multi perspective nature, for example, sustainability science (Sarewitz, 2004; Batie, 2008). Batie (2008) describes sustainability science as an integrated, multidisciplinary, problem-focused, user-driven science that seeks to analyse and predict behaviour at multiple levels of complex self-organizing systems. Furthermore, when sustainability science is utilized in conjunction with "normal" science, sustainability science provides value to complex health care problem analytics (Miller et al., 2014). This is because sustainability science explores underlying values behind the disputes and their societal implications. For instance, through the utilization of research knowledge from multidisciplinary fields such as natural, social, and the humanities (ibid.). Consequently, sustainability science will be used in conjunction with Medical and health care sciences and Humanities in this study. Moreover, sustainability science adopts the approach that it is possible to attain a desirable future through the stakeholder engagement process because engagement can change the identification and framing of the problem. Consequently, since stakeholders are crucial for problem framing, planning and implementation towards change, sustainability science is a viable approach. Further support for the sustainability science approach is provided by the Alford & Head (2017) situational contingency framework which advocates the utilization of different approaches based on the different organizational levels of the affected stakeholders. Nevertheless, medical health care science disciplines also have a role to play in the CCMDD program research issue.

3.1.2. Medical and health care sciences

Medical and health care sciences are also a viable scientific approach choice because the supporting frameworks for the cause-effect relationships relating to medicine access sustainability are contextualized in that field. For instance, the UN (2012); Bigdeli (2013); and

Van Olmen (2012). They offer a systemic approach to medicine sustainability in a healthcare environment. However, their solo use is not beneficial to cover the divergent cognitive aspects of the multidimensional complex health care problem. Hence the need to utilize theories in the humanities science field.

3.1.3. Humanities and Social science

Humanities and social sciences are a viable option because they support the perception issue (1.1) of the CCMDD program problem. Literature indicates that people's perceptions contribute to their behaviour. Other behavioral models that support the CCMDD program perception issues include; Young (1982); Rosenstock (1995); Andersen (1995).

3.2. Frameworks that support potential cause-effect relationships in CCMDD program failure

One of such frameworks from the medical care sciences discipline stated in section 3.1.2. that have been identified in support of identifying contributing factors to failure to provide sustainable medicine access through community-based distribution is the United Nations (2012) medicine governance framework that posits that barriers to medicine access include absence of guiding policy and lack of human resource capacity. The other framework is the Bigdeli et al. (2012) framework which posits that barriers also include failure to acknowledge systemic linkages involved in sustaining medicine access in the highly complex health care environment. Similarly, the van Olmen et al (2012) framework supports the additional complexity angle, and its contribution to failure to attain sustainable medicine.

Overall, the potential linkages between CCMDD program issues and extant literature empirical and frameworks are illustrated in Figure 3.1 below.`

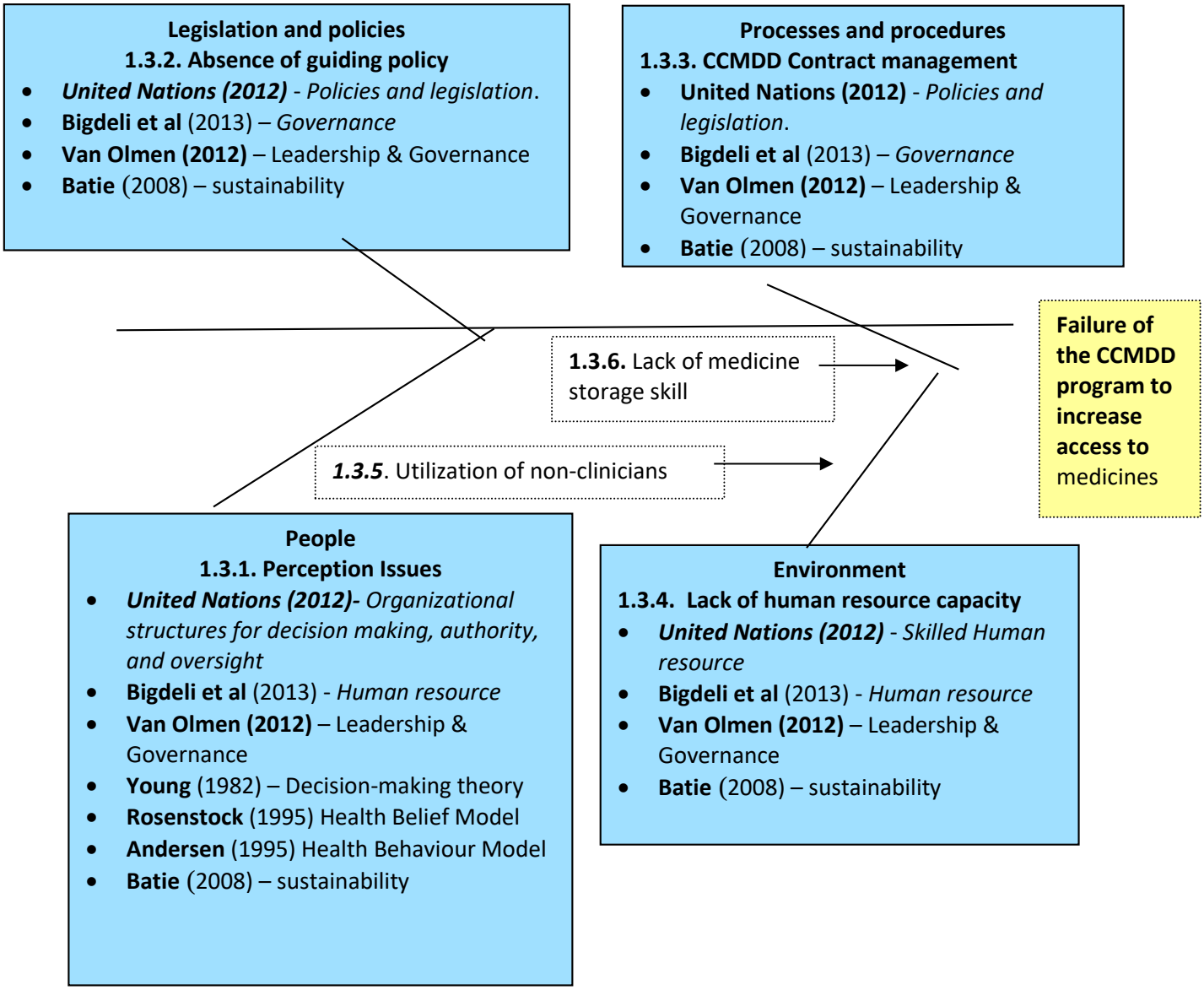

Figure 3.1 - CCMDD program issues cause and effect linkages to literature and research

Building on the initially identified CCMDD program cause-effect relations (Fig 1.4, 1.3.7), Figure 3.1 illustrates how and where the CCMDD program issues might relate to each other in accordance with such frameworks. For instance, the Perception Issues (1.3.1) links to the United Nations (2012) principle of the establishment of organizational structures for decision making, authority, and oversight. Furthermore, the Perception Issues (1.3.1) is addressed in the Bigdeli et al (2013) framework by the principle of establishing effective Human resources. Similarly, it is addressed by the principle of human resources in the van Olmen (2012) framework. Furthermore, people perception issues are covered by the Young (1982) Decision-making theory, the Rosenstock (1995) Health Belief Model, and the Andersen (1995) Health Behaviour Model.

The following section details the conceptual framework for this study in alignment with figure 3.1.

3.2.1. The United Nations (2012 Access to the medicine's governance framework

The United Nations (2012)Access to the medicine's governance framework (figure 3.2) perceives governance as underpinned by four building blocks; establishment of policies and legislation, strengthening organizational structures for appropriate decision making, authority & oversight, improving human resources management to enhance performance & ethical practices, and incorporating good governance practices into systems & processes.

Justification for its inclusion in this study is because it adopts the following principles: 1. Sustainable access to medicine requires authoritative oversight for service provision 2. Performance according to standards and ethics requires skilled personnel 3. Access to medicines sustainability is underpinned by strategic vision, participation, transparency, consensus orientation, the rule of law, good governance, equity, efficiency, and responsiveness.

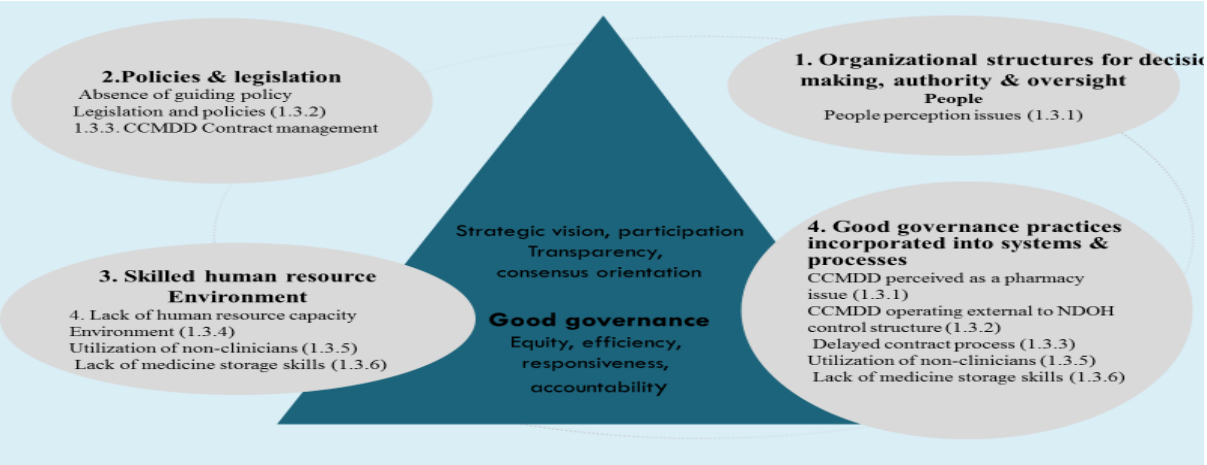

Figure 3.2 - Linkages between CCMDD program issues and the United Nations (2012) Access to medicines governance framework analogue

3.2.2. Health Systems Dynamics framework

The Van Olmen et al. (2012) Health systems dynamics framework (figure 3.3) is a standard framework for the analysis of health systems at the national, intermediate or local level. It is justifiable to use it in this study because it acknowledges complex relationships between medicines and other health systems components for instance; governance - policies,

regulatory frameworks; resources such as medicines supply, human resources and health information system.

Furthermore, the framework is justifiable for inclusion because it acknowledges the people impact on the health system. Moreover, it acknowledges the impact of contextual factors, for instance; policies, reforms, supporting stakeholders, and social determinants of health.

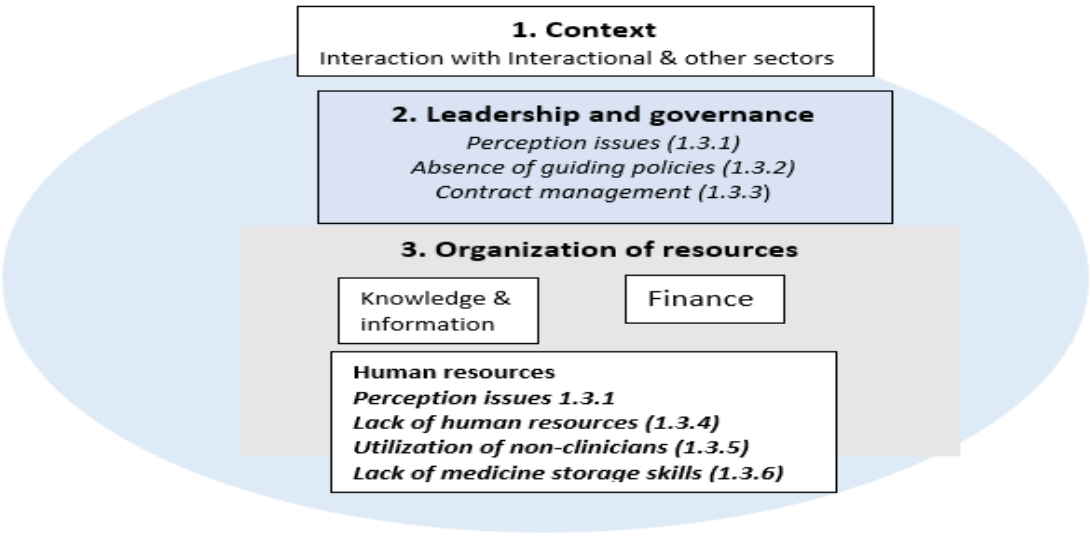

Figure 3.3 - Linkages between CCMDD program issues and the van Olmen et al. (2012) framework analogue

3.2.3. Systemic Approach to medicine access

The Bigdeli et al. (2013) Access to medicines through a systemic approach (figure 3.4) perceives provision of sustainable access to medicine as an interlinked process with a high dependency on other aspects and actors both internal and external to the organization, for instance, the human resources required to manage the logistics of order, supply, and stock control, finance, as well as at policy level.

What makes the framework justifiable for this study is that it acknowledges that barriers to medicine access occur at multiple levels of the system. Furthermore, it acknowledges that access to medicine determinants occurs at multiple levels, namely, nationally, regionally and at international contexts.

Figure 3.4 - Linkages between CCMDD program issues and the Bigdeli et al. (2013) Access to medicines through a systemic approach framework analogue

In addition to the key frameworks detailed in the preceding section, there are key studies that support potential cause-effect relationships for the CCMDD program problem.

3.3. Key studies that support potential cause-effect relationships for perspective issues in this study

As stated in the introduction, one of the key domains of the CCMDD program problem is perception issues. Therefore, the next section indicates how perceptions are influenced by experiences, values and belief systems.

3.3.1. Connecting People perception (1.3.1) issues relationship through stakeholders and frameworks

The cause-effect relationship between people perception issues and failure to increase medicine access through community-based distribution was established through stakeholder analysis from both observation and on literature basis. Although it appeared at the practice level as if health management (local and national) were the potential cause, literature revealed that the Government is the responsible overall stakeholder. This is because Government through its multi-levels (political, health service, community, private sector) has the mandate to establish legislation and policy to ensure sustainability of medicine access (van Olmen et al., 2012). The relationship between people perception and CCMDD program failure is further corroborated

by studies that concluded that lack of legislation and policy for the CCMDD program contributed to its failure (Magadzire, Marchal & Ward, 2015; Magadzire, Marchal & Ward, 2016). However, perceptions are also influenced by experiences, values and belief systems.

3.3.2. Perceptions are influenced by experiences, values and belief systems

Studies concur that there is a potential link between people perception issues and failure to increase access to medicine access through community-based distribution (van Olmen et al., 2012; De Schepper, Dooms & Haezendonck, 2014; Jalali et al., 2017; Stankov et al., 2017). The key reason is that people's perceptions are influenced by their experiences, values and belief systems which shape their behavior (Stankov et al., 2017). This suggests that the diversity in stakeholders' mental models may impact negatively on CCMDD program sustainability because it is dependent on teamwork but has to be implemented in an environment steeped in silo mentality. Furthermore, people perceptions are dynamic irrespective of dealing with the same health intervention program, which contributes to conflict associated with program failure (Jalali et al., 2017). Even if stakeholder roles are clarified, people's perceptions remain varied because of diverse expectations regarding processes and outcomes (De Schepper, Dooms & Haezendonck, 2014). Such variance in people's perceptions contributes to the failure to increase access to medicine because people and their relationships are crucial actors in maintaining its sustainability (van Olmen et al., 2012).

Lonnroth et al. (2001) conducted a study to determine why people bypassed nearby free public health service for costly, distant, private service providers among people with tuberculosis in Ho Chi Minh City. Findings indicated that people's perceptions of the service provider impacted their decision making and behavior. For instance, the perception that government-run services provide low-quality medicine. They also found that people's perceptions were influenced by community beliefs that stigmatized free health care service as welfare for the poor.

Akin & Hutchinson (1999) found that people's perceptions about the quality of service determined their choice of service provider despite costs and distance. They concluded that there is a variance of perspectives between policymakers and receivers of healthcare service. For instance, while policymakers believe that access is quality, receivers appear to perceive quality differently. This is evidenced by the high percentage of people who bypass proximal public free access facilities for costly distant private facilities. For instance, the Kahabuka,

Gunnar, Marie, Hinderaker (2012) study found the bypassing rate to be 59.2% for child health illness in Tanzania.

Theoretical frameworks concur with the empirical findings that people's perceptions are influenced by experiences, values and belief systems. The Young (1982) Decision-making theory posits that the reasons why individuals decide to choose one health service provider over another are based on individual choices. Such individual choices are underpinned by unique cognitive models that drive their perceptions, values and beliefs systems, which then influence behavior.

Rosenstock (1995) Health Belief Model, on the other hand, posits that individual attitudes and belief systems determine an individual's health-seeking behaviors. For instance, people may choose traditional healer assistance over attention by skilled clinicians informal health care facilities. Therefore, although most people in rural areas of South Africa are affected by high poverty levels and cannot afford travel costs to clinics that are more often distant (Eyles et al., 2015; Gubela et al., 2017) people's preferences still influenced their behavior thus contributing to program failure. This is significant because approximately 45% of the population in South Africa still lives on about $2 per day, which is defined as the upper limit for the definition of poverty. Moreover, more than 10 million people live on less than $1 per day, which is defined as the food poverty line below which people are not able to buy food to support a healthy lifestyle (Statistics South Africa, 2014). This suggests that the influence of people perception on their behavior must be profound to drive them to ignore free service despite poverty levels. Nevertheless, perceptions may also contribute to failure because of dynamic, and diverse interpretations.

3.3.3. Perceptions are dynamic irrespective of dealing with the same health intervention program

Studies concur that people's perceptions are dynamic irrespective of dealing with the same health intervention program, which potentially contributes to conflict associated with program failure (Jalali et al., 2017).

Silvestro (2005) conducted a study to compare patient and staff perceptions of quality in the United Kingdom. Findings indicated that while managers perceived access to be the most important quality factor patients, were not of a similar perspective. Such variance in perceptions may have a basis in that individuals tend to support what they believe is quality

according to their standards. The author concluded that the managers' misconceptions about patient expectations and perceptions might have led to inappropriate investment decisions and improvement priorities.

Abuosi (2015) study findings indicated that there was a significant difference in the overall perception of the quality of care between patients and healthcare providers. He concluded that patients might not rate increased access as important as providers think. Therefore, he recommended that hospital management teams should evaluate patients' perceptions of quality of care to inform intervention strategies that aim to improve quality of care, since what they may consider as good quality service may be rated less favorably by patients.

Mitchell et al (2016) studied the impact of cognitive diversity in multidisciplinary teams to establish whether, and how, these differences influence team effectiveness and sustainability. Findings indicated that individual perspectives contribute to different interpretations and meanings which may result in negative outcomes.

Jalali et al (2017) conducted a study to explore contributing factors to the failure of community-based programs aimed at reducing cardiac disease through the introduction of healthy food and exercise as a mechanism to reduce obesity. Findings indicated that critical contributors to program failure included that people's perceptions about cardiac risk and health foods were different from those of health care providers.

De Schepper, Dooms & Haezendonck (2014) conducted a study to determine the impact of allocating stakeholder responsibilities at program commencement to program failure. They found that people perceptions contributed to failure irrespective of initial role clarification because of the dynamism of their cognitive processes, which may be influenced by organizational climate and culture.

3.3.4. Perceptions are influenced by organizational climate and culture

There is a concurrence in the literature that people' perceptions are influenced by organizational climate and culture which impacts on their behavior. Berberoglu (2018) conducted a study to evaluate the impact of healthcare employees' perceptions of how they deliver the service. Findings revealed that the organizational climate influenced employee's perceptions. The organizational climate was found to be highly interconnected with organizational commitment and perceived organizational performance. He concluded that employees' perceptions influence how they deliver public health service.

Kastanakis & Voyer (2014) analyzed the effects of culture on pre-behavioral processes, for instance, perception and cognition. Findings indicated that culturally conditioned perception affects cognition. He concluded that culture influenced perception and cognition

Theoretical frameworks support the relationship between the dynamism of people's perceptions and its impact on their behavior. The Andersen (1995) Health Behaviour Model sought to determine factors that lead to the use of health services. It posits that dynamic cognitive inclinations pre-determine peoples' health behavior inclusive of; perceived need and belief in a health systems' effectiveness in treating illness. Consequently, if people perceive themselves as not needing a health service or perceive the system as inefficient, their behavior will be impacted negatively. Thus, they may not support intervention, such as the CCMDD program.

The van Olmen et al (2012) framework posits that variance in people's perceptions contributes to the failure to increase access to medicine because people and their relationships are crucial actors in maintaining its sustainability. The Bigdeli et al. (2013) framework, on the other hand, posits that people's perceptions contribute to failure to sustain equitable medicine access because people in their health practitioner roles drive health service performance.

The empirical and theoretical study findings above relate to this researchers' study because of shared aim, strategy, and stakeholders. Firstly, just like the CCMDD program, the studies aimed to explore barriers to increasing medicine access through community distribution, thus potentially cutting out travel costs. Secondly, the shared strategy is government intervention to attain better health outcomes for chronic diseases. Thirdly, the shared stakeholders are the public and the Government at its various levels of governance, for instance, health care facilities, political, and community levels.

Overall, what is known from extant literature indicates that how people behave may be rooted in their belief systems, culture, and organizational climate. However, because of the dynamism of diverse perceptions, the arising potential conflict may contribute to CCMDD program failure irrespective of the level of people involved. For instance, policymakers, personnel, politicians or patients. For example, people may not view the CCMDD program as beneficial in contrast to Government perceptions that drive the community-based strategy. What is not clear from the literature is how these findings apply to a different setting such as eThekwini district. Therefore, this study will utilize research methods to explore contributing factors to failure to increase access to medicine through community-based distribution in such a different setting.

Such an exploration includes attaining a greater comprehension of the problem domains, determinants, and the stakeholders that contribute to the CCMDD program problem.

3.4. Managerial perspectives on potential cause-effect relationships related to guiding policy issues and contract management

3.4.1. Executive authority and control

Extant literature concurs that lack of executive authority and control measures to coordinate stakeholders involved in program implementation contributes to program failure (Gilson & Raphaely, 2008; Morrow, 2015). Earlier research by authors such as Raphaely (2008) agreed that policy is a crucial to maintaining stakeholder commitment and consequent medicine access sustainability. More recent research findings such as Morrow (2015) affirm that governance of the various actors from different actors is key to effective medicine access sustainability.

3.4.2. Systems for ensuring accountability and their influence on program performance

The role of systems of ensuring accountability and its positive contribution to performance has been affirmed by authors (Cohen-Kohler 2007; Zakus et al. 2010). As such, earlier findings by researchers such as Cohen-Kohler (2007) posited that poor accountability is a key constraint to effective health care program sustainability. Similar emphasis has been reinforced by authors such as Zakus et al. (2010) indicating that the key to sustainable health care program performance lies with systems of accountability for the various actors at multiple levels.

3.4.3. Contract management executive authority and control

There is concurrence in literature that lack of contract management executive authority and control in community-based healthcare provision interventions is a contributing factor to failure (United Nations, 2012, Bigdeli et al., 2013; van Olmen, 2012). According to Cohen-Kohler (2007) Government bureaucracy restricts local organizational level power and authority to monitor, coordinate, regulate and enforce performance of centrally contracted Service Providers. Earlier research such as that conducted by Reich (2002) affirms that although Government has the mandate to provide sustainable access to medicine, in practice,

the State's power is often undermined by forces at multiple levels. Recent research in this area such as that done by Frost & Reich (2010) and Zakus et al. (2010) maintain that centralized macro policy and funding can hinder program sustainability.

3.4.4. Organizational processes and procedures for contract management and their influence on program performance

Authors concur that lack of organizational processes and procedures for contract management has a negative influence on program performance (De Schepper, Dooms & Haezendonck, 2014; Magadzire et al., 2017). Magadzire et al. (2017) found that the absence of micro-level contract governance contributes to implementation challenges due to lack of accountability. De Schepper, Dooms & Haezendonck (2014) found that in the absence of organizational contract management systems, the diverse stakeholder expectations regarding intervention processes and outcomes contributed to program failure.

3.5. The role of Human Resource Management and its relation to the health care system context

3.5.1. Human resource executive authority and control

Lack of human resource executive authority and control contributes to CCMDD program failure (Marchal et al. 2010; Kalk, 2011; Magadzire, Marchal & Ward, 2016). For example, study findings from Marchal et al. (2010) agree that Government health Ministry failure on its mandate to provide policy to regulate and balance human resource incentives that ensure availability of optimal human resource skill mix contributed to CCMDD program failure. This argument is supported by study findings from Kalk (2011) and Magadzire, Marchal & Ward (2016) that report that lack of optimal human resource executive control that ensures availability of adequate human resource capacity to support CCMDD program implementation contributed to failure to increase access to medicines through community-based sites.

3.5.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation

The utilization of non-clinicians at community–based chronic medicine dispensing sites negatively influences the implementation and outcomes of health interventions (Abuosi, 2015; Eyles et al., 2015; Magadzire, Marchal & Ward, 2016; Gubela et al., 2017). According to Magadzire, Marchal & Ward (2016), the utilization of non-clinician who have no medicine storage skills at community sites is a contributing factor to CCMDD program failure. This is because of the predominant perception of low-quality services at non-clinician driven community sites (Gubela et al., 2017). Also, patients may not perceive access as more important than quality (Abuosi, 2015). Thus, although most people in rural areas of South Africa are affected by high poverty levels and cannot afford travel costs to clinics that are more often distant, people's perception of the quality-of-care preferences still influenced their behaviour, thus contributing to community-based health care program failure.

3.5.3. Comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration, and deployment

Human resource practices and strategies that fail to balance financial and non-financial incentives have a negative influence on the implementation and outcomes of health care interventions (Abuosi, 2015; Eyles et al., 2015; Magadzire, Marchal & Ward, 2016; Gubela et al., 2017). According to Magadzire, Marchal & Ward (2016), the utilization of non-clinician who have no medicine storage skills at community sites is a contributing factor to CCMDD program failure. This is because of the predominant perception of low-quality services at non-clinician driven community sites (Gubela et al., 2017). Also, patients may not perceive access as more important than quality (Abuosi, 2015). Thus, although most people in rural areas of South Africa are affected by high poverty levels and cannot afford travel costs to clinics that are more often distant, people's perception of the quality-of-care preferences still influenced their behavior, thus contributing to community-based health care program failure.

3.6. Summary of literature review

The review of literature has underscored key findings from empirical literature concerning key issues and problems influencing the ineffectiveness of the CCMDD program and other similar programs in improving chronic medication dispensing and patient enrolment. Among the key

insights from the review it was found that perception issues concerning the program among key stakeholders, managerial and governance incompetence manifest in absence of guiding policies thereby creating an inefficient system were among key issues. In addition to these are, lack of human resources capacity, which brought about the employment of non-clinicians at medicine dispensing points who were found to be riddled with poor medicine storage and handling skills and CCMDD program contract management problems mainly manifesting through poor department and service provider relations, crippling service provider governance.

The literature review also identified among different frameworks, three key frameworks which focused on effective ways of multistakeholder problem manageability. United Nations (2012) identifies contributing factors to poor governance and management of dispensing of public chronic medicines. Bigdeli et al (2013) proposed multifaceted barriers spanning, governance and multiplayer entrenched networks and including systemic linkages. The van Olmen (2012) framework focused on issues of leadership and governance at whose heart was failure of coordination crippling the effectiveness of chronic medicine dispensing. Governance was seen to be at the centre of the existing cause-effect relationships since it defines underlying policy and legislative environment within which all other stakeholders' interplay. Literature also highlighted the source and pattern of multistakeholder problem manifestation within this ineffective governance environment. It was proposed that experience, values and belief systems create mental models in stakeholders, which are dynamic and influence how they operate within any given environment.

Multistakeholder engagement-frameworks were also identified because of their potential to facilitate complex health care problem management. Such methods were seen to be grounded in contingent approaches to management and context based, with the specific context being rooted in the influences shaping the perceptions of stakeholders particularly those at the heart of the CCMDD program.

The next section follows the mentioned observations from literature through data analysis and presentation of the findings.

Chapter 4 - Findings and evaluation

4. Introduction

This chapter presents the results and findings from the dataset conducted using a thematic analysis. The chapter commenced with a focus on thematic analysis as the underlying method of qualitative data analysis of the interview guiding questions. The findings are presented and interpreted. The interpretation was guided by the central premises of the study and the research interview guiding questions with the primary focus being on description yet also highlighting underlying effects behind the descriptive portrayal of the multiple stakeholder impact on the program objectives and performance.

4.1. Perspective Issues in community-based healthcare provision and associated problems

Analysis of the interview data revealed the existence of different perspectives among stakeholders about the design and overall outcomes of the CCMDD program, their roles, and how they believed the design was being effective or not. Among senior executives in the Department of Health (DOH), the program is viewed as an effective vehicle for chronic medication roll out with the community-based design achieving better access to chronic medicines for communities and reducing patient congestion at the hospital and primary health care clinics. The executives, however, noted that primary limitations were rooted in conflicting perspectives of other stakeholders, particularly the low-level medical practitioners at different levels of the Departmental hierarchy of management. Such perspectives include; increased administrative burden, lack of proper program implementation. Consequently, such perspectives have contributed to problems of lack of involvement, limited political buy-in, poor patient mobilization, and limited interdisciplinary as well as interdepartmental networks that would streamline the program's effectiveness.

"Lack of involvement or CCMDD program champions in the facility who work hand in glove with Pharmacist Assistants at clinics or Pharmacist at Community Health Care centers and Hospitals" Deputy Director, Primary Health Care

The interviews undertaken focused on stakeholders from the supply side of the CCMDD program, such as primary health care providers, senior executives, and practitioners. For

instance, the dominant perspectives included that CCMDD program internal problems stem from various views and understandings concerning operational perspectives regarding the program. While community-based healthcare systems were seen as important as more decentralized and effective systems, others saw the program as riddled with a lack of ownership, poor implementation, and increased administrative burden for understaffed departments.

“The problem with CCMDD program is not so much a resource but more poor ownership of the program by relevant cadre of staff at all levels but with great emphasis at facility levels” Human Resources Manager.

"The Service Provider facility support visits (done by the initial Service Provider) are reported to have eliminated many challenges that health care workers currently report, e.g., mentorship or scriptwriting processes and systems …" Deputy Director, Primary Health Care

"CCMDD program came with a lot of administrative duties, which needed extra human resources." Policymaker

The program has also been associated with service provision cost reduction and generation of employment within communities since the disbursement of pre-packaged medicines to patients does not require medical expertise. The rationale is that issuing of medicine parcels is a low-level administrative job which may be provided by laypeople at the community level.

"To reduce costs that would be incurred with higher-level clinicians staff and create employment within communities" Deputy Manager, Clinical Specialist Team

Thus, on one end of the spectrum, CCMDD program is viewed as a successful community-based program that promises to bring medicine delivery to communities more efficiently, while reducing health facility patient congestion and improving communication between healthcare departments and communities. However, on the other end of the spectrum is the view of CCMDD program as this ambitious project to decentralize chronic medicine distribution dependent on external resources, particularly Non-Governmental Organizations and community support. It is also perceived as having poor administrative design and implementation and the absence of long-range planning. Such perceptions are perceived to be hampering the progress of the program since its rollout.

"The service provider that the non-clinicians at community-based distribution sites has the contact, which is supposed to be providing support, however, these sites end up looking for support from mother hospitals/referral facilities, whenever there are challenges. There seems to be a lack of support in this regard" Policy Maker

4.1.1. Belief systems and their influence on CCMDD program implementation problems

Analysis of the data concerning the positionality of the CCMDD program within the broader design of the Health department revealed a somewhat polarized narrative. Said polarity was evident between those who saw the program as well-positioned with the organizational strategies and planning and those who saw the program as out of line with the broader plans of the organization. However, the observed polarization seems to be based on specific aspects of the CCMDD program and not on its overall design, such that there are aspects where stakeholders seem to be unanimous, and those where there is no consensus. Stakeholders who hold that the CCMDD program is compatible with the broader objectives of the organization alluded to aspects of the program, such as insourcing as against outsourcing and the need for improved accountability by organizational personnel. They also pointed to the need for the development of in-house monitoring and reporting systems and the elimination of data discrepancies. The underlying premise gleaned from managerial level personnel suggested they perceive the CCMDD program is well-positioned to meet the broader service delivery goals of the organization. However, there are noted and needed changes. These included that; there must be a shift from outsourcing toward insourcing of the dispensing and distribution of medicine parcels as this will eliminate the current challenges with accountability the organization is facing in operating with independent Service Provider. Data asymmetry resulting from limited data access limits the capacity of the organization to influence important aspects of the problem. Consequently, this group of stakeholders holds that the organization needs to eliminate data discrepancies and develop in-house monitoring and reporting systems. In their perspective, program insourcing may improve access to program operational information with a consequential improvement in program performance.

"*In-sourcing of the dispensing and distribution and do away with private dispensing and distribution to improve accountability by Departmental personnel, develop inhouse monitoring*

and reporting systems which will eliminate data discrepancies as service providers" Chief Director, Public Health Specialist

Also, this group holds that what makes CCMDD program implementation incompatible with routine work operations is a lack of standard operating procedures, clear role clarification, as well as organizational monitoring systems. Lack of such directives has contributed to poor program oversight and accountability. Stakeholders must be attuned to their responsibilities and standard guidelines established to form the bases for program benchmarking and performance evaluation.

"*All stakeholders need to be held responsible for their part in the program. The Standard Operating Procedures indicate the responsibilities of various role players and processes. However, no monitoring, no oversight and therefore no accountability meet this" Chief Director, Public Health Specialist*

"*Support the upgrading of community sites for collection of parcels, Service Providers to minimize the exclusion list so that more patients can be enrolled." Human Resources Manager*

Human resources managers also view seemingly incompatibility problems as being solved through the upgrading of community sites for collection of parcels and encouraging service providers to minimize exclusion of patients from lists early so that rapid changes in client manifests can be capped. Community engagement can be redressed through periodic orientation and consistent orientation. These efforts should be corroborated by addressing emergent challenges and the establishment of facility operational plans. Thus, this first group holds that the CCMDD program is operational and compatible with the Department of Health, however some structural issues to do with stakeholders and organizational dynamics must be addressed to improve the program performance.

Thus, some benefits and achievements were proposed to have accrued since the introduction of the program. For instance, decongestion of medical and primary healthcare centres. Such benefits were perceived as having improved the quality of health and facilitated a greater focus on the patient. However, these benefits were pointed out as having been accompanied by some inefficiencies such as increased administrative work and the need for supply chain upgrading in terms of information across departments, which has hampered performance.

"*CCMDD program promotes the decongestion of facilities, thus allowing focus on patients needing more attention. However, it also introduces an abundance of administrative tasks such as records keeping" Policy Maker*

The other view which arises from the perspectives of the other groups of respondents, particularly those at the lower levels of management, at the organization's operational level seems to hold that the program is incompatible with the overall National Department of Health (NDOH) plans at different levels. Factors raised include that implementation of the program was improperly done, the program lacked clear role clarification, CCMDD program activities were not incorporated into job descriptions. Problems with information sharing across departments resulted in the absence of monitoring systems for program performance.

"*CCMDD program implementation was not introduced properly with clear role clarification." Policy Maker*

"*Lack of periodic orientation and mentorship to enable health workers to address challenges that arise on a day-to-day operation. Lack of District and facility operational plans that include for example targets for stable clients down referred to CCMDD program and non-inclusion of achievement of these targets to Employee Performance Management and Development (EPMDS)." Deputy Director, Primary Health Care*

"*The updating of tier for all six repeats as being collected in the first month, which sometimes does not paint a true picture for medicine collection of a client misses some parcel collections." Policy Maker*

"*CCMDD program implementation activities were not incorporated into job descriptions and performance agreements. It is thus viewed as an imposed program." Deputy Manager, Clinical Specialist Team*

"*Poor role clarification blurs the distinction of who does what, when and how thus contributing to non-performance." Frontline Managers and Clinicians*

"*CCMDD program implementation activities have not been institutionalized in job descriptions; We were not oriented on how CCMDD program fits into our daily duties." Frontline Managers and Clinicians*

Thus, at the lower levels, CCMDD program is perceived as a poorly implemented program that was ill-defined and imposed without any role clarification or possibly consultations to clarify on how the program fits into the everyday duties of the staff. These factors, together with supply chain problems associated with information exchange, makes it impossible to monitor system performance. However, the same group seems to hold that if issues such as role clarification, more information on the program rolled out, and job description about CCMDD program activities institutionalized, the program can be better placed within the overall objectives of the NDoH.

"*Role clarification, inclusion into job descriptions, and performance agreements. The performance indicators incorporated into the routine institutional data management systems." Frontline Managers and Clinicians*

"*Monitoring systems incorporated in performance agreements and contracts for relevant stakeholders in the public and private sectors." Deputy Manager, Clinical Specialist Team*

Thus, while the perspectives of both groups concerning the program's compatibility with NDoH goals and objectives differ, they seem to all focus on the same operational problems that can best be addressed to improve both ownership and positionality of the program within the NDoH. Such solutions pointed out include facility operational plans, clear task and role definition, periodic orientation and mentorship of personnel, and institutionalization of the program objectives across sectors of the NDoH.

4.1.2. Organizational environment (structure, function, culture) and its impact on lack of program ownership

An analysis of the perspectives of stakeholders within the NDoH concerning the alignment of the CCMDD program to responsibilities of health personnel revealed diverse perceptions. There was a shared understanding that the program was viewed as additional work and responsibilities by operational staff. Operational staff perceived the program as increasing their workload, as the program was rolled out with no requisite recruitment of personnel, no additional equipment, and unsupported program implementation, and more importantly, they perceive the program as an imposed top-down approach. Additional work was reportedly manifest in administrative tasks such as paperwork and manual registration and delays

associated with parcel collections, tracking service providers, and record keeping. Implementation could be better if supported by requisite personnel, and equipment to improve the registration of patients and record maintenance.

"*The program is consistent with the work responsibilities of health personnel as they are responsible for ensuring that patients can access medication conveniently and timeously. Also, ensuring treatment compliance and adherence is a key responsibility of health personnel, and CCMDD program supports health personnel in fulfilling this responsibility" Chief Director, Public Health Specialist.*

"*The most unfortunate thing about this program is that it is seen as additional work by staff. However, the program actually relieves the facility from managing monthly treatment dispensing, which significantly reduces patient numbers per day. This benefit is lost in the reasoning that CCDMM is another additional responsibility" Chief Director, Public Health Specialist.*

"*Personnel do not have an insight into the program and view it as additional work burden" Policy Maker.*

The view that the CCMDD program comes with additional workload is perceived by senior executives in the NDoH as a misconception on the part of the lower-level managerial staff. This thus reflects the differences in the conceptions and perceptions concerning the outcomes and design of the program among the stakeholders at various levels involved with the program. There seems to be a justification for the fact that the program relieves the facility of patient frequency as a possible measure of the overall efficiency perceptions of the program. However, it seems the actual work administratively at the operational level was not backed by proper operational bases. For instance, staff, equipment, and job design, which seems to cement that perception by the operational staff.

"*If the program is well understood, it should not be seen as detractor because the decongestion of facilities allows ample time for the provision of quality care to each individual client. The program is not additional work, and should not be seen as" Clinical Manager, Nursing.*

"*CCMDD program promotes the decongestion of facilities, thus allowing focus on patients needing more attention" Frontline Managers and Clinicians.*

The lower-level stakeholders—NDoH staff and personnel—perceive the program as being entrenched with unaccounted increased workload and additional responsibilities even though the program does not necessarily detract from the operational trajectory of the NDoH. Additional responsibility includes recording and filing, query solving, and recording keeping with no additional personnel, equipment, and the implementation not conducted properly.

"*,… However, it also introduces an abundance of administrative tasks such as record keeping" Frontline Managers and Clinicians.*

"*The program encourages chronic medicine adherence, which supports the responsibilities of health personnel. However, the administration that it comes with takes up a lot of time and resources from health personnel" General Clinic Staff*

"*The burden is perceived as additional work burden because there is no additional personnel and equipment to support its implementation" Deputy Manager, Clinical Specialist Team.*

"*There is too much paperwork to do because of the manual registration" Frontline Managers and Clinicians."*

The absence of necessary considerations concerning the role of personnel, changes in work patterns, and requisite equipment and resources have engendered the perceptions concerning the program that prevails among the lower-level employees and managers in the NDoH. Provision of requisite materials, institutionalized tasks design, and description and equipment can be instrumental in changing the prevailing perceptions among staff and personnel, which are unfavourable to the performance of the program.

The positive contribution of the program in terms of health services dispensing seems clearly perceived among all the stakeholders in the dataset. The prominent perceived benefits being that CCMDD program has resulted in the provision of quality healthcare encourages chronic medication adherence partially attributed to the presence of community-based personnel in medicine dispensing and decongestion, improving service provision at medical centres. However, the perceived benefits are clear, although there are aspects that affect the institutional personnel and their context within the organization. For instance, increased work and responsibilities increased administrative tasks, not adequately supported implementation, especially its consequent impact on personnel performance, and the fact that the program is

perceived as imposed. It can thus be seen that potentially beneficial programs can be adversely affected by personal level issues as well as lack of planning, particularly poor consultations during program planning, design, and implementation phases. On a broader consideration of all the stakeholders in NDoH, the CCMDD program has been understood clearly as not detracting from the primary role of the NDoH in chronic medication dispensing and distribution. However, some issues will need to be redressed at both the individual level and at the organizational level. While the former has been pointed out, the latter include such issues as perceived organizational lack of accountability, contracting mechanisms with service providers, outsourcing, communication, and problems around arbitrary implementation.

"*Outsourcing of Dispensing and Distribution of medication and contracting of the private Dispensing and Distribution has contributed to a lack of accountability by NDoH personnel," Chief Director, Public Health Specialist.*

"*The program encourages chronic medicine adherence which supports the responsibilities of health personnel; nevertheless, the administration that it comes with takes up a lot of time and resources from health personnel" General Clinical Staff*

"*The program is perceived as an additional work burden because there is no additional personnel and equipment to support its implementation" Deputy Manager, Clinical Specialist Team.*

There is extra work because medicine parcels are not delivered on time, and it takes time to track with the Service Provider when the parcels will be delivered" Frontline Managers and Clinicians.

4.1.3. Organizational processes of knowledge sharing and their contribution to implementation problems

The initial problem mapping, as illustrated in figure 4.1, 4.1A and 4.1B indicated that among stakeholders involved with the CCMDD program, there were limitations concerning knowledge of the design, objectives, and propositions of the CCMDD program within the broader framework of health services delivery. As such, solutions were proposed as potentially stemming from given knowledge systems and consequent dissemination of knowledge.

The data analysis revealed various types of information, which stakeholders pointed to as important to program performance. Patients' clinical information records, disease control, medication type and information, knowledge of surrounding medicine collection sites, lists of available PUPs, nature of chronic disease medication, and management were highlighted as essential information points. They were viewed as important because they would enable patients to position themselves better with the overall objectives of the program. Such perspectives were prevalent among personnel in senior managerial positions in the health department, chief directors of public health, and human resources managers.

"*Patients clinical information in terms of disease control, type of medication" Chief Director, Public Health*

Other information problems also concern such issues as inclusion and exclusion lists and the associated criteria for inclusion and exclusion. Absence of this information could be a possible explanatory factor in the report that sometimes patients receive an SMS that medicine parcels have arrived only to find that they are not actually there when they visit the designated PUPs, or sometimes delivery to wrong PUPs

"*Information on rejected scripts and reasons thereof. How to deal with uncollected parcels and non-delivery of parcels" Frontline Managers and Clinicians.*

"*Information regarding which medicines are excluded from enrolment. Support from facilities concerning monitoring of service provider performance" Frontline Managers and Clinicians*

Compliance and adherence, CCMDD program` monitoring systems, comprehension of program objectives, information on real program benefits, dealing with challenges such as growing number of patients, quality of care, knowledge at completing prescription forms, knowledge on guidelines, staff periodic orientation and general mentorship, were seen to be knowledge solutions at both the individual and the organizational level for those involved at various stages with the CCMDD program. It was also noted that lack of information at the individual level, has been instrumental in the positioning of the CCMDD program in the dominant perceptions of the practitioners involved with medicine dispensing.

"*If staff understood the objectives of the program and were given information on the real benefits of the program,… Staff needs to know that CCMDD program is a good program that*

is needed by our Health Department, as it cannot cope with the growing numbers of patients that present at the facilities daily" Chief Director, Public Health Specialist.

"*General understanding of the program objectives, availability of standard operating procedures with exclusion lists, knowledge of surrounding collection sites" Human Resources Manager.*

Thus, it can be noticed that with practitioners at the individual level, most senior executives are concerned that lack of knowledge seems contributory to possible attitudes towards the CCMDD program. At the organization level, the seemingly need for standard operating procedures has a contributory factor to subordinate attitude, and the considerations around the program as an external institution and not institutionalized with the organization's operational policy and planning.

Furthermore, at the organizational level, knowledge problems such as information on effects of the program since its introduction (the difference the program has accomplished), standard operating procedures, knowledge of resource availability or unavailability, updated inclusion and exclusion lists and absence of manifest with client lists, feedback systems seem to be knowledge problems that have weakened governance of the program. It was noted by most respondents at administrative positions that organization-wide knowledge systems will require improvement if the program is to improve in terms of performance. Some aspects on knowledge issues are critical such as limited information in inclusion and exclusion lists, as well as the absence of manifests with client lists, limits any evaluation of the program concerning who has been targeted or not. Furthermore, without precise data on recipients, monitoring of changes in patient profile becomes challenging, explaining issues of information resource unavailability to use in planning, and possibly establishing guidelines. Lack of data management resources with the NDoH reportedly relying on external stakeholders for data, can reflect inefficient systems of data collection or poor networks between service providers and the contracting health department.

"*Knowledge on the guideline is sufficient in my opinion. What I can suggest is having regular periodic orientation of staff. Consistent monitoring of the program in and outside the facility for support" Policy Maker*

"*Lack of data management resources. The Department is dependent on service providers' data is a disadvantage" Deputy Manager, Clinical Specialist Staff*

"*We need continuous reorientation because this program is new" Frontline Managers and Clinicians.*

Thus, at the heart of information problems at the organization are issues of database management systems, employee orientation into the program, governance networks, absence of essential metrics, and statistics on program performance compounded with NDoH limited access to data on the program.

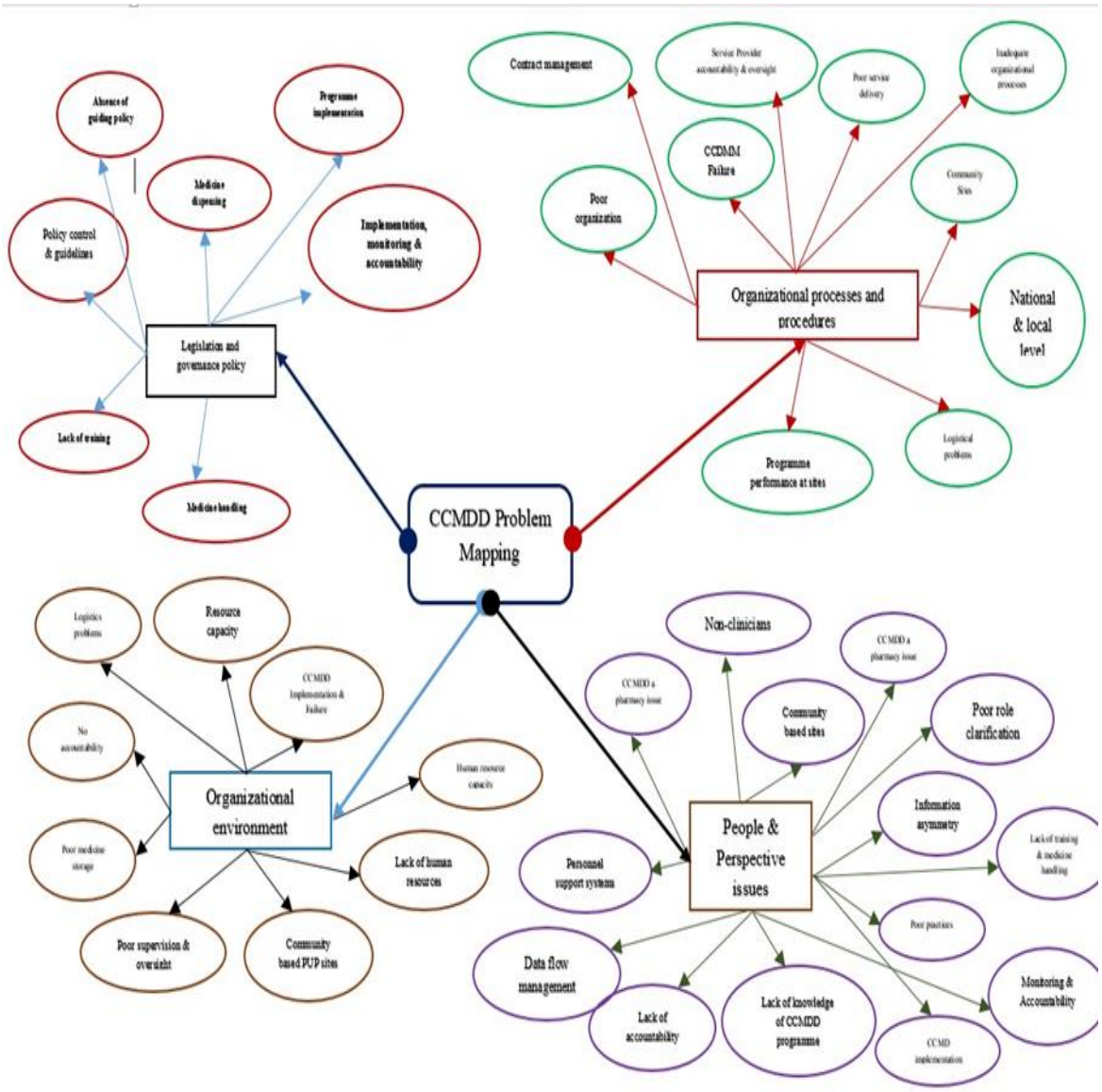

Figure 4.1 Problem mapping results – verification of observed apparent cause effect relationships with stakeholders in action research cycle one

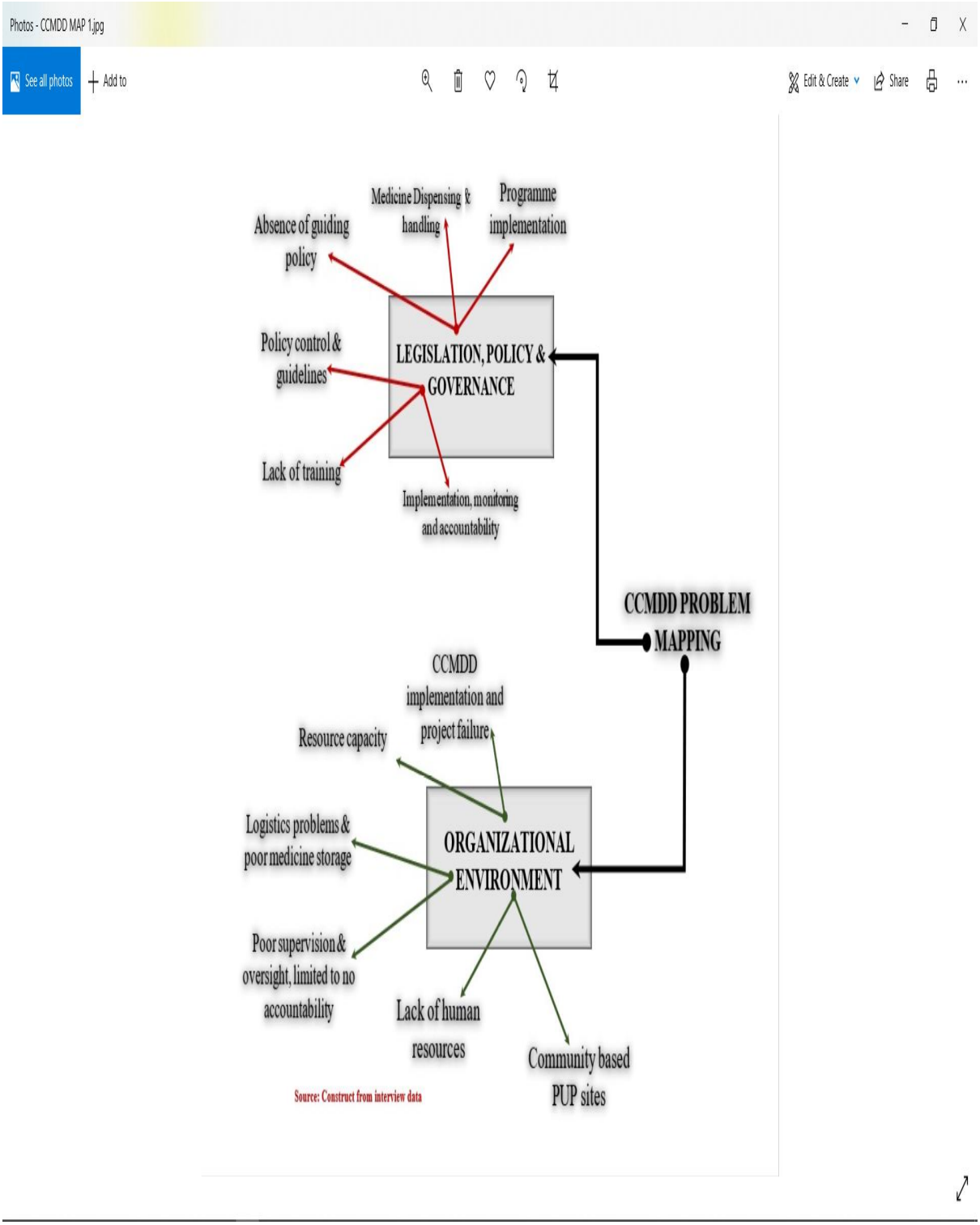

Figure 4.1A Problem mapping results for the domains of legislation, policy & guidance and organizational environment (Expanded view).

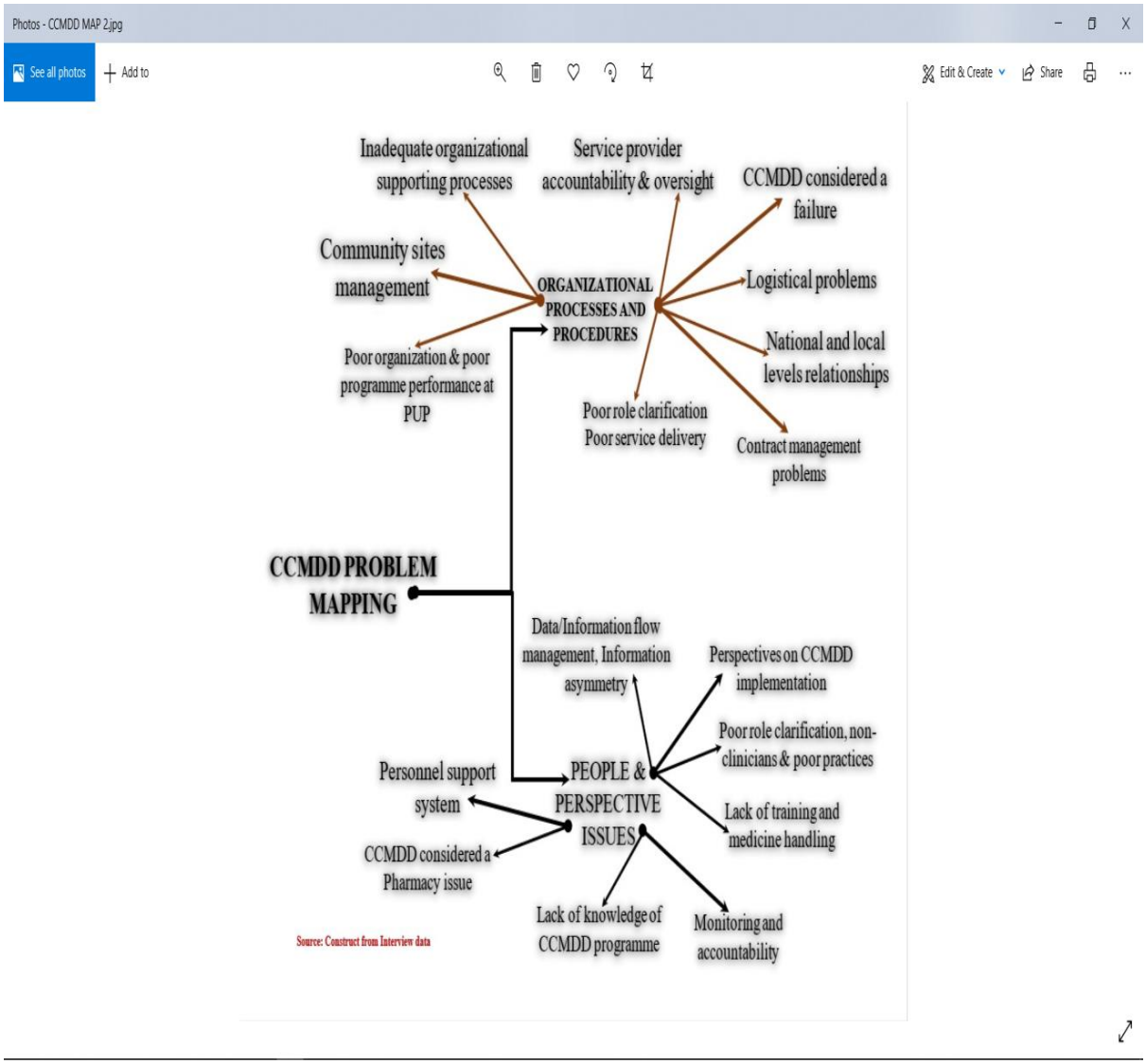

Figure 4.1B Problem mapping results for the domains of organizational processes & procedures and people and perspective issue (Expanded view

Figure 4.1 is an Nvivo produced visual mapping of the problems associated with the CCMDD program. It is based on the analysis of data from the multi-stakeholder engagement process that occurred during the action research cycle problematization process. The Nvivo thematic analysis is discussed in section 2.8. Figure 4.1A and 4.1B provide the larger font version of figure 4.1. The figures were explained in section 2.5.2.

4.1.4. Organizational processes of monitoring and oversight functions and their contribution to poor accountability

The governance structure, which forms the basis for building a system of monitoring and evaluation based on set performance, was reported to be largely non-existent by interviewed executives and practitioners. There was reported lack of SOP to specifically detail and regulate transversal interaction with some executives not actually being aware of the working platforms between the National and provincial departments in the management of private sector organizations who are contracted as service providers.

"An assumption is that between the province and national, there is perhaps an SOP that governs how public and private (service provider) work, including roles and responsibilities and accounting measures that are used to remunerate the service provider on work done" Deputy Director, Primary Health Care.

The attendant lack of such governance structures such as operating procedures and clear lines of accountability at different levels, with seemingly poor inter-departmental communication, contributing to service provider performance. Service providers were reported to not have been lodging the necessary documentation with the department, and other service providers were reportedly exhibiting poor performance but were still transacting with the NDoH, without any reassessment of the performance basis of the contract.

"Private sector, if supported to send manifests to the CCMDD program service provider with lists of all clients that collected with them for consolidation with referring facilities, I'm not sure if this is happening" Policy Maker.

"There are no institutionalized contract management systems yet for CCMDD program service providers … CCMDD program implementation was implemented without additional systems of governance" Policy Maker

"Not aware of any accountability measures because the service provider provides poor service continuously" Frontline Managers and Clinicians

Thus, the lack of governance structures, operational guidelines, and subsequent lack or relaxed accountability have contributed to poor performance. The situation seems to be worsened by

the absence of accountability measures to bring to account, poor-performing service providers. Monitoring is thus not conducted because there are no resources and proper governance structures.

“There are no evident accountability systems because even if medicine parcels are not delivered, the service provider continues with poor services” Frontline Managers and Clinicians

"Systems of monitoring, evaluation, and reporting. However, because of resource constraints, such systems are very poor, thus impacting negatively on program performance" Frontline Managers and Clinicians.

While explanations for seeming lack of delivery could be the result of differing inclusion and exclusion lists, which have been reported to not being updated as required, resulting in differing information concerning medicine distribution, the fact that there seems to be continuing inefficiencies related to governance and information exchange shows the constraints on accountability systems are many and include reported lack of staff. Organizational processes on CCMDD program are reportedly poor due to lack of staff to manage specific roles, poor task definition, and consequently poor delineation of accountability. Thus, the system fails to perform requisite monitoring and evaluation oversight functions.

4.2. Absence of guiding policy and associated problems

4.2.1. Executive authority and control

These are actions directed through policies or committees to ensure specific outcomes of the CCMDD program. Some policies mentioned in the study include the KwaZulu Natal pharmaceutical services policy, good pharmacy practice, which prescribes the prescriptions and storage and dispensing of medicines. These control measures are directed at coordinating public and private functions in the implementation and operations of the CCMDD program. At the time of conducting the interviews, it was pointed out that the impact of the coordination relied on NGOs who had the responsibility, how their roles were significantly weakened by limited authority on their part.

"*The control measures used to coordinate public and private functions involved in the CCMDD program implementation are: The KZN pharmaceutical services policy guidelines, good pharmacy practice which prescribes the prescription, storage and dispensing of medicines" Chief Director, Public Health Specialist*

"*Currently, this function falls upon NGOs… but this is with significant limitation due to limited authority" Chief Director, Public Health Specialist*

Policy directives to ensure effective program control were well alluded to by the majority of executives across diverse authority levels. However, the efficiency of such control measures could not be ascertained due to limitations in the arrangements of the CCMDD program. Thus, there were standard operating procedures, policies to ensure adherence to guidelines for dealing with patients with communicable chronic diseases, and those with non-communicable chronic diseases. However, the potency of such seemed to stem from the presence of effective social mobilization, political buy-in and NGOs, and a group of other stakeholders such as pharmaceutical retailers, providers of space (premises), and community caregivers. The coordinating role of all these diverse stakeholders cantered on NGO advocacy for the CCMDD program, which greatly influences how the control measures are implemented and enforced.

"*Difficult to spell out since there is not policy. However, there are standard operating procedures. Most of these SOPs are…adherence guidelines for HIV, TB, and NCDs. These guidelines and SOPs mostly guide Health Care workers on implementation of the program" Clinical Nursing Manager.*

"*Community caregivers have also been instrumental in mobilizing patients on chronic medication to form adherence clubs as part of CCMDD program. PEPFAR funded NGOs have also supported NDoH in coming up with IT systems and software like Synch to improve the functionality of CCMDD program, and some have even appointed Pharmacy Assistants to be responsible for PUPs" Chief Director, Public Health Specialist*

The control measures seem to be focused on the operations of the community care centres and PUPs, with defined guidelines and operating procedures. However, for patients, there seemed to be measures based on assumptions that the patients will be compliant and adherent to chronic medication treatment, thus not requiring any counselling.

"*Also, it is based on the premise that the patient is compliant and adherent to treatment and will not require any counselling to take the medication" Chief Director, Public Health Specialist*

The operational challenges and problems of the CCMDD program are heavily influenced by the lack of coordination among the various stakeholders, which results in non-adherence or implementation of control guidelines. There is no overarching policy, but a combination of guidelines dealing with various issues, thus no specific control measures.

"*There is not so much coordination between public and private functions. The public facility would send a client to a private facility and only see those six months later with the hope that they have been collecting meds monthly" Policy Maker*

"*There are no CCMDD program specific control measures in place because the National Health Initiative bill is not yet law" Policy Maker*

"*None at present. Community-based service coordination is dependent on NGO assistance" Deputy Manager, Clinical Specialist Team*

The functionality of control measures depends on the effectiveness of coordination among the parties to whom the measures are directed. There is reported lack of coordination, no defined control measures or policy, and authority resting on the NGOs assuming some form of coordination based on role and advocacy. This creates a situation where operators can set their own rules and result in poor service offerings. Furthermore, the design of the program and the use of non-clinical staff tends to increase the distance between patients on chronic conditions from primary healthcare facilities. They become contracting parties with the outposts of the department transacting with non-clinicians for medicine control, even though chronic conditions and medicine use may come with complex conditions requiring counselling and frequent assessment.

4.2.2. Resource allocation and its impact on implementation

Analysis of the data from interviews revealed three primary areas where resource support has been potent in affecting the program performance, lack of information resources, lack of governance structures, and lack of personnel resources. Lack of information resources

discussed above was observed in the absence of feedback systems, lack of data management resources, NDoH limited data access, and information systems. These were seen to be instrumental in limiting the effectiveness of any governance design, the establishment of guidelines and effective systems of accountability since it is practically impossible to set accountability guidelines over a program for which those in positions of power to set guidelines are crippled with information asymmetry or outdated information databases.

"*Feedback systems between the health facility, the central dispensing unit, service providers and the Pick-up Points" Chief Director, Public Health Specialist*

"*Data information systems are needed" Frontline Managers and Clinicians.*

Governance issues have surfaced in the interview data at multiple stages, such as social mobilization, political buy-in from various stakeholders, interest groups, community caregivers, Non-Governmental Organizations, and organizational staff at Public Health institutions. The various bodies involved with the program have exhibited diverse perspectives and hence, power dynamics concerning various aspects of how the program is operating and should be framed.

"*Social mobilization, advocacy on CCMDD program and political buy-in has ensured that various stakeholders and interested groups like pharmaceutical retailers have offered their premises for the provision of space for CCMDD program pick up points" Chief Director, Public Health Specialist*

"*The problem with CCMDD program is not so much a resource allocation but more poor ownership of the program by relevant cadre of staff at all levels but with greater emphasis at facility levels" Human Resources Manager*

Poor ownership reflects the fact that the program does not seem to have a concerted driving stakeholder's coalition, and this seems to be compounded by the absence of political buy-in, which the managerial respondents in the interviews pointed out as being much needed to move the CCMDD program forward. Within the health department, governance issues seem to stem from personnel-related factors, higher-level managerial process planning, and implementation and external network guidelines as well as the absence of platform infrastructures. Personnel related factors were evident in reports on limited human resources, challenges experienced by

healthcare workers, lack of involvement (demotivation), lack of personnel, the inadequate staff at facilities, and staff attrition. This invoked negative perceptions about program rollout, as those at the local level overlook the program objectives and focus on their personnel challenges in disposing duties.

"*The program is perceived as additional work burden because there is no additional personnel and equipment to support its implementation" Deputy Manager, Clinical Specialist Team*

"*There is a shortage of personnel, data information systems, and lack of monitoring of community-based sites" Frontline Managers and Clinicians.*

"*Clinics are already short-staffed. There is no connectivity for electronic communication with CCMDD program service provider. Manual systems add to the clinic workload burden" Frontline Managers and Clinicians*

"*The Department did not provide additional personnel and equipment to support the program. It is dependent on NGO support for coordination and personnel training" Frontline Managers and Clinicians*

That resource support and availability invoked coordination challenges as duties are spread down the task chain. While higher-level managerial staff focused on mobilization and political buy-in and lack of resources, lower-level management seems to focus on day-to-day operational challenges of poor resource allocation. Lower-level managers view personnel challenges as a result of poor staffing, which levels more responsibilities and duties as well as multiple work during manual data entry systems. This presents the case for a program that seems to have been implemented on the assumption that the objectives of the program have high marginal social benefits and hence did not require broader consultation and deliberation with lower-level managers at the operational level. This could explain the view among lower-level managers that the CCMDD program imposed additional work, and the program also being seen as imposed from above.

"*The program was imposed without clear role clarification" Frontline Managers and Clinicians*

Structural infrastructure resources were also seen as being critical support systems affecting program performance. These were evident in what management personnel pointed out as being

needed or absent, such as Information Technology Systems and software, premises to serve as PUPs, equipment, and adequate space for medicine parcels storage. Such infrastructures were reported as aiding or constraining the performance of the CCMDD program.

"*The Department expected available resources to accommodate CCMDD program implementation. But there is inadequate personnel to manage the extra burden" Frontline Managers and Clinicians*

"*The Department did not provide additional personnel and equipment to support the program. It depended on NGO support for coordination and personnel training" Frontline Managers and Clinicians*

"*…there is no additional personnel and equipment to support its implementation" Deputy Manager, Clinical Specialist*

"*There is no CCMDD program specific budget to accommodate the acquisition of new resources. Facilities are expected to utilize available resources" Deputy Manager, Clinical Specialist Team*

"*Clinics are already short-staffed. There is no connectivity for electronic communication with CCMDD program service provider. Manual systems add to the clinic workload burden" Frontline Managers and Clinicians*

Frontline managers are overly concerned with the challenges of operational issues such as increased work responsibilities with limited staff and no additional equipment. The salient issues seem to stem from the idea that CCMDD program implementation came with new tasks for which existing infrastructure was ill-equipped to accommodate.

Nevertheless, with this realization, the planners went ahead with designing and implementing the program. However, the embedded inefficiencies have consequently rested on Frontline Managers. Reliance on NGOs and other organizations for facilities and expertise to train the workforce presents another dynamic, particularly if NGOs directives are non-aligned with the Department's policy goals and objectives. Finally, the absence of allocated budget to accommodate the acquisition of new resources communicated negatively to the lower-level staff. There seemed to be no incorporation of the emergent dynamics and strategies to change the challenges. For instance, new equipment, additional personnel, and possibly training

facilities, which are indispensable to the program performance. As reiterated by one of the executives, the problems go deeper than resource allocation, embedded inefficiencies and seemingly absence of dynamic long-range planning have presented political dynamics and competition among the various stakeholders

"*The service provider that the non-clinicians at community - based distribution sites have the contract with is supposed to be giving support; however, these sites end up looking for support from mother hospitals/referring facilities whenever there are challenges. There seems to be a lack of support in this regard" Policy Maker*

"*The problem with CCMDD program is not so much a resource allocation but more poor ownership of the program by the relevant cadre of staff at all levels but with great emphasis at facility levels" Human Resources Manager*

Thus, while resources support at the personnel, governance, and structural level are essential, coordination among the various departments and organizations will position resource support. Coordination requires social capital and human resource support systems; which resources seem to be at the heart of performance problems with the CCMDD program.

4.2.3. Systems for ensuring accountability and their influence on program performance

The initial findings and problem mapping highlighted the role of problems with transversal accountability issues and their effect on the performance of the CCMDD program. Reports alluded to the absence or ineffective accountability systems, which resulted in poor performance or non-performance among the various stakeholders not being assessed, evaluated, or corrected and, hence, are continuing. The interview data analysis revealed a range of accountability problems and their potential sources both within the NDoH and the external stakeholders involved with the CCMDD program. Concerns raised in the data revolved around accountability mechanisms, monitoring, and evaluation systems, monitoring tools, manual versus automatic systems, patient tracking systems, and collection and tracing of defaulters. Transversal accountability was reported to be profoundly affected by data asymmetry with the NDoH relying on NGOs and Service Providers for essential data. The NDoH does not have

effective accountability mechanisms with contractors for the CCMDD program, as well as monitoring and evaluation systems and inefficient data capturing facilities.

"*Traversal accountability for CCMDD program is largely determined by a good monitoring and evaluation system in terms of: monitoring tools like patient registers for CCMDD program whether paper-based or electronic, effective and efficient patient tracking systems for collection and tracing of defaulters, feedback systems between the Health facility, the Central dispensing unit and pick up point and last but not least regular reporting on performance at all levels" Chief Director, Public Health Specialist.*

The CCMDD program, as pointed out earlier in the analysis of perceptions about the program and resource support, with lower-level personnel indicating problems of poor monitoring systems, lack of automated administrative systems, and reliance on extensive paper-based manual systems which increase administrative work and complexity. Thus, while senior executives have a conception of the bases of effective transversal accountability, there is no underlying infrastructure support to enable effective accountability systems.

"*The program is perceived as additional work burden because there is no additional personnel and equipment to support its implementation" Deputy Manager, Clinical Specialist Team.*

"*Nothing, there is generally poor insight on the program from managers to the extent that most managers seem oblivious to the depth and implications of problems that face the program. This is more probably due to lack of proper monitoring and evaluation" Chief Director, Public Health Specialist.*

"*Although there are policies for monitoring, the oversight function is poor because of resource constraints" Frontline Managers and Clinicians.*

Other issues affecting transversal accountability are related to interpersonal dynamics among stakeholders such as poor insight on the program, the fact that managers are oblivious to the program, and, therefore, poorly positioned to comprehend the depth and implication of problems as well as lack of proper monitoring and evaluation. At the organizational level, issues of policy, operating procedures, and guidelines and assumptions on the comprehensiveness of policies and guidelines. The data themes focus on factors such as

policies, stakeholders such as district program managers, facility managers, and healthcare workers, standard operating procedures, monitoring systems, and contractual obligations.

4.3. Contract management in community-based healthcare provision and problems

4.3.1. Contract management executive authority and control

Transversal oversight concerns overarching responsibility for the management of all stakeholders within a system or along a supply chain, in this case, the department of health, NGOs, pharmaceutical retailers and vendors, community - based organizations, and the patients involved with the CCMDD program. Concerning the CCMDD program, transversal oversight is required for health facilities, district and provincial pharmaceutical management services, and Ward Based Outreach Teams responsible for training and technical support for non-clinicians. Coordination among these requires effective transversal oversight authority.

"*Generally, its patient medicine parcel delivery. However, even when there might be poor performance, there is no real monitoring by facilities. Non-delivery would only trigger a call to the service provider. The NDoH relies entirely on the service provider to report such incidents. This defeats the purpose when there is no collateral data being collected by facilities to this effect as currently the case" Chief Director, Public Health Specialist*

Among senior executives in the NDoH, there was general concern over the need for transversal oversight, as the absence of such oversight has entrenched poor performance, ensured inefficient data and information sharing hence inadequate monitoring mechanisms. Problems with delivery only trigger a call to the service provider who happens to have more information than the department, which depends on service provider incident reporting. The prevailing arrangements at the time of the interviews were unsustainable in improving program performance as the department lacked oversight due to poor data/information access and the absence of transversal oversight over the multiple stakeholders influencing the CCMDD program.

4.3.2. Organizational processes and procedures for contract management and their influence on program performance

The absence of effective control measures was further highlighted by propositions for solutions in three diverse areas, among them improving systems design and system processes. Among these systems process solutions were suggestions for performance reporting and information collection for the PUPs, health facilities, the districts, and the provincial level. At the time of the interviews, there were no known systems among policymakers for information coordination among the stakeholders involved with the program.

"*Regular reporting on performance levels for the Pickup Points, health facility, district and provincial level" Chief Director, Public Health Specialist.*

"*There are no systems currently that I know of" Policy Maker*

"*There are no institutionalized contract management systems yet for CCMDD service providers" Policy Maker*

"*Contract Management is centralized at the national level" Deputy Manager, Clinical Specialist Team*

"*Contract management is centralized at the national level. However, contract management systems are poor, especially during the contract transition period" Policy Maker.*

This partly explains some findings, such as different schedules of patients' exclusion and inclusion lists. Lists on Service Providers may change before departmental lists are updated, with the latter department also making use of manual systems of reporting, which require time. This has contributed to high inefficiency and space constraints. For instance, human resource capacity and equipment are current inefficiencies embedded in the CCMDD program. There are also no institutionalized contract management systems for service providers with contract management centralized at the national government level. This means that there is no local direct access to the stipulations concerning service provision with which to set local control measures as bases for accountability.

4.4. Lack of human resource capacity and associated problems

4.4.1. Human resource executive authority and control

A case for the constrained role of human resources in streamlining the performance of the CCMDD program was seen in the designing for training non-clinicians who dispense medicines at the community-based sites. Non-clinicians are responsible for medicine dispensing at the various community-based sites and which operate as satellites for health facilities. Patients are referred to those centres from health facilities for the collection of medicines according to prescriptions established at primary health facilities. Training and technical support are required for non-clinicians dealing with patients and addressing technicalities. Concerns in the study did not directly focus on the nature of the training, neither the outcomes of the training, but the focus was directed at the source(s) of the training and support. Since community-based sites were satellites of primary health care facilities, the pharmacists at primary health care facilities are responsible for technical support to non-clinical sites, while district-level pharmacists are responsible for the provision of oversight supervision of the community-based sites. Thus, frontline managers, pharmacists, and clinicians implemented the CCMDD program using the existing personnel and infrastructures, hence the case for additional and non-institutionalized duties.

"*Community-based sites are established from a health facility as patients will be down referred from a health facility to a community site. Therefore, the pharmacists of that health facility are responsible for technical support to non-clinical sites. Besides, the district pharmacists play a crucial role in providing oversight supervision of the community-based sites" Chief Director, Public Health Specialist.*

NGOs play a crucial role in providing training and technical support inter-alia departmental structures of the health department. However, it was raised in the interviews that the health department lacks resources and funding that it practically relies on the resources and skills of the NGOs. Such NGOs assess the sites for suitability to deliver services prior to certification to operate, and according to directors at the health department, monitoring of the program thereafter seems unclear.

"*Health Systems Trust as provincial CCMDD program support partner together with District Pharmacists are meant to assess these sites for suitability to deliver service prior to being*

certified to operate. Monitoring of these services thereafter seems unclear" Chief Director, Public Health Specialist

The way service disbursement at the community-based sites is monitored was not clear to executives at the health department at the time of the survey. This absence of information on operations may stem from a number of factors, including the absence of dedicated human resources within the health department assigned to handle the CCMDD program, as well as insufficient information exchange. Community caregivers have to secure training, which is through the Ward Based Outreach Teams (WBOTs), which are expensive for community-level programs hence rely on NGO funding and resources. These, however, ensure that non-clinicians receive training on all programs for which services are delivered in the community. Such Ward Based Outreach Teams are also responsible for support. However, these are composed of members from health facilities designed to empower non-clinicians on community programs. The high resource demands of such programs mean that they are done infrequently, mostly at the induction of the program.

"*The Ward Based Outreach Teams are expensive for community-level services. This includes ensuring that cadres in the community are trained on all programs for which services are delivered in the community. Their supportive supervision is also their responsibility" Chief Director, Public Health Specialist*

"*The Ward Based Outreach Teams are responsible for community-level services. This includes ensuring that cadres in the community are trained on all programs for which services are delivered in the community. Their supportive supervision is also their responsibility. WBOTs support should come to facilities to empower them on programs in the community" Deputy Director, Primary Health Care.*

"*The non-clinicians receive training at the beginning of the contract" Policy Maker*

"*The Department is dependent on NGO support for community site monitoring and in-service training" Policy Maker*

NGO personnel give non-clinicians in-service training" Deputy Manager, Clinical Specialist Team

Thus, NGOs are responsible for training and support for the community-based centers. The absence of CCMDD program human resources in the NDoH means that information flow on training and support can be very limited, thus limiting the influence of the department on the outcomes of training and support of non-clinicians. The department is reported to depend on resources from these NGOs, thus effectively reducing the influence of the department in the training of the non-clinicians, if any.

4.4.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation

The CCMDD program was rolled out without any specific human resources management switching to provide specific HR support. The roles of existing operational managers and executives were extended without human resources recruitment or design of a specific human resources entity to design strategic interventions financial (such as recruiting, and development) or non-financial (oversight and procedural arrangements). This role was thus delegated on a limited basis to Operational managers who only provide training through the facilitation of external NGOs, who facilitate and provide resources to conduct such training programs, which were reported to have been externally assigned due to lack of financial resources in the NDoH. This means there is human resources technical support for the CCMDD program, neither is there any control over human resources at the CCMDD program sites with the NGOs only conducting training for the non-clinicians at the commencement of their contracts, with no additional reviews or training being reported among participants in the study.

"The department is dependent on NGO support for community site monitoring and in-service training … the non-clinical personnel obtain training at the beginning of the contract" Policy Maker

"NGO personnel give non-clinical personnel in-service training" Deputy Manager, Clinical Specialist Team

In the planning of the CCMDD program, there was no integrated planning and risk management due to funding and resource constraints, and the role of the human resources department was entirely related to tasks being spread across the existing departments and other tasks being externally assigned. Furthermore, the understanding was that core specialist

expertise will still reside within the respective primary departments with low-level tasks of a non-clinical nature being assigned to non-clinical personnel who do not require any clinical expertise. Human resources would thus focus on employees in the NDoH, and NGOs would focus on non-clinicians. The arrangement thus means that there is not continual internalized planning for requisite human resources specific to the CCMDD program; no human resource planning or strategy at such an arrangement was not seen as necessary. Moreover, the NDoH was at the time understaffed and simply focused on existing staff and did not bring new personnel into the department for the CCMDD program. Thus, in the interview data, there was no defined role discussed on any financial or non-financial strategies that human resources managers assumed to improve the outcomes of the program, primary because there was no human resources management team assigned internally to manage the CCMDD program personnel requirements.

4.4.3. Comprehensive, flexible, health workforce policy and the practice of non-clinicians at community sites

Community-based sites recruited as outreach pick up points and designed to reduce congestion at primary medical sites are manned or operated by non-clinical personnel, which house the medicine parcels, and dispense the medicine parcels to communities they serve. Inefficiencies, however, were reported to have surfaced as non-clinical personnel was not aware of good practices in storage and housing of in transit medicine parcels. Such observations among managerial personnel brought about questions regarding the practices non-clinical staff and how the NDoH incorporates such staff for medical parcel dispensing at various sites. Important aspects from the data included a focus on the practices and specific guidelines such as good pharmacy practice guidelines, correct storage and distribution, prescribed monitoring, and reporting systems. These are designed to equip non-clinical staff with expertise in dealing with communities they serve as well as observing good pharmacy guidelines, storage as well as monitoring changes in the program.

"*Their practice is guided by good pharmacy practice guidelines which prescribe the correct storage and distribution of pharmaceuticals and the prescribed monitoring and reporting systems for CCMDD program" Chief Director, Public Health Specialist.*

"*There are stated operating procedures that are meant to guide individuals in these sites with support from both the Service Provider and the supporting NGO" Chief Director, Public Health Specialist*

Interviews conducted with senior executives show that there are documented policies in place which the non-clinical staff has to adhere to in their operations and meant to guide them. However, support systems seem to be stemming from external stakeholders that are Service Providers and NGOs. The role of the NDoH seems to be passive/silent. In contrast, the stakeholders responsible are under-capacitated or not providing enough oversight over the training of non-clinical staff at the community-based units. At the departmental level (i.e., the NDoH), no human resources specific to CCMDD program have been deployed to oversee practices of non-clinical staff at PUPs. Lower-level executives also highlighted the fact that there were available guidelines, standard operating procedures, and support from clinicians if such mechanisms are being followed or at least being operational.

"*No human resources guideline specific to CCMDD program" Human Resources Manager*

"*The available guidelines, Standard Operating Procedures and support from the clinicians, at least if this is happening" Clinical Manager, Nursing*

"*The contracts signed at the beginning of the relationship with the service providers guide the dealings of the site" Frontline Managers and Clinicians*

Thus, the responsibility of overseeing the practices of non-clinical staff at the community-based sites has been directly the assigned responsibility of the service providers while the NDoH does so indirectly. From this arrangement, however, there are two connected problems that were reported. Firstly, although policies concerning practices are available, they seem to be more focused on generally accepted practices for pharmacy and medical personnel. There does not seem to be specific guidelines that focus on the practices of non-clinical personnel. Secondly, there are no specific medicine issuing guidelines for such community-based personnel.

"*There are no specific guidelines for community-based medicine issuers" Policy Maker*

"*There are no specific medicine issuing guidelines for community-based personnel" Deputy Manager, Clinical Specialist Team*

Thus, there seem to be contractual arrangements between the health department and service providers and the mediating role of NGOs as far as practice guidelines are concerned, leaving their implementation to the service providers. Lower-level executives allude to this contractual arrangement while highlighting the absence of specific policies at the operational level, to guide specific practices for personnel with no clinical expertise. How this arrangement has been affecting the CCMDD program was highlighted when the rationale behind non-clinical staff at the community-based sites was assessed.

4.4.4. Flexible human resource recruitment, training, and deployment and the practice of non-clinicians at community sites

The use of non-clinical staff at the community based seems to be premised on the nature of their responsibilities as well as the part they fulfil in the supply chain of chronic medicine dispensing. The chronic medicines dispensed to patients at these sites are said to be pre-labelled with patient details, which means that all the non-clinicians are tasked to do is to match patient identification with specific packages as well as contacting the patients when the medicine parcels are available. The medicine is pre-dispensed; as a result, the work is basically low-level functions requiring non-clinical skills.

"*The rationale used is that the medication in CCMDD program sites comes already pre-dispensed, packaged, and labelled with the patient's details. All that the non-clinicians have to do is to issue out the parcel to the patient. This is a low-level function that does not require any clinical skills. Also, it is based on the premise that the patient is compliant and adherent to treatment and will not require any counselling know how to take medication" Chief Director, Public Health Specialist*

The arrangement works seamlessly if no problems occur at any point along the supply chain between the service providers, the CCMDD program community sites and the patient. However, problems such as wrong medicine prescriptions have been emergent, which might require the non-clinicians to verify whether using patient's information against received medical parcels, as the absence of these proofing mechanisms, can have detrimental outcomes. The assumption that patients are adherent and compliant to treatment and will not require any counselling on how to take medication is perfect as long as there are no possibilities, as stated above.

Other executives depicted a broader structural challenge as the rationale behind the use of non-clinicians at community-based sites, which are intra-departments and matched by inadequate inter-organizational planning problems. These include integrated planning, risk management, and general planning limitations, and limited cost-benefit analysis, which limited the scope for comprehensive design in monitoring programs and assigning clinicians at those sites. Moreover, lack of funding and resource constraints influenced the option for non-clinicians at the community-based centres, while the primary design being to limit the duties of such staff to those roles not requiring any clinical expertise. However, it was also alluded that the program is still in its infancy, and there might be more scope for operational improvement, with better access to resources.

"*As far as human resources, no integrated planning and risk management, planning shortcomings and funding and resource constraints. The program was just introduced without a proper cost-benefit analysis done. The non-clinicians do not require clinical expertise, and there are resource constraints" Human Resources Manager*

"*… improving retention in care and longevity of these clients in countries with limited resources to utilize expensive clinicians when non-clinicians could do the work. The staff shortages in facilities was another reason for the use of non-clinicians" Human Resources Manager*

While there were broader intra-departmental limitations and planning shortcomings, the dominant premises for the use of non-clinicians at the community-based sites seem to have been influenced mostly by lack of resources and funding, as well as by considerations that dispensing prepacked and pre-prescribed medicines did not require any clinical expertise. However, within any field, trained practitioners will interpret some emerging behaviors among patients differently or make observations different from those not trained. As a result, the failure of a patient to collect medicine can be understood differently by those with clinical expertise as against those who do not. Moreover, the use of CCMDD program centres means patients cannot interact with clinical staff who might need to provide continual checks, assumptions of compliance and adherence to medication on the part of the patient might not be sufficient.

"*Community caregivers have also been instrumental in mobilizing patients on chronic medication to form adherence clubs as part of CCMDD program" Chief Director, Public Health Specialist*

"*The service providers that the non-clinicians at the community-based organizations have contracts with are supposed to be giving support. However, these sites end up looking for support from mother hospitals/referring facilities whenever there are challenges. There seems to be a lack of support in this regard" Policy Maker*

"*It is a cost-containment strategy because of limited funds" Policy Maker*"

Lack of financial resources to attain additional clinical personnel to work at community level sites" Deputy Manager, Clinical Specialist Team

4.5. Summary of findings and evaluation

The chapter's aimed to indicate research findings, as well as evaluations thereof, has been attained as illustrated in Table 4.1. It has indicated the initial findings based on apparent observable patterns in the cause-effect relationships and the stakeholder perceptions of the CCMDD program problem and how they were attained. Furthermore, it has detailed the evaluation of initial findings by comparing how practice level issues (column D) with those provided within the literature from comparable workplace-based problems (column C) for each of the respective utilized methods. Also, the chapter has detailed secondary empirical findings regarding apparent patterns and common themes of the CCMDD program problem (Rows numbered 4.1 to 4.4) in alignment with the section titles and subtitles. Additionally, it has detailed the major empirical findings from data (column A) and literature support evidence on observed cause and effect relations (column C) as well as illustrations of the analysis and evaluation thereof. Overall, the findings and evaluation have yielded a higher comprehension of the research problem, as illustrated in table 4.1.

Table 4. 1 Overview of key findings and links with literature

A. Empirical study findings	B. Guiding questions	C. Literature support	D. Issues
4. Findings			
4.1. Chapter Section: Perspective issues and associated problems			
4.1.1. Belief systems and their influence on implementation problems			

It emerged that personnel have poor insight into CCMDD program benefits and consequences of its failure to the overall organizational decongestion and chronic management strategies. The public health specialist said: "*…there is generally poor insight on the program from managers to the extent that most managers seem oblivious to the depth and implication of problems that face the program*…"	What influences the perspectives of personnel with regards to CCMDD program implementation?	United Nations (2012); Van Olmen (2012)	Poor insight on the program benefits and consequences of its failure
The view that CCMDD program is a pharmacy function appeared to be a key limiting factor for interdisciplinary implementation		Mitchell et al. (2016); Magadzire et al. (2017)	CCMDD program is viewed as a pharmacy program
The prevailing perception of CCMDD program as additional work burden was reported as a major barrier to implementation. As stated by the policy maker: ' "*Personnel do not have an insight into the program and view it as additional work burden*"			CCMDD program perceived as additional work burden
4.1.2.Organizational environment (structure, function, culture) and its impact on lack of program ownership			
The DOH hierarchical system and single work units culture perceived to limit CCMDD program ownership relevant multidisciplinary cadre of personnel. The Human resource manager stated: "*The problem with CCMDD program is not so much a resource allocation but*	How is the program consistent with or detracting from the work responsibilities	Magadzire et al. (2017); De Schepper, Dooms & Haezendonck, 2014	Poor program ownership by relevant cadre of personnel at all levels

more poor ownership of the program by relevant cadre of staff at all levels but with great emphasis at facility levels"	of health personnel?		
4.1.3. Organizational processes of monitoring and oversight functions and their contribution to poor accountability			
Lack of institutionalized monitoring and oversight systems for CCMDD program implementation perceived as impediments in ensuring accountability. For instance, non-inclusion in individual duty lists, job descriptions, and performance agreements. One pharmacy manager said: *"CCMDD program is viewed as an imposed program because it is not included in job descriptions and daily duty lists. Its implementation was arbitrary."*	What could be done to make CCMDD program more compatible with health service provision?	Magadzire et al. (2017); De Schepper, Dooms & Haezendonck (2014)	Role clarification, monitoring, and oversight to emphasize accountability
4.1.4. Organizational processes of knowledge sharing and their contribution to implementation problems			
The prevailing perception appeared to be that personnel requires ongoing education regarding CMDD implementation criteria. For instance, medicine formulary and patient eligibility criteria. The Human resource manager stated: "*The knowledge required is a general understanding of the program objectives; availability of Standard Operating Procedures, exclusion lists, and knowledge of surrounding collection sites."*	What knowledge would make it easier for personnel to enrol patients to CCMDD program?	Magadzire et al. (2017); Magadzire, Marchal & Ward (2015)	Implementation of knowledge. For instance, enrolment legibility criteria, and CCMDD program medicine lists

4.2. Absence of guiding policy and associated problems			
4.2.1. Executive authority and control			
Lack of National Department of Health (DOH) policy for community-based chronic medicine distribution reported to have contributed to poor implementation coordination and control. The Clinical Nursing Manager stated: *"It is difficult to spell out what the control measures are since there is no policy."*	What control measures are there to coordinate public and private sector functions involved in (CCMDD program) implementation?	United Nations (2012); Van Olmen (2012); Bigdeli et al. (2013)	Limited CCMDD program coordination authority
DOH reliance on Non-governmental (NGO) personnel for program guidance, coordination, and oversight reportedly facilitated poor control and oversight. The policymaker stated: *"CCMDD program implementation is was implemented without additional systems of governance."*		Musila & Mueni (2014)	Dependence NGO) personnel for program guidance and oversight
4.2.2. Optimal resource allocation and its impact on implementation			
Inadequate resource allocation reported as a barrier to successful implementation. For instance, DOH dependency on community infrastructure, NGO personnel, and service provider information technology. For instance, the utilization of churches and community halls. As stated by the Human Resource Manager: *"Resource constraints included lack of human resources, data capturers, staff to handout medicines, and infrastructures."*	What kinds of resource support or lack thereof have contributed to CCMDD program outcomes?	Magadzire, Marchal & Ward (2016); Magadzire, Marchal & Ward (2015)	Limited resource support
4.2.3. Systems for ensuring accountability and their influence on program performance			

Lack of program oversight and inbuilt systems of ensuring accountability reported to have contributed to poor accountability. For instance, the absence of disciplinary measures for non-performance. As the public health specialist stated: *"There is nothing to hold personnel accountable… probably due to lack of proper monitoring and evaluation systems."*	What determines transversal accountability for CCMDD program implementation?	Magadzire et al. (2017); Musila & Mueni (2014)	Poor systems for CCMDD program oversight failure consequential management
4.3. Contract management in community-based healthcare provision and associated problems			
4.3.1. Contract management executive authority and control			
Poor executive control and systems for contract management reported as the key contributing factor, especially during the transition phase between the end of the last and beginning of the new Service Provider contract. According to the policymaker, "*Contract management is centralized at the national level. However, contract management systems are poor, especially during the contract transition period."*	What national control measures are there for contracted private actors?	United Nations (2012); Bigdeli et al. (2013); Van Olmen (2012)	Organizational contract management systems
4.3.2. Organizational processes and procedures for contract management and their influence on program performance			
Although centralized contracting processes were reported as a critical factor, poor organizational contract monitoring systems were reported to have facilitated the lack of Service Provider accountability. The policymaker stated:	What organizational systems are there to ensure contracted	Magadzire et al. 2017); De Schepper, Dooms & Haezendonck (2014	Institutionalized systems for CCMDD program implementation

"There are no institutionalized contract management systems yet for CCMDD program Service providers."	service provider performance?		and accountability
4.4. Lack of human resource capacity and associated problems			
4.4.1. Human resource executive authority and control			
The absence of an integrated national human resource policy reported to be the key contributing factor to poor CCMDD program governance, regulation, and coordination. As the Human Resource (HR) manager stated: "*As far as HR is concerned, there was no integrated Planning and risk management for the CCMDD program."*	What transversal human resource management support system governs CCMDD program implementation?	United Nations (2012); Van Olmen (2012); Magadzire, Marchal & Ward (2016)	Human resource management
4.4.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation			
While employing non-clinicians saves costs and offers employment opportunities for communities, there appears to have been poor planning to balance cost saving to health quality maintenance at community sites. However, according to the Chief Director: "The rationale used is that the medication in CCMDD program sites comes already pre-dispensed packaged and labelled with the patients' details. All the non-clinicians have to do is to issue out the parcel to the patient. This is a low-level function, which does not require any clinical skill."	What is the rationale behind the utilization of non-clinicians at community-based medicine distribution sites?	Lonnroth et al. (2001); Kahabuka, Gunnar, Marie & Hinderaker (2012)	Perceptions of relatively lowered quality of health service at community sites

4.4.3. Comprehensive, flexible, health workforce policy and the practice of non-clinicians at community sites			
While it was reported that issuing of chronic medicines to stable chronic patients does not require clinician skills, it was discerned that lack of oversight support strategies contributed to poor practice by non-clinicians at community sites. According to the Public Health Specialist: *"There is no real monitoring by facilities."*	What guides the practice of non-clinicians at community-based sites?	Magadzire, Marchal & Ward (2016); Rasschaert F. et al. (2014)	Limited monitoring and evaluation oversight support for community sites
4.4.4. Flexible human resource recruitment, training, and deployment and the practice of non-clinicians at community sites			
NDOH training support for non-clinicians at community sites reported to be limited. The Deputy Manager for the clinical specialist team stated: *"There are no specific medicine issuing guidelines for community-based personnel."*	What kind of support is there, in terms of training or technical assistance, for non-clinical personnel at community sites?	Magadzire, Marchal & Ward (2016); Rasschaert F. et al. (2014)	Limited training support for non-clinicians at community sites
NDOH dependency on NGO personnel for training and oversight reported to have contributed to limited technical assistance at community sites. As the policymaker stated; *"The Department is dependent on NGO support for community site monitoring and in-service training."*		Magadzire, Marchal & Ward (2016)	

The process of data collection is ongoing and dynamic. However, from the current findings, analysis, and evaluation, there appears to be alignment between the initial problem view cause-effect and empirical findings- based cause-effect relations.

The next chapter focuses on action research cycles conducted in this thesis.

Chapter 5 – Discussion

5. Introduction

This chapter indicates how the research has answered the research question based on the empirical findings. Additionally, the findings are contextualized within the literature reviewed. The chapter commences with perspective issues in community-based healthcare provision and associated problems.

5.1. Perspective Issues in community-based healthcare provision and associated problems

5.1.1. Belief systems and their influence on CCMDD program implementation problems

Interview guiding question - What influences the perspectives of personnel with regards to CCMDD program implementation?

As could be seen, in the initial problem mapping (section 4.1.3. and figure 4.1), there was divergence in views regarding the effectiveness of the CCMDD program as a vehicle for increasing access to chronic medicine between the senior executives and frontline-operational managers While senior executives perceived the CCMDD program as effective in increasing access to medicine through community-based sites, frontline managers viewed CCMDD program as a pharmacy issue and its utilization of non-clinicians at community-based sites as problematic, thus contributing to its failure. Overall, these differences in perceptions contributed to a negative working organizational environment which potentiated failure of the program mainly due to lack of multi-disciplinary buy-in into the program.

Secondly, the divergence of perspectives was confirmed from interview data findings' analysis which indicated that personnel have poor insight into CCMDD program benefits and consequences of its failure to the overall organizational decongestion and chronic management strategies. Furthermore, findings indicated that the view that CCMDD program is a pharmacy function appeared to be a key limiting factor for interdisciplinary implementation. Moreover, it emerged from findings that the prevailing perception of CCMDD program as additional work burden was a major barrier to implementation. These findings are supported by literature.

Studies concur that there is a potential link between people perception issues and failure to increase access to medicine access through community-based distribution (van Olmen et al.,

2012; De Schepper, Dooms & Haezendonck, 2014; Jalali et al., 2017; Stankov et al;, 2017). The key reason is that people's perceptions are influenced by their experiences, values and belief systems which shape their behavior (Stankov et al., 2017). This suggests that the diversity in stakeholders' mental models may impact negatively on CCMDD program sustainability because it is dependent on teamwork but is being implemented in a hierarchical environment with an entrenched culture of separate work units. Furthermore, people's perceptions are dynamic irrespective of dealing with the same health intervention program, which contributes to conflict associated with program failure (Jalali et al., 2017). Even if stakeholder roles are clarified, people's perceptions remain varied because of diverse expectations regarding processes and outcomes (De Schepper, Dooms & Haezendonck, 2014). Such variance in people's perceptions contributes to the failure to increase access to medicine because people and their relationships are crucial actors in maintaining its sustainability (van Olmen et al., 2012). Moreover, diverse perspectives in multidisciplinary teams influences team effectiveness and sustainability which may result in negative outcomes (Mitchell et al., 2016)

Consequently, based on empirical findings of this research project, it may be argued that what influences the perspectives of personnel with regards to CCMDD program implementation are the divergent belief systems held by personnel at the various hierarchical organizational levels. Such divergence in belief systems has contributed to its failure as indicated by the literature support.

5.1.2. Organizational environment (structure, function, culture) and its impact on lack of program ownership

Interview guiding question - How is the program consistent with or detracting from the work responsibilities of health personnel?

Data analysis indicated a divergence in perspectives between senior and operational managers with respect to organizational environment (structure, function, culture) and its impact on lack of program ownership (4.1.2.). While senior managers view CCMDD program implementation as in alignment with organizational standard processes, operational managers perceive it as an imposed program. Moreover, personnel perceive it as an extension of their current job role, which does not fit within the scope of their existing responsibilities. Furthermore, key findings

revealed that the organization's hierarchical system and single work units culture contributed to the lack of program ownership by the relevant multidisciplinary cadre of personnel.

Existing literature supports the above findings (De Schepper, Dooms & Haezendonck, 2014; Kastanakis & Voyer, 2014; Mitchell et al., 2016; Berberoglu, 2018). According to Berberoglu (2018), the organizational climate has the potential to influence employee's commitment and organizational performance. The key reason is that culturally conditioned perception affects cognition (Kastanakis & Voyer, 2014). Furthermore, organizational climate and culture may influence the dynamism of people's cognitive processes (De Schepper, Dooms & Haezendonck, 2014). Such cognitive diversity in multidisciplinary teams contributes to different interpretations and meanings, which may result in negative outcomes (Mitchell et al., 2016).

Consequently, based on empirical findings of this research project, it may be argued that the CCMDD program is detracting from the work responsibilities of health personnel through contextualized top-down approaches and systems that are entrenched within the organizational environment. For instance, lack of consultation and role clarification. This suggests that the entrenched top-down hierarchical organizational culture characterized by single work units may have impacted on lack of program ownership. This is because while the CCMDD program requires integrated multidisciplinary implementation, it is being implemented within a hierarchical system. However, as indicated by literature support in the preceding section, organizational cultural conditioning has the potential to influence employee's commitment and organizational performance.

5.1.3. Organizational processes of knowledge sharing and their contribution to implementation problems.

Interview guiding question What knowledge would make it less problematic for personnel to enrol patients in CCMDD program?

The initial problem mapping (figure 4.1) indicated that among stakeholders involved with the CCMDD program, there were limitations concerning knowledge of the design and objectives of the CCMDD program within the broader framework of health services delivery. Knowledge problems were proposed as potentially stemming from poor knowledge sharing systems and consequent dissemination of knowledge. Furthermore, data analysis concurred with the initial

findings by indicating the various types of lack of information sharing, which stakeholders pointed to as critical to program performance (section 4.1.3). For instance, lack of information management systems, medicine formulary, benefits of the program, as well and governance.

This is concurred in the literature by Magadzire et al. (2017), who highlighted the problems centering around a public program being viewed as an additional work burden. Magadzire, Marchal & Ward (2015) on the other hand found that lack of knowledge sharing between clinicians and patients contributed to program failure.

Consequently, there is concurrence between empirical findings and literature that poor organizational processes of knowledge sharing have contributed to implementation problems.

5.1.4. Organizational processes of monitoring and oversight functions and their contribution to poor accountability

Interview guiding question What makes CCMDD program implementation incompatible with routine health system provision?

The initial problem mapping (figure 4.1) indicated that among stakeholders involved with the CCMDD program, there were limitations concerning knowledge of the design and objectives of the CCMDD program within the broader framework of health services delivery. Knowledge problems were proposed as potentially stemming from poor knowledge sharing systems and consequent dissemination of knowledge. Furthermore, data analysis concurred with the initial findings by indicating the various types of lack of information sharing, which stakeholders pointed to as critical to program performance (section 4.1.3). For instance, lack of information management systems, medicine formulary, benefits of the program, as well and governance.

This is concurred in the literature by Magadzire et al. (2017), who highlighted the problems centering around a public program being viewed as an additional work burden. Magadzire, Marchal & Ward (2015) on the other hand found that lack of knowledge sharing between clinicians and patients contributed to program failure.

Consequently, there is concurrence between empirical findings and literature that poor organizational processes of knowledge sharing have contributed to implementation problems.

5.2. Absence of guiding policy and associated problems

5.2.1. Executive authority and control

Interview guiding question What control measures are there to coordinate public and private sector functions involved in (CCMDD program) implementation.

As shown in section 4.2.1, key findings from the data analysis revealed a lack of the National Department of Health (NDoH) executive authority and control measures to coordinate public and private sector functions involved in (CCMDD program) implementation (4.2.1). Executive authority and control relate to control measures and actions that are directed through organizational policies committees and guidelines to ensure specific outcomes of the CCMDD program, for instance, oversight functions. Findings indicated that there are existing organizational control measures, such as the KwaZulu Natal Pharmaceutical Services policy, Good Pharmacy Practice principles, and chronic medicine adherence guidelines, that senior management perceive to be adequate to coordinate public and private sector functions involved in CCMDD program implementation (4.2.1). However, according to findings, said control measures are not effective because their implementation oversight is executed by the NGOs who have no authority to enforce their implementation (4.2.1). Such NDoH reliance on NGO personnel for CCMDD program coordination and oversight was found to be a crucial contributing factor to lack of executive control and associated problems (4.2.1).

Extant literature concurs that lack of executive authority and control measures to coordinate stakeholders involved in program implementation contributes to program failure (United Nations; 2012; Van Olmen, 2012; Bigdeli et al., 2013; Musila & Mueni, 2014; Magadzire et al., 2015; Magadzire et al., 2017). According to the United Nations (2012), lack of a governance policy is a crucial barrier to medicine access. This is because governance is crucial in ensuring the provision of sustainable medicine access (van Olmen et al., 2012; Bigdeli et al., 2013). Moreover, the lack of governance structures and poor oversight functions contribute to a lack of sustainability and program failure (Musila & Mueni, 2014). Furthermore, the absence of guiding policy to control and regulate all actors contributes to CCMDD program failure Magadzire et al., 2015; Magadzire et al., 2017).

Consequently, based on empirical findings and literature, it is evident that the existing control measures such as pharmacy policies and chronic medicine guidelines that are expected to coordinate public and private sector functions involved in CCMDD program implementation

are failing. This is because the oversight of their implementation is done by the NGOs who have no authority to enforce their implementation.

Therefore, the answer to the question (What control measures are there to coordinate public and private sector functions involved in (CCMDD program) implementation?) is that there are none that are specific to CCMDD program implementation. The control measures that senior management perceive as applicable have no impact because of lack of oversight of their implementation at community sites. Therefore, the NDOH reliance on non-implementable oversight may be viewed as tantamount to lack of control measures to coordinate public and private sector functions involved in (CCMDD program) implementation with consequential implementation failure.

5.2.2. Systems for ensuring accountability and their influence on program performance.

Interview guiding question What determines overall accountability for CCMDD program implementation for both the private and public sector stakeholders?

As shown in section 4.2.3, and illustrated in problem mapping figure 4.1 lack of systems for ensuring accountability negatively influence CCMDD program performance -for instance, lack of accountability from both the private and public sector stakeholders. Critical systems that are lacking include; absence of disciplinary measures for the contracted Service Provider's failure to deliver medicine parcels timeously at community sites as well as for organization personnel's failure to implement CCMDD program activities. Such findings are in alignment with those discussed in the preceding section 6.2 regarding the negative impact of the absence of guiding policy and associated problems such as executive authority and control.

According to extant literature findings, lack of systems for ensuring accountability has a negative influence on program performance (United Nations, 2012; Van Olmen, 2012; Bigdeli et al., 2013; Musila and Mueni, 2014; Magadzire et al., 2017). Lack of systems of accountability, such as governance policy and institutionalized standard operating procedures is a crucial barrier to sustainable medicine access (United Nations, 2012; Van Olmen, 2012). Bigdeli et al. (2013) on the other hand posits that failure to acknowledge systemic linkages of accountability involved in sustaining medicine access contributes to program failure.

Therefore, there is concurrence between empirical study findings and literature that lack of systems for ensuring accountability have a negative influence on CCMDD program performance.

5.3. Contract management in community-based healthcare provision and associated problems

5.3.1. Contract management executive authority and control

Interview guiding question What national control measures are there for contracted private actors?

Data analysis findings in section 4.3.1 showed that contracts between the NDoH and the Private sector service providers are centralized at the national level. However, there are no institutionalized contract management systems to control and monitor the CCMDD program service providers. Consequently, there is no local executive power to oversee compliance with contractual terms of performance and discipline service non-performance. Furthermore, the associated problem with such an arrangement included entrenched poor performance due to a lack of oversight over the multiple stakeholders influencing the CCMDD program. For instance, the CCMDD program Service Provider, NGOs, and community - based organizations.

Findings in extant literature agree that lack of contract management executive authority and control in community-based healthcare provision interventions is a contributing factor to failure (United Nations, 2012, Bigdeli et al., 2013; van Olmen, 2012).

Therefore, concerning CCMDD program implementation, it emerges from both study findings and literature that lack of contract management executive authority is a contributing factor to its failure.

5.3.2. Organizational processes and procedures for contract management and their influence on program performance

Interview guiding question - What organizational systems are there to ensure contracted service provider performance?

Interview data analysis findings detailed in chapter 4, section 4.3.2, established that there are no organizational processes and procedures for contract management. Furthermore, findings indicated that the absence of such organizational oversight has a negative influence on program performance. For instance, delivery of wrong medicine parcels or non-delivery of medicine parcels. This is alignment with the preceding discussions on section 6.3.1, which indicated the negative influence of centralized contract management on CCMDD program performance.

Authors concur that lack of organizational processes and procedures for contract management has a negative influence on program performance (De Schepper, Dooms & Haezendonck, 2014; Magadzire et al., 2017). Magadzire et al. (2017) found that the absence of micro-level contract governance contributes to implementation challenges due to lack of accountability. De Schepper, Dooms & Haezendonck (2014) found that in the absence of organizational contract management systems, the diverse stakeholder expectations regarding intervention processes and outcomes contributed to program failure.

Therefore, in the light of empirical study findings and literature support, it may be argued that lack of organizational processes and procedures for contract management has a negative influence on CCMDD program performance.

5.4. Lack of human resource capacity and associated problems

5.4.1. Human resource executive authority and control

Interview guiding question - What overall human resource management support system governs CCMDD program implementation?

Arising from the empirical study findings, it emerged that lack of human resource executive authority and control contributed to CCMDD program failure. Associated problems included a lack of human resource capacity to effectively implement and monitor the program performance. For instance, the Departmental dependence on NGO personnel for training,

registration, and oversight of community sites. This was detailed in chapter 4, section 4.4.1. Furthermore, findings revealed that the absence of an integrated national human resource policy as a key contributing factor to poor CCMDD program governance, regulation, and coordination.

There is literature support that points out that lack of human resource executive authority, control, and capacity contribute to poor program implementation and performance (United Nations, 2012; van Olmen, 2012; Magadzire et al., 2016). This is because human resource capital is underpinned by governance policy to facilitate regulation of involved stakeholders (United Nations, 2012). Furthermore, the lack of human resource capital contributes to the lack of sustainable medicine access (van Olmen, 2012). Furthermore, lack of optimal human resource allocation to manage program implementation is a crucial barrier to increasing chronic medicine access (Magadzire, Marchal & Ward, 2016).

It follows, therefore, that lack of human resource executive authority and control and the associated lack of human resource capacity and problems are contributing factors to CCMDD program failure. Both empirical findings and literature support this.

5.4.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation

Interview guiding question - What is the rationale behind the utilization of non-clinicians at community-based medicine distribution sites?

According to the findings from the analysis of the interview data, senior executives explained that since chronic medicines dispensed at the community-based sites are prepacked and labelled with the respective patient's details, the task of issuing medicine was not exclusively a clinician skills intensive task and could be cost-effectively undertaken by any non-clinician. This was detailed in chapter 4, section 4.4.2. So primarily, the rationale for the use of non-clinicians had to do with cost efficiency as the program rollout was affected by poor resource endowment as noted earlier with the NDoH relying on NGO provision for support, training, and disbursement of some services, even provision of necessary administrative IT systems. However, findings established that said rationale has negatively influenced implementation because non-clinicians were seen to fail at mediating when wrong prescriptions were delivered.

Furthermore, the utilization of non-clinicians appears to have distanced patients from primary health care providers with a calculated six-month gap. This is critical because if a patient is unaware of having received a parcel with the wrong medication parcel, such a patient will not discontinue use, with potential health risks or legal consequences. For instance, disease progression and consequential medico-legal expenses.

Extant literature findings posit that human resource practices and strategies that fail to balance financial and non-financial incentives have a negative influence on the implementation and outcomes of health care interventions (Abuosi, 2015; Eyles et al., 2015; Magadzire, Marchal & Ward, 2016; Gubela et al., 2017). According to Magadzire, Marchal & Ward (2016), the utilization of non-clinician who have no medicine storage skills at community sites is a contributing factor to CCMDD program failure. This is because of the predominant perception of low-quality services at non-clinician driven community sites (Gubela et al., 2017). Also, patients may not perceive access as more important than quality (Abuosi, 2015). Thus, although most people in rural areas of South Africa are affected by high poverty levels and cannot afford travel costs to clinics that are more often distant, people's perception of the quality-of-care preferences still influenced their behavior, thus contributing to community-based health care program failure.

Consequently, based on empirical findings and literature, it emerges that the lack of human resource practices and strategies that balance financial and non-financial incentives has negatively influenced CCMDD program implementation. For instance, although the rationale behind the utilization of non-clinicians at community-based medicine distribution sites may have been cost savings, perceptions of low-quality service at community sites have contributed to program failure.

5.4.3. Comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration, and deployment

Interview guiding question - What guides and supports the practice of non-clinicians at community-based sites?

Empirical study findings revealed that the absence of a comprehensive, flexible, health workforce policy to guide the practice of non-clinicians at community sites has a negative

influence on CCMDD program implementation. This was detailed in chapter 4, section 4.4.3. It was also highlighted in the preceding discussions in section 6.2. Furthermore, findings established that there are no specific guidelines for community-based CCMDD program medicine issuers. Moreover, the DoH relies on NGO and Service Provider personnel to train, guide, and oversee the practice of non-clinicians at community-based sites.

Study findings in literature posit that the absence of comprehensive, flexible, health workforce policy to guide the practice of non-clinicians at community-based sites may negatively influence CCMDD program implementation and performance (Rasschaert et al., 2014; Magadzire et al., 2016).

Such concurrence between literature and empirical findings gives merit to the argument that lack of guiding policy, training, and specific practice guidelines to support the practice non-clinician at community-sites has a negative influence on CCMDD program performance.

5.5. Chapter Summary

This chapter detailed the findings from the qualitative dataset analysis identified from both the initial problem mapping and the qualitative data analysis as contributing factors to the poor performance or failure of the CCMDD program (section 4.1.1 and figure 4.1). Such factors, being perception issues, absence of guiding policy, CCMDD program contract management and the lack of human resources capacity.

The synthesizing and integration of results was also detailed and placed in context with the review of literature previously discussed in chapter 3 with emphasis placed on pertinent points raised within the central theme of health services management (section 6.1 to 6.4). Furthermore, it detailed the integration phase which incorporated the results and findings of the qualitative data analysis with the literature review and focused on emerging patterns and relationships among key factors (section 6.1 to 6.4). Similarly, important findings were highlighted and then detailed in context of the research question stated in chapter one.

Table 6.1 provides a summary on how empirical findings answered the research question according to problem domains determinants and variables.

Table 5.1. Empirical findings-based answers to questions according to-problem domains, determinants, variables, and related stakeholders

Problem domain	**Interview guiding questions asked**	**Key Stakeholders**	**Problem determinants and variables**	**Empirical findings - based answers to research interview guiding questions asked**
Perspective issues	What influences the perspectives of personnel about CCMDD program implementation?	Frontline managers, clinicians and pharmacists	Belief systems	What influences the perspectives of personnel concerning CCMDD program implementation are the belief systems held by personnel at the various hierarchical organizational levels. Whilst senior managers believe that CCMDD program is functional, operational level managers view it as a failure
	How is the program detracting from the work responsibilities of health personnel?	Frontline managers, clinicians and pharmacists	Organizational environment	The CCMDD program is detracting from the work responsibilities of health personnel through contextualized top-down approaches and systems that are entrenched within the organizational environment. For instance, lack of consultation, and role clarification.
	What makes CCMDD program implementation incompatible with routine health system provision	Frontline managers, clinicians and pharmacists	Culture	What makes the CCMDD program implementation incompatible with routine health system provision is the organizational culture characterized by reliance on external organizations for training, data management and outsourcing of services. Outsourced services facilitated development of a culture of lack of accountability and lack of ownership of the program by personnel. This is in contract with routine health service provision which is characterized by job description, duty lists and systems of reporting of accountability
	What knowledge would make it less problematic for personnel to enrol patients to CCMDD program?	Frontline managers, clinicians and pharmacists	Education	Knowledge that would make it less problematic for personnel to enrol patients to CCMDD program includes education that clarifies program benefits and its alignment with departmental strategy of increasing access to medicine through the CCMDD program. For instance, education on standard operating procedures, in house training, patient's clinical information records, disease control medication type, knowledge of available medication collection sites (PUPs), and institutionalized management information systems and databases
Absence of organizational systems and procedures	What organizational processes and procedures govern CCMDD program implementation?	Policymakers	Governance and guidance for CCMDD program implementation	Control measures to coordinate and regulate public and private sector functions involved in CCMDD program implementation include organizational systems oversight. Findings indicated a lack of these systems. For instance, although the Service Provider was known to be performing poorly, there was no evidence of coordinated regulatory and executive control measures taken by the Department to correct it. Furthermore, even though NGOs were reportedly responsible for oversight functions and training at PuP sites, findings indicated that there was poor oversight and training. Nevertheless, there was no evidence of coordinated regulatory and executive control measures taken by the Department to correct it.
	What control measures are there to coordinate public and private sector functions involved in CCMDD program implementation?	Chief Director	Actor Coordination	
	What control measures are there to coordinate public and private sector functions involved in CCMDD program implementation?	Public Health Specialist	Functional regulation	

	What kinds of resource support or lack thereof have contributed to CCMDD program outcomes?	Public Health Specialist	Optimal allocation of available resources	The kind of resource support that has contributed to CCMDD program outcomes include lack of organizational systems to support its implementation. For instance, human resource capital, infrastructure for medicine storage and handling, administrative mechanisms, in-house training as well as oversight functions
	What determines overall accountability for CCMDD program implementation for both the private and public sector stakeholders?	Public Health Specialist	Accountability management systems.	What determines overall accountability for CCMDD program implementation for both the private and public sector stakeholders are the systems for ensuring accountability. Findings have indicated that lack of organizational systems and procedures for CCMDD program implementation contributed to its failure. For instance, lack of standard operating procedures.
CCMDD program Contract management	What national control measures are there for contracted private actors?	Policymakers	Governance policy to control and regulate service providers	The national control measures for contracted private actors are limited to contracting the Service Provider. Findings indicated that there are no localized control measures. This contributed to CCMDD program failure.
	What organizational systems are there to ensure contracted service provider performance?	Policymakers	Integrated systems to plan, organize, coordinate, and monitor involved actors	Organizational systems to ensure contracted service provider performance include integrated systems to plan, coordinate and monitor involved actors. Empirical research established the absence of institutionalized systems for CCMDD program implementation and accountability as key explanation for poor performance by primary service providers for the CCMDD program.
Lack of human resource capacity	What overall human resource management support system governs CCMDD program implementation?	Human resources managers	Human resource governance to regulate and coordinate all actors	The overall human resource management support system that governs CCMDD program implementation includes systems that support human resource capacity. Empirical findings indicated an absence of such systems.
Utilization of non-clinicians	What is the rationale behind the utilization of non-clinicians at community-based medicine distribution sites?	Human Resources Managers	Planning and organization of training, recruitment, remuneration, and deployment of non-clinicians	The rationale behind the utilization of non-clinicians at community-based medicine distribution sites appeared to be financial savings. However, findings indicated the lack of a flexible health policy that takes into consideration the cost benefit analysis in workforce deployment contributed to CCMDD program failure. For instance, although utilization of non-clinicians was regarded as a cost-saving measure, it was found to have contributed to program failure because of their lack of training in medicine handling
	What guides the practice of non-clinicians at community-based sites?	Human Resources Managers	Planning & organization of training, recruitment, remuneration and deployment of non-clinicians	What guides the practice of non-clinicians at community-based sites are policy guidelines and training for community-based medicine issuers. Findings indicated an absence of such In-service training from the Department
Lack of medicine storage skill	What kind of support is there, in terms of training or technical assistance, for non-clinical personnel who implement the CCMDD program at community sites?	Human Resources Managers	Human resource practices and strategies that balance financial and non-financial incentives	The kind of training support for non-clinical personnel who implement the CCMDD program at community sites was found to be NGO based and only at program commencement. However, it was found to be inadequate and unsustainable.

Chapter 6: Conclusions, Recommendations, and Reflection

6. Introduction

This chapter is highlighting the main contributions of this study. It also provides a brief account of the context of the CCMDD program itself, its design and attributes within the context of chronic medicine dispensing in eThekwini related to research question and objectives previously set out, with the theoretical account of the summary of findings based on all the influential factors observed in the study. The chapter then closes by providing recommendations and actions taken as a result of this research (6.4). Furthermore, the chapter indicates the research outcomes in the first, second and third person practices (6.5). This research is novel because it explores the underlying issues behind failure to provide access to medicines in contrast to previous research that focused on barriers only.

The CCMDD program has experienced failures in both implementation and meeting operational objectives of improving dispensing of chronic medicines as well increase patient enrollment for better improved primary healthcare. The failures were concluded from the study to be emanating from four key areas, of personnel perceptions about the CCMDD program (6.1.1, 5.6, 4.1.1), organizational processes and procedures (6.1.3, 5.6, 4.1.4), organizational environment and legislation (6.2, 5.6, 4.1.2x) and governance policy (6.2, 5.6, 4.2). The study found out that perceptions and organizational processes contributed directly to the poor performance and failures of the CCMDD program (6.2), particularly at program implementation stages (6.2). The study concluded that the underlying mechanisms were multiplicative and operated at multi-levels. Thus, the CCMDD program problem has the characteristics of a complex health care problem. Consequently, the study may contribute to establishing techniques for managing CCMDD program complex health care problems.

6.1. Perspective Issues in community-based healthcare provision and associated problems

6.1.1. Belief systems and their influence on CCMDD program implementation problems

As shown in section 4.1, 4.1.1 and illustrated in figure 4.1, empirical findings from both the initial problem mapping conducted in action research cycle one and interview data analysis

verified the initial literature-based observed apparent cause-effect relationships. There is a divergence in perspectives between the senior executives and frontline-operational managers regarding the effectiveness of the CCMDD program as a vehicle for increasing access to chronic medicine (4.1.1).

These findings are well in line with earlier research that concurs that diverse belief systems contribute to program implementation failure (Mumtaz et al., 2003; Ssengooba et al., 2007; de Savigny & Adam 2009; Sheikh et al. 2014). According to Ssengooba et al (2007) belief systems are underpinned by individual experiences, and values which impacts on their behaviour. Consequently, people can respond profoundly differently to the same new idea, policy, or intervention (de Savigny & Adam, 2009). Even if stakeholder roles are clarified, people's perceptions remain varied because of diverse expectations regarding processes and outcomes (ibid). Such variance in people's perceptions contributes to the failure to increase access to medicine because people and their relationships are crucial actors in maintaining its sustainability (van Olmen et al., 2012).

Consequently, based on the literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis as well as the integration of findings with literature, it may be concluded that diverse belief systems between senior and operational management have negatively impacted CCMDD program` implementation with consequent program failure.

6.1.2. Organizational environment (structure, function, culture) and its impact on lack of program ownership

As shown in section 4.1.2 and illustrated in figure 4.1, empirical findings from both the initial problem mapping conducted in action research cycle one and interview data analysis verified the initial literature-based observed apparent cause-effect relationships. This is exemplified by the empirical findings that indicate a divergence in perspectives between senior and operational managers concerning organizational environment (structure, function, and culture) and its contribution to lack of program ownership (4.1.2.). While senior managers view CCMDD program implementation as in alignment with organizational standard procedures and processes, operational managers perceive it as an imposed program.

This view is supported by earlier research that concurs that the organizational environment contributes to lack of program ownership with consequent program failure (De Schepper,

Dooms & Haezendonck, 2014; Kastanakis & Voyer, 2014; Mitchell et al., 2016; Berberoglu, 2018). According to Berberoglu (2018), the organizational climate has the potential to influence employee's commitment and organizational performance. The key reason is that culturally conditioned perception affects cognition (Kastanakis & Voyer, 2014). Furthermore, organizational climate and culture may influence the dynamism of people's cognitive processes (De Schepper, Dooms & Haezendonck, 2014). Such cognitive diversity in multidisciplinary teams contributes to different interpretations and meanings, which may result in negative outcomes (Mitchell et al., 2016).

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis as well as the integration of findings with literature, it may be concluded that the organizational environment (structure, function, culture) that is characterized by isolated work units is negatively influencing program implementation and performance.

6.1.3. Organizational processes of knowledge sharing and their contribution to implementation problems

Empirical findings from both the initial problem mapping (figure 4.1) and interview data analysis indicated that among stakeholders involved with the CCMDD program, there were limitations concerning knowledge of the design and objectives of the CCMDD program within the broader framework of health services delivery (4.1.3). Examples of limited education include lack of information management systems, medicine formulary, benefits of the program, as well and governance.

Lack of information sharing management systems can contribute to program implementation failure (Mills, 2006; De Schepper, Dooms & Haezendonck, 2014; Magadzire, Marchal & Ward, 2015; Magadzire et al., 2017). According to Mills et al. (2006) insufficient political commitment to provide sufficient knowledge and information sharing resources contributes to program failure. Earlier research in this area such as that done by Magadzire et al (2017) affirm that the personnel view that CCMDD program was an additional work burden contributed to its failure. For example, Magadzire, Marchal & Ward (2015) argued that lack of knowledge sharing between managers, clinicians and patients contributed to program. However, even if stakeholder roles are clarified, people's perceptions remain varied because of diverse expectations regarding processes and outcomes (De Schepper, Dooms & Haezendonck, 2014)

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis as well as the integration of findings with literature, it may be concluded that inadequate personnel education about the CCMDD program importance and how it fits into the overall health service provision strategy has contributed to its failure. This was further clarified in Table 6. 1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

6.1.4. Organizational processes of monitoring and oversight functions and their contribution to poor accountability

Empirical findings from both the initial problem mapping (figure 4.1) and interview data analysis indicated that a lack of organizational processes of monitoring and oversight functions is a contributing factor to CCMDD program failure (4.1.4).

Extant literature concurs that lack of organizational processes monitoring and oversight functions contributes to poor accountability with consequent program failure (Rifkin, 2001; Brinkerhoff, 2003; Mills et al., 2006; Musila & Mueni, 2014). Study findings by scholars such as Brinkerhoff (2003) posit that accountability is a crucial factor in maintaining accountability by making it obligatory for the various actors to be answerable for their lack of performance. Nevertheless, at operational level, ensuring accountability for centrally contracted Service Providers disables the local level capacity to monitor and hold the various actors accountable with consequent lack of accountability and program failure (Rifkin, 2001). Consequently, power disparities contribute to recurrent problems in ensuring the accountability (ibid.). Research findings from scholars such as Mills et al (2006) and Musila & Mueni (2014) affirm that lack of organizational oversight functions such as government directives and laws to enforce accountability contributes to failure to provide sustainable medicine availability.

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis, as well as the integration of findings with literature, it may be concluded that lack of organizational processes of monitoring and oversight functions has contributed to its failure. This was further clarified in Table 6. 1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

6.2. Managerial perspectives on potential cause-effect relationships related to guiding policy issues and contract management

6.2.1. Executive authority and control

Key findings from the data analysis revealed that the lack of the National Department of Health (NDoH) executive authority and control measures to coordinate public and private sector functions involved in (CCMDD program) implementation contributed to program failure. This was exemplified by lack of organizational policies, guidelines, and oversight functions to ensure targeted outcomes of the CCMDD program. Furthermore, empirical findings indicated that implementation of oversight is executed by the Non-Governmental Organizations (NGOs) who have no authority to enforce their implementation (4.2.1). Such NDoH reliance on NGO personnel for CCMDD program coordination and oversight was found to be a crucial contributing factor to lack of executive control and associated problems (4.2.1).

Extant literature supports the empirical study findings by affirming that lack of executive control is a crucial contributing factor to program failure (Reich 2002; Brinkerhoff, 2003; Mills et al., 2006; Musila & Mueni, 2014). According to Mills et al. (2006) lack of executive authority and control to govern, regulate and coordinate the multiple actors involved in the provision of health sector service contributes to program implementation failure. Earlier research by scholars such as Brinkerhoff, (2003), Musila & Mueni, 2014 maintain that lack of local level power to govern, control and compel performance from all Service Providers contributes to program sustainability failure. However, even though Government has a central role in driving the health system, in practice, the State's power is often undermined by forces at multiple levels (Reich 2002). Agreements with international organizations and donors, for example, restrict the State's autonomy to make independent decisions on macro-economic policies with subsequent imposed limits on its role in the health services delivery (ibid).

Consequently, based on empirical findings and literature, it is evident that the existing control measures such as pharmacy policies and chronic medicine guidelines that are expected to coordinate public and private sector functions involved in CCMDD program implementation are failing. This is because the oversight of their implementation is done by the NGOs who have no authority to enforce their implementation.

This was further clarified in Table 6. 1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

Consequently, it may be concluded that the absence of a guiding policy to guide CCMDD program implementation contributed to its failure. This includes lack of; actor coordination and functional regulation.

6.2.2. Optimal resource allocation and its impact on implementation

Empirical findings from the data analysis revealed that suboptimal allocation of resources contributed to program failure. This was exemplified by lack of human resource capacity to conduct oversight functions, lack of information systems as well as lack of governance systems (4.2.2).

The empirical study findings are supported by literature that affirms that lack of information and governance systems can contribute to CCMDD program failure. For example, scholars such as Bhojani et al (2011) and Paina & Peter (2012) maintain that lack of information and governance systems to ensure optimal resource allocation to support the highly interlinked resources in health care can hinder the provision of sustainable access to medicines.

Consequently, based on empirical findings and literature it can be concluded that inadequate resource allocation negatively impacted on CCMDD program on implementation

6.2.3. Systems for ensuring accountability and their influence on program performance

As shown in section 4.2.3 and illustrated in problem mapping figure 4.1 lack of systems for ensuring accountability negatively influence CCMDD program performance - for instance, lack of accountability from both the private and public sector stakeholders. Critical systems that are lacking include absence of disciplinary measures for the contracted Service Provider's failure to deliver medicine parcels timeously at community sites as well as for organization personnel's failure to implement CCMDD program activities. Such findings are in alignment with those discussed in the preceding section 6.2 regarding the negative impact of the absence of guiding policy and associated problems such as executive authority and control.

The empirical study findings are supported by literature which affirms that lack of accountability enforcing systems can hinder program performance with consequent failure

(Rifkin, 2001; Brinkerhoff, 2003). According to Brinkerhoff (2003) accountability is a key factor in maintaining accountability by making it obligatory for the various actors to be answerable for their lack of performance. However, at operational level, ensuring accountability for centrally contracted Service Providers disables the local level capacity to monitor and hold the various actors with consequent lack of accountability and program failure (Rifkin, 2001). Consequently, recurrent problems in ensuring the accountability between health facilities and their users are caused by power differentials and information asymmetry (ibid.).

Therefore, there is concurrence between empirical study findings and literature to support the conclusion that lack of systems for ensuring accountability have a negative influence on CCMDD program performance.

6.2.4. Contract management executive authority and control

Empirical findings in section 4.3.1 showed that contracts between the NDoH and the Private sector service providers are centralized at the national ministry level. Furthermore, as shown in section 4.3.2, findings indicated that there is a lack of institutionalized contract management systems to control and monitor the CCMDD program service providers. Consequently, there is no local executive power to oversee compliance with contractual terms of performance and discipline service non-performance. Also, findings indicated lack of oversight for centrally contracted actors, for instance, the CCMDD program Service Provider, NGOs, and community - based organizations.

These findings are supported by literature that supports that lack of oversight for centrally contracted actors can contribute to performance failure (Reich 2002; Brinkerhoff, 2003; Cohen-Kohler, 2007; Frost & Reich, 2010; Zakus et al., 2010). Cohen-Kohler (2007) argue that Government bureaucracy restricts local organizational level power and authority to monitor, coordinate, regulate and enforce performance of centrally contracted Service Providers. Earlier research such as that conducted by Reich (2002) affirms that although Government has the mandate to provide sustainable access to medicine, in practice, the State's power is often undermined by forces at multiple levels. This is exemplified by conflict due to Government agreements with international organizations and donors which restricts the State's autonomy to make independent decisions on macro-economic policies with subsequent imposed limits on its role in the health services delivery (ibid). Recent research in this area

such as that done by Frost & Reich (2010) and Zakus et al. (2010) maintain that centralized macro policy and funding can hinder program sustainability.

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis, as well as the integration of findings with literature, it may be concluded lack of executive authority and organizational processes for contract management contributed to CCMDD program failure. This was further clarified in Table 6.1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

6.2.5. Organizational processes and procedures for contract management and their influence on program performance

The initial observation of the lack of organizational processes and procedures for contract management theme was concurred by empirical, empirical findings from both the initial problem mapping (figure 4.1) and interview data analysis (4.3.2). This was exemplified by findings that revealed that there are no organizational processes and procedures for contract management. Furthermore, findings indicated that the absence of such organizational oversight has a negative influence on program performance.

These empirical findings are supported by scholars who concur that lack of organizational processes and procedures to provide contract management oversight has a negative influence on program performance (Chalker et al., 2005; Van Damme et al., 2008; Atun et al., 2009; Meessen et al., 2011; De Schepper, Dooms & Haezendonck, 2014; Magadzire et al., 2017). Meessen et al. (2011) argue that lack of local level organizational processes to govern, regulate coordinate and discipline Ministry contracted Service Providers can negatively influence program performance with consequent failure. For instance, findings from the Van Damme et al. (2008) study affirmed that lack of organizational process to regulate all actors contributes to indistinct boundaries between private, centrally contracted and public services, thus negatively impacting on accountability and performance.

Earlier research study findings such those conducted by Chalker et al (2005), and Atun et al (2009) concurred that the differences in organizational processes and protocols between the nationally contracted Private and Public health Service Providers can hinder collaborative program implementation and performance. This is exemplified by failure to provide sustainable

provision of access to medicines. Recent research study findings such as De Schepper, Dooms & Haezendonck (2014) and Magadzire et al. (2017) affirm that lack of micro-level contract governance processes to mediate the diverse stakeholder expectations involved in the intervention can contribute to program failure.

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis, as well as the integration of findings with literature, it may be concluded lack of organizational processes and procedures for contract management is a contributing factor CCMDD program failure. This was further clarified in Table 6. 1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

6.3. The role of Human Resource Management and its relation to the health care system context

6.3.1. Human resource executive authority and control

The initial observation of the lack of human resource capacity theme was concurred by empirical, empirical findings from both the initial problem mapping (figure 4.1) and interview data analysis (4.4). Arising from the empirical study findings, it emerged that lack of human resource executive authority and control contributed to CCMDD program failure. Associated problems included a lack of human resource capacity to implement and monitor the program performance (4.4.1) effectively.

These empirical study findings are supported by extant literature that concurs that lack of human resource executive authority and control contributes to CCMDD program failure (Marchal et al. 2010; Kalk, 2011; Magadzire, Marchal & Ward, 2016). For example, study findings from Marchal et al. (2010) agree that Government health Ministry failure on its mandate to provide policy to regulate and balance human resource incentives that ensure availability of optimal human resource skill mix contributed CCMDD program failure. This argument is supported by study findings from Kalk (2011) and Magadzire, Marchal & Ward (2016) that maintain that lack of optimal human resource executive control that ensures availability of adequate human resource capacity to support CCMDD program implementation contributed to failure to increase access to medicines through community-based sites.

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis, as well as the integration of findings with literature, it may be concluded lack of human resource capacity is a contributing factor to CCMDD program failure. This was further clarified in Table 6. 1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

6.3.2. Human resource practices and strategies that balance financial and non-financial incentives and their influence on the implementation

The initial observation of the utilization of the non-clinicians theme was concurred by empirical, empirical findings from both the initial problem mapping (figure 4.1) and interview data analysis (4.4.4). Findings established that utilization of non-clinicians at community–based chronic medicine dispensing sites have negatively influenced implementation (4.4.4).

These empirical study findings are supported by literature that concur that utilization of non-clinicians at community–based chronic medicine dispensing sites can negatively influence the implementation and outcomes of health interventions (Abuosi, 2015; Eyles et al., 2015; Magadzire, Marchal & Ward, 2016; Gubela et al., 2017). According to Magadzire, Marchal & Ward (2016), the utilization of non-clinician who have no medicine storage skills at community sites is a contributing factor to CCMDD program failure. This is because of the predominant perception of low-quality services at non-clinician driven community sites (Gubela et al., 2017). Also, patients may not perceive access as more important than quality (Abuosi, 2015). Thus, although most people in rural areas of South Africa are affected by high poverty levels and cannot afford travel costs to clinics that are more often distant, people's perception of the quality-of-care preferences still influenced their behaviour, thus contributing to community-based health care program failure.

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis as well as the integration of findings with literature, it may be concluded utilization of non-clinicians at community–based chronic medicine dispensing sites is a contributing factor to CCMDD program failure. This was further clarified in Table 6. 1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

6.3.3. Comprehensive, flexible, health workforce policy that integrates planning and organization of training, recruitment, remuneration, and deployment

The initial observation of lack of medicine storage skill at community–based chronic medicine dispensing sites theme was concurred by empirical, empirical findings from both the initial problem mapping (figure 4.1) and interview data analysis (4.4.4). Findings established that the absence of a comprehensive, flexible, health workforce policy to guide the practice of non-clinicians at community sites has a negative influence on CCMDD program implementation, for instance, lack of medicine storage skill at community–based chronic medicine dispensing sites.

Literature supports that lack of policy to guide the practice of non-clinicians at community sites has a negative influence on program implementation and performance (Narasimhan et al 2004; Mills et al., 2006; Rasschaert et al., 2014; Magadzire et al., 2016). According to Mills et al. (2006) lack of a comprehensive health workforce government policies to cater for optimal resources to enable program implementation and performance contributes to program failure. Research study findings from scholars such as Narasimhan et al. (2004) and Rasschaert et al. (2014) concur that failure to provide a comprehensive human resource plan that integrates planning, organization of recruitment, training, deployment and remuneration contributes to program implementation and performance failure. For example, the Magadzire, Marchal & Ward (2016) affirmed that utilization of non-clinicians who do not have the requisite medicine storage skill is a key factor contributing to CCMDD program failure.

Consequently, based on literature supported the initial view of the problem, empirical findings from both the initial problem mapping and interview data analysis as well as the integration of findings with literature, it may be concluded that absence of a comprehensive, flexible, health workforce policy to guide the practice of non-clinicians at community sites, for instance, lack medicine storage skill at community–based chronic medicine dispensing sites is a contributing factor to CCMDD program failure. This was further clarified in Table 6. 1, which illustrates empirical findings-based answers to questions according to problem domains, determinants, variables, and related stakeholders.

6.4 Recommendations and actions taken

Based on empirical findings the research problem was scoped down from four domains to two subdomains, namely, perspective issues (6.1.1) and organizational processes of knowledge sharing (6.1.3) because they are under organizational control. The reason for this was that findings indicated that Policy (6.2), Human Resource capacity (6.4) and Contract management (6.3) can be excluded from the study because they are centralised at Ministry level and are thus beyond the organization's control and scope of influence. Therefore, the actionable outcomes and recommendations presented in this section will focus on the two actionable domains: 6.1.1 and 6.1.3.

6.4.1. Belief systems and their influence on CCMDD program implementation problems

As shown in section 6.1.1 it was concluded that diverse belief systems between senior and operational management negatively impacted on CCMDD program implementation with consequent program failure.

Studies concur that diverse belief systems contribute to program implementation failure (Mumtaz et al., 2003; Ssengooba et al., 2007; de Savigny & Adam 2009; Sheikh et al. 2014). According to Ssengooba et al (2007) belief systems are underpinned by individual experiences, and values which impacts on their behaviour. Consequently, people can respond profoundly differently to the same new idea, policy, or intervention (de Savigny & Adam, 2009). Even if stakeholder roles are clarified, people's perceptions remain varied because of diverse expectations regarding processes and outcomes (ibid). Such variance in people's perceptions contributes to the failure to increase access to medicine because people and their relationships are crucial actors in maintaining its sustainability (van Olmen et al., 2012).

Recommendations derived from the Literature

According to Kozlowski et al. (2000) personnel training potentially improves the adoption of knowledge, skills and attributes thus facilitating their behaviors towards the achievement of the required organizational outcomes. Furthermore, training potentiates positive organizational outcomes by mediating between employee belief systems and their behaviors (Ostroff & Bowen, 2000). Moreover, the Tharenou, Saks & Moore (2007) study findings indicated there is a potential link between training and enhanced organizational outcomes.

Consequently, the recommendation is implementation of a belief system mediating strategy which consists of ongoing training education and for personnel at all levels. The key aim being to unify the diverse personnel perspectives about CCMDD program implementation.

Actions taken to mediate belief systems regarding CCMDD program implementation

1. Revised the National Health Insurance (NHI) policy source document to develop an organizational level CCMDD program focused document to guide the problematization process that occurred during the action research cycle of action, reflection and sense-making as detailed in section 2.5.
2. Adapted extant literature based theoretical techniques to suit contextual circumstances e.g. Wujec (2017) problem mapping technique (2.6.1)
3. Utilized insider action researcher access and political savvy to obtain the Director's buy-in by framing the CCMDD program problem in alignment with the Directors' and the organizational goals. This enabled the author to utilize Departmental resources such as human, office and time to hold the focus group participatory problematization process.
4. Led and participated in a participatory action research cycle of action, reflection and sense-making that was utilized by managers and multiple stakeholders to problematize, reframe and collaboratively develop a CCMDD program intervention plan (2.5).
5. Integrated literature and research methods to attain evidence-based practical knowledge using the CCMDD program work-place based problem to provide an organizational level problematization platform.

6.4.2. Organizational processes of knowledge sharing and their contribution to implementation problems.

As shown in section 6.1.3 based on empirical findings and integration with literature, it was concluded that inadequate organizational processes of knowledge sharing about the importance of the CCMDD program and how it fits into the overall health service provision strategy contributed to implementation problems with consequent program failure.

Studies concur that inadequate organizational processes of knowledge sharing contribute to implementation problems with consequent program failure (Mills, 2006; De Schepper, Dooms & Haezendonck, 2014; Magadzire, Marchal & Ward, 2015; Magadzire et al., 2017). According to Mills et al. (2006) insufficient political commitment to provide sufficient knowledge and information sharing resources contributes to program failure. Furthermore, health employees

viewed CCMDD program as an additional work burden (Magadzire et al., 2017). Moreover, lack of knowledge sharing between managers, clinicians and patients contributed to program failure (Magadzire, Marchal & Ward, 2015). Furthermore, as stated by De Schepper, Dooms & Haezendonck (2014) even if stakeholder roles are clarified, people's perceptions remain varied because of diverse expectations regarding processes and outcomes.

Recommendations derived from the Literature to improve knowledge sharing

Scholars concur that the establishment of organizational processes that improve knowledge sharing potentiates enhanced organizational performance (Jarvenpaa & Staples, 2000; Wong, 2005; Fugate, Stank, & Mentzer, 2009; Migdadi, 2009; Zheng, Yang, & Mclean, 2010). According to Jarvenpaa & Staples (2000) although a hierarchical corporate structure is a key limiting factor to organizational performance, however, the development of knowledge sharing systems can improve collaboration among personnel, managers, and departments with consequent enhanced organizational performance. Also, while Ministry centralized knowledge strategies can hinder local level organizational knowledge sharing processes such as knowledge access, creation and sharing, knowledge management among managers and departmental units can mediate the negative impact of centralized organizational culture, structure and strategy with consequent improvement in organizational effectiveness (Zheng, Yang, & Mclean, 2010). Moreover, Fugate, Stank, & Mentzer (2009) concur that improving knowledge sharing processes can enhance organizational performance, such as, service quality and end user satisfaction. According to Wong (2005) information technology can facilitate knowledge sharing within organizations. Also, the establishment of organizational processes that enhance effective knowledge sharing may potentiate successful program implementation (Migdadi, 2009).

Consequently, the recommendation is the development of a comprehensive education system for all personnel regarding the CCMDD program's role in the overall health service delivery strategy. The education system must include; role clarification, accountability for each stakeholder at all hierarchical levels, Also, it must include; standard treatment guidelines for operational managers and data information management systems to facilitate ongoing organizational learning.

Actions taken to improve Organizational processes of knowledge sharing

1. Revised the National Health Insurance (NHI) policy source document and develop a contextualized, organizational level CCMDD program focused document to guide the problematization process that occurred during the action research cycle of action, reflection and sense-making as detailed in section 2.5.
2. Adapted extant literature based theoretical techniques to suit contextual circumstances e.g. Wujec (2017) problem mapping technique (2.6.1)
3. Utilized insider action researcher access and political savvy to obtain the Director's buy-in by framing the CCMDD program problem in alignment with the Directors' and the organizational goals. This enabled the author to utilize Departmental resources such as human, office and time to hold the focus group participatory problematization process.
4. Led and participated in a participatory action research cycle of action, reflection and sense-making that was utilized by managers and multiple stakeholders to problematize, reframe and collaboratively develop a CCMDD program intervention plan (2.5).
5. Integrated literature and research methods to attain evidence-based practical knowledge using the CCMDD program work-place based problem to provide an organizational level problematization platform.
6. Wrote Terms of Reference in alignment with NHI policy to clarify roles and responsibilities for relevant stakeholders to input and amend thus yielding a collaboratively development TOC.
7. Shared Knowledge by disseminating the agreed upon TOC to the multidisciplinary Management Team members Clinic Operational Managers, the District Training Coordinator, and the Public Relations Officer for further education to relevant internal and external stakeholders as per protocol.
8. Shared knowledge and education by sending the link to the Ministry established electronic version of the Standard Treatment Guidelines (STGs) to those who have access to computers. For those without access to computers, the author addressed the knowledge gap by sending the STGs App version to their cell phones as per protocol.

6.5 Outcomes – First, Second and Third person practices

6.5.1. First person practice outcomes

First-person practice outcomes included; knowledge and practical experience of utilization of research methods to potentially solve practice level problems, greater insight and practical experience of how practice level circumstances such as resource constraints (time,

equipment, availability of senior managers) require flexible application of literature-based stakeholder engagement techniques to bring out different perspectives about the CCMDD program problem. Further outcomes included practical experience of utilizing insider action research, and greater insight of the CCMDD program problem due to exposure of underlying assumptions. Overall, first person practice facilitated refocusing of the thesis on broader social issues that benefit the wider social community rather than personal issues relating to pharmacy implementation difficulties.

6.5.2. Second person practice outcome

Second person practice outcomes included; greater insight and knowledge into the CCMDD program problem's multidimensional nature and embedded need for multidisciplinary team work; knowledge of and practice of utilization of contextualized problem mapping tool to facilitate organizational level participatory problem solving and higher comprehension of complex problems, as well as higher comprehension, knowledge, and organizational insight that pinpointed potential leverage points for organizational change by utilizing the CCMDD program work-based problem as a trigger point.

6.5.3 Third person practice outcome

Third person practice outcomes included; written Terms of Reference that provided role clarification as well as a written contextualizable problematization organizational tool that other similarly affected facilities can utilize.

6.5.4. Study limitations and future research

The primary limitation of the study is in the data sample size. A larger sample inclusive of personnel and participants outside the NDoH can, in future, non-time bound studies provide more comprehensive perspectives concerning the implementation and operational challenges of the CCMDD program. Also, the study is primarily qualitative, in future mixed methods studies one could follow up on themes via quantitative methodology to find correlations. Furthermore, one could collect existing quantitative data around the problem, such as number of clients deregistered from the CCMDD program.

6.6. Summary of conclusions, recommendations, and actions taken per problem domain, research question, interview guiding questions and implementation level

Table 6.1 below illustrates an overall overview of how each interview guiding question (2) per problem domain (1), problem determinants and variables (4) was answered throughout the research project. Also, it illustrates the literature supported conclusions (6) and recommendations and actions taken based on informing literature (7) for each problem domain. Furthermore, it indicates the level at which the responsible action was taken within the organizational scope of power and influence (8).

Table 6.1 Summary of conclusions and recommendations per problem domain interview guiding questions and implementation level

1. Problem domain	2. Interview guiding questions	3. Key Stakeholders	4. Problem determinants and variables	5. Empirical findings - based answers to interview guiding questions	6. Conclusions	7. Recommendation and actions taken	8. Level
6.1. Perspective issues	6.1.1. What influences the perspectives of personnel about CCMDD program implementation?	Frontline managers, clinicians and pharmacists	Belief systems	What influences the perspectives of personnel concerning CCMDD program implementation are the belief systems held by personnel at the various hierarchical organizational levels. Whilst senior managers believe that CCMDD program is functional, operational level managers view it as a failure	Diverse belief systems between senior and operational management have negatively impacted CCMDD program implementation and consequent failure	A belief system mediating strategy which consisted of education and training for personnel at all levels. The key aim being to unify the diverse personnel perspectives about CCMDD program implementation.	Local organizational level
	6.1.2. How is the program detracting from the work responsibilities of health personnel?	Frontline managers, clinicians and pharmacists	Organizational environment	The CCMDD program is detracting from the work responsibilities of health personnel through the entrenched organizational environment that is characterized by top-down approaches and systems. This is exemplified by the imposing approach utilized to implement the program without consultation, and role clarification.	The entrenched top-down organizational environment is in dis alignment with the multi-disciplinary, integrative approach that is required for effective CCMDD program implementation. Such dis alignment has contributed to program failure.	Establishment of an organizational environment that supports integrated services. This may include development of systems that facilitate integrative multidisciplinary work, for instance, multidisciplinary CCMDD program committees that oversee the planning, implementation and monitoring of the program	Ministry level

	6.1.4. What makes CCMDD program implementation incompatible with routine health system provision	Frontline managers, clinicians and pharmacists	Culture	What makes CCMDD program implementation incompatible with routine health system provision is the organizational culture characterized by reliance on external organizations for training, data management and outsourcing of services. Outsourced services facilitated the development of a culture of lack of accountability and lack of ownership of the program by personnel. This is in contrast with routine health service provision which is characterized by job descriptions, duty lists and systems of accountability reporting	The organizational culture of depending on external service providers and Non-Governmental Organizations to accommodate its resource constraints appears to be incompatible with routine health system provision. The consequential lack of accountability has contributed to CCMDD program failure	Establishment of an organizational culture that functions within its available resources	Ministry level
	6.1.2. What could be done to make CCMDD program less incompatible with health service provision?	Frontline managers, clinicians and pharmacists	Organizational processes of monitoring and oversight functions	What could be done to make CCMDD program less incompatible with health service provision is correcting the current lack of organizational processes of monitoring and oversight functions	Lack of organizational processes of monitoring and oversight functions has contributed to CCMDD program implementation failure.	Establishment of organizational processes of monitoring and oversight functions for CCMDD program implementation.	Ministry level
	6.1.3. What knowledge would make it less problematic for personnel to enrol patients to CCMDD program?	Frontline managers, clinicians and pharmacists	Education	Knowledge that would make it less problematic for personnel to enrol patients to CCMDD program includes education that clarifies program benefits and its alignment with departmental strategy of increasing access to medicine through the CCMDD program. Such education may include; standard operating procedures, in house training, knowledge of available medication collection sites, and institutionalized management information systems and databases	Inadequate personnel education about the CCMDD program importance and how it fits into the overall health service provision strategy has contributed to its failure	Development of a comprehensive education knowledge sharing system for personnel regarding the CCMDD program's role in the overall health service delivery strategy. The education system included; role clarification, standard treatment guidelines for operational managers.	Local organizational level
6.2. Absence guiding policy	6.2.1. What organizational	Policymakers	Governance and guidance	Control measures to coordinate and regulate public and private	Lack of governance and guidance for CCMDD	Development of governance and guidance systems to	Ministry level

	processes and procedures govern CCMDD program implementation?		for CCMDD program implementation	sector functions involved in CCMDD program implementation include organizational program oversight systems. Findings indicated a lack of these systems. This is exemplified by the fact that although the Service Provider has been reported to senior management for poor performance, there was no evidence of coordinated regulatory and executive control measures taken by the Department to discipline it. Furthermore, even though NGOs are reportedly responsible for oversight functions and training at community-based medicine distribution sites, findings indicated that there is poor oversight and training. Nevertheless, there is no evidence of coordinated regulatory and executive control measures taken by the Department to discipline it.	program implementation contributed to its failure. This includes lack of; actor coordination, and functional regulation	coordinate and regulate all actors involved in CCMDD program implementation. This may include; organizational level standard operating procedures for program implementation, coordination and oversight functions. It may also include establishment of a multi-disciplinary CCMDD program governance committee chaired by senior managers to ensure installation of organizational level oversight and accountability systems.	
	6.2.1What control measures are there to coordinate public and private sector functions involved in CCMDD program implementation?	Chief Director	Actor Coordination				
		Public Health Specialist	Functional regulation				
	What kinds of resource support or lack thereof have contributed to CCMDD program outcomes?	Public Health Specialist	Optimal allocation of available resources	The of lack of resource support that has contributed to negative CCMDD program outcomes include; lack of organizational systems, human resource capital, and infrastructure for medicine storage and handling. It also includes lack of; administrative mechanisms, in-house training and capacity to perform oversight functions.	The suboptimal allocation of available resources (human, infrastructure and finance to support CCMDD program implementation and monitoring contributed to its failure	Optimal resource allocation of available resources to accommodate CCMDD program implementation both at organizational and community sites.	Ministry level

	6.2.2. What determines overall accountability for CCMDD program implementation for both the private and public sector stakeholders?	Public Health Specialist	Accountability management systems.	What determines overall accountability for CCMDD program implementation for both the private and public sector stakeholders are the systems for ensuring accountability. Findings have indicated a lack of organizational s management systems of accountability systems for CCMDD program implementation	The lack of accountability management systems to determine overall accountability for CCMDD program implementation for both the private and public sector stakeholders has contributed its failure	Development of comprehensive accountability management systems to regulate overall accountability for CCMDD program implementation for both the private and public sector	Ministry level
6.3. CCMDD program Contract management	6.3.1. What national control measures are there for contracted private actors?	Policymakers	Governance policy to control and regulate service providers	The national control measures for contracted private actors are limited to contracting the Service Provider. Findings indicated that there are no localized control measures. This contributed to CCMDD program failure.	The absence of a national governance policy to control and regulate service providers contributed to CCMDD program failure	Development of a national governance policy to control and regulate service providers.	Ministry level
	6.3.2. What organizational systems are there to ensure contracted service provider performance?	Policymakers	Integrated systems to plan, organize, coordinate, and monitor involved actors	Organizational systems to ensure contracted service provider performance include integrated systems to plan, coordinate and monitor involved actors. Empirical research established the absence of institutionalized systems for CCMDD program implementation and accountability as a key explanation for poor performance by the service providers.	The absence of integrated organizational systems to plan, organize, coordinate, and monitor contracted actors in the CCMDD program played a role in its failure	Development of integrated organizational systems to plan, organize, coordinate, and monitor all actors involved in program implementation and oversight.	Ministry level
6.4. Lack of human resource capacity	6.4.1. What overall human resource management support system governs CCMDD program implementation?	Human resources managers	Human resource governance to regulate and coordinate all actors	The overall human resource management support system that governs CCMDD program implementation includes systems that support human resource capacity. Empirical findings indicated an absence of such systems.	The absence of human resource governance to regulate and coordinate all actors contributed to its failure	Development of a human resource governance system to regulate and coordinate all actors	Ministry level
Utilization of non-clinicians	6.4.2. What is the rationale behind the utilization of non-clinicians at community-based	Human Resources Managers	Planning and organization of training, recruitment, remuneration,	The rationale behind the utilization of non-clinicians at community-based medicine distribution sites appeared to be financial savings. However,	The absence of planning and organization of training, recruitment, remuneration, and deployment of non-	Development of a human resource plan that includes the organization of training, recruitment, remuneration, and deployment of non-	Ministry level

	medicine distribution sites?		and deployment of non-clinicians	findings indicated the lack of a flexible health policy that takes into consideration the cost benefit analysis in workforce deployment contributed to CCMDD program failure. For instance, although utilization of non-clinicians was regarded as a cost-saving measure, it was found to have contributed to program failure because of their lack of training in medicine handling	clinicians operating at community-based medicine distribution site contributed to program failure.	clinicians operating at community-based sites	
	6.4.3. What guides the practice of non-clinicians at community-based sites?	Human Resources Managers	Planning & organization of training, recruitment, remuneration and deployment of non-clinicians	What guides the practice of non-clinicians at community-based sites are policy guidelines and training for community-based medicine issuers. Findings indicated an absence of such In-service training from the Department			
Lack of medicine storage skill	6.4.3. What kind of support is there, in terms of training or technical assistance, for non-clinical personnel who implement the CCMDD program at community sites?	Human Resources Managers	Human resource practices and strategies that balance financial and non-financial incentives	The kind of training support for non-clinical personnel who implement the CCMDD program at community sites was found to be NGO based and only at program commencement. However, it was found to be inadequate and unsustainable	The lack of human resource practices and strategies that balance financial and non-financial incentives negatively impacted on CCMDD program performance.		

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Appendix 1 – CCMDD program Nvivo data thematic analysis

Centralized chronic medicine dispensing and distribution (CCMDD) program data thematic analysis

INDUCTIVE THEMES	NVIVO THEMES	EXTRACTS	PRIMARY SOURCE
Programme consistency with work responsibilities of health personnel	Work responsibilities Health personnel Access medication Convenience Treatment compliance and adherence	Reference 1 - 3.84% Coverage The program is consistent with the work responsibilities of health personnel as they are responsible for ensuring that patients can access medication conveniently and timeously. Also ensuring treatment compliance and adherence is a key responsibility of health personnel and CCMDD supports health personnel in fulfilling this responsibility.	Chief Director & Public health Specialist
	Additional work by staff Managing monthly treatment dispensing Reduces patient numbers Additional responsibility	Reference 2 - 2.82% Coverage The most unfortunate thing about this program is that it is seen as additional work by staff. However, the program actually relieves the facility from managing monthly treatment dispensing which significantly reduces patient numbers per day. This benefit is lost in the reasoning that CCMDD is another additional responsibility. Reference 3 - 1.13% Coverage	Chief Director & Public health Specialist
	Detract Patients Recording and filing Query solving	Reference 4 - 2.13% Coverage If the programme is well understood, it should not be seen as detractor because decongestion of facilities allows ample time for the provision of quality care to each individual client. The program is not additional work and should not be seen as.	Line Managers and Clinicians
	Perspective Facilities Decongestion	Reference 5 - 1.61% Coverage	Clinical Manager-Nursing

	Provision of quality care No additional work Viewpoint Decongestion of facilities Focus on patients Patients needing more attention Increased administrative tasks Record keeping Outsourcing Contacting Lack of Accountability Not a detractor Decongestion Facilities Provision of quality care Individual clients Not additional work, Not to be viewed as such (perspective) Encourages chronic medication adherence Supports Responsibilities of health personnel Administrative burden Time consuming	CCMDD promotes the decongestion of facilities thus allowing focus on patient needing more attention. However, it also introduces as abundance of administrative tasks such as record keeping Reference 1 - 1.95% Coverage Outsourcing of Dispensing and Distribution of medication and contracting of the private Dispensing and Distribution has contributed to lack of accountability by DOH personnel Reference 1 - 2.37% Coverage If the program is well understood, it should not be seen as detractor because decongestion of facilities allows ample time for the provision of quality care to each individual client. The program is not additional work (shouldn't be seen as) Reference 1 - 3.04% Coverage The program encourages chronic medicine adherence which supports the responsibilities of health personnel, however the administration that it comes with takes up a lot of time and resources from health personnel Reference 1 - 1.65% Coverage Personnel do not have an insight into the programme and view it as additional work burden Reference 1 - 1.56% Coverage There are no specific medicine issuing guidelines for community-based personnel. Reference 2 - 2.67% Coverage The programme is perceived as additional work burden because there is no additional personnel and equipment to	Line Managers and Clinicians Chief Director Clinical Manager—Nursing General Clinical Staff Policy Maker Deputy Manager (Clinical Specialist Team)

	Resource reallocation Insight into programme Viewpoint Additional burden No specific guidelines Community based personnel Additional work burden No additional personnel No additional equipment Implementation not supported properly Imposed programme Perspective Too much paperwork Manual registration Extra work Timeous delivery of medicine parcels Tracking consumes time Service providers Imposed programme	support its implementation Reference 3 - 0.82% Coverage It is thus viewed as an imposed programme. Reference 1 - 2.63% Coverage There is too much paperwork to do because of the manual registration Reference 1 - 5.63% Coverage There is extra work because medicine parcels are not delivered on time and it takes time to track with the service provider when the parcels will be delivered Reference 2 - 2.10% Coverage This programme was imposed without clear role clarification Reference 1 - 4.51% Coverage Patients do not collect their parcels and getting the medication back to the service provider is additional work Reference 1 - 3.14% Coverage There is additional workload involved in keeping registers for uncollected parcels Reference 1 - 5.61% Coverage There is extra administrative work in terms of keeping records of registered patients and calling the service provider for un-delivered parcels Reference 1 - 4.47% Coverage CCMDD is viewed as an imposed programme because it is not included in job descriptions and daily duty lists. Its implementation was arbitrary.	Deputy Manager (Clinical Specialist Team) Deputy Manager (Clinical Specialist Team) Front line Managers (Clinicians, Pharmacists, Nurses) Front line Managers (Clinicians, Pharmacists, Nurses) Front line Managers (Clinicians, Pharmacists, Nurses) Front line Managers (Clinicians, Pharmacists, Nurses) Front line Managers (Clinicians,

	No clear role clarification Problems with parcel collection Medication returns presents additional work Additional workload Keeping registers Uncollected parcels Extra administrative work Keeping records Registered patients Communication with Service Providers Uncollected parcels Perspective Imposed programme Not included in job description Arbitrary implementation		Pharmacists, Nurses) Front line Managers (Clinicians, Pharmacists, Nurses)
Accountability for CCMDD implementation	Accountability Good monitoring and evaluation systems Monitoring tools Paper based or electronic	Reference 1 - 4.44% Coverage Transversal accountability for CCMDD is largely determined by a good monitoring and evaluation system in terms of (1) Monitoring tools like Patient Registers for CCMDD whether paper based or electronic (2) Effective and efficient patient tracking system for	Chief Director Public health specialist

	Patient tracking systems Collection and tracing of defaulters Feedback systems Health Facility Central dispensing Unit Pick Up Points Performance reporting Poor insight on programme Managers oblivious to programme Depth and implication of problems Lack of proper monitoring and evaluation Close monitoring Appropriate statistics Record of registrations Deregistration's Follow up on detected challenges Policy Stakeholders District programme managers Facility managers Health care workers Assumptions	collection and tracing of defaulters, Feedback system between the Health facility, the Central Dispensing Unit and the Pick-up Point and last but not least Regular reporting on performance at all levels (PUPs, Health Facilities, District and Provincial levels). Reference 2 - 2.16% Coverage Nothing, there is generally poor insight on the program from managers to an extent that most managers seem oblivious to the depth and implication of problems that face the program. This is more probably due to lack of proper monitoring and evaluation. Reference 3 - 1.23% Coverage Close monitoring of the process that is appropriate statistics, records of registrations and de-registrations follow up on challenges detected. Reference 4 - 3.49% Coverage Policy on CCMDD would have made this clear to every stakeholder especially the district program managers, facility managers and health care workers. An assumption is that between province and national there is perhaps an SOP that governs how public and private (service provider) work including roles and responsibilities and accounting measures that are used to remunerate the service provider on work done. Reference 1 - 1.86% Coverage Monitoring systems for the both private and public sector stakeholder as per contractual obligations Reference 1 - 4.27% Coverage Although there are policies for monitoring, the oversight function is poor because of resource constraints	Chief Director Public health specialist Chief Director Public health specialist Chief Director Public health specialist Policy Maker Frontline Managers and Clinicians

	Standard Operating procedures Roles and responsibilities Accounting measures Service providers Monitoring systems Sector Stakeholders Contractual obligations Policies for monitoring Poor oversight function Resource Constraints		(Pharmacists, Clinicians, Nurses)
Practice of non-clinicians at community-based sites	 Practices Good Pharmacy practice guidelines Correct Storage and distribution Prescribed Monitoring and reporting systems Stated Operating Procedures Guidelines Support Service provider Supporting NGOs Human resources	Reference 1 - 1.70% Coverage Their practice is guided by the Good Pharmacy Practice guidelines which prescribe the correct storage and distribution of Pharmaceuticals and the prescribed Monitoring and Reporting Systems for CCMDD Reference 2 - 1.35% Coverage There are stated operating procedures that are meant to guide individuals in these sites with support from both the Service provider and the supporting NGO. Reference 3 - 0.27% Coverage No HR switches specific to CCMDD Reference 4 - 0.77% Coverage	Chief Director Public health specialist Chief Director Public health specialist Human Resource Manager Clinical Manager Nursing

	specific to CCMDD Available guidelines Standard Operating Procedures Support from Clinicians Signed contracts Relationships/Networks Service Providers Guidelines No specific guidelines Community based medicine issuers No specific medicine issuing guidelines Community based personnel	The available guidelines, SOPs and support from the clinicians (at least if it's happening) Reference 1 - 1.67% Coverage The contract signed at the beginning of the relationship with the service provider guides the dealings of the sites. Reference 1 - 1.28% Coverage There are no specific guidelines for community-based medicine issuers Reference 1 - 1.56% Coverage There are no specific medicine issuing guidelines for community-based personnel.	Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Policy Maker Deputy Manager (Clinical Specialist Team)
Program's alignment with work responsibilities of health personnel	Promotes decongestion of facilities Focus on patients needing more attention Abundance of administrative tasks Record keeping	Reference 1 - 1.61% Coverage CCMDD promotes the decongestion of facilities thus allowing focus on patient needing more attention. However, it also introduces as abundance of administrative tasks such as record keeping Reference 1 - 3.04% Coverage The program encourages chronic medicine adherence which supports the responsibilities of health personnel,	Chief Director Public health specialist Policy Maker

	Encourages chronic medicine adherence Support Responsibilities of health personnel Administration Time and resource consuming Health personnel Specific budget Acquisition of new resources Implementation No additional governance systems Personnel Insight into programme Perspective Additional work burden Extra work Medicine parcels no delivered-on time Tracking time demands Service Provider Patients not collecting parcels Medication returns to SP Additional work	however the administration that it comes with takes up a lot of time and resources from health personnel Reference 1 - 1.45% Coverage There is no CCMDD specific budget to accommodate acquisition of new resources. Reference 2 - 1.49% Coverage CCMDD implementation was implemented without additional systems of governance Reference 3 - 1.65% Coverage Personnel do not have an insight into the programme and view it as additional work burden Reference 1 - 5.63% Coverage There is extra work because medicine parcels are not delivered on time and it takes time to track with the service provider when the parcels will be delivered Reference 1 - 4.51% Coverage Patients do not collect their parcels and getting the medication back to the service provider is additional work Reference 2 - 1.33% Coverage There is no clear role definition	Policy Maker Policy Maker Policy Maker Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses)

	Role definition		
Control Measures	Control measures Coordinate public and private functions Implementation Pharmaceutical services policy guidelines Good pharmacy practice Prescription Storage Dispensing of medicines Responsibility Constrained Limited autonomy Policy absence Standard Operating procedures available Adherence guidelines for HIV, TB, NCDs Guidelines Health Care Workers Programme implementation Social mobilization Advocacy Political buy in Stakeholders Pharmaceutical retailers Provision of space	Reference 1 - 2.16% Coverage The control measures used to coordinate public and private functions involved in CCMDD implementation are: The KZN Pharmaceutical services policy guidelines, good pharmacy practice which prescribes the prescription, storage and dispensing of medicines Reference 2 - 1.03% Coverage Currently this function falls upon an NGO that is Health Systems Trust but this is with significant limitation due to limited authority. Reference 3 - 2.43% Coverage Difficult to spell out since there is not policy. However, there are a number of standard operating procedures. Most of these SOPs are packaged on Adherence Guidelines for HIV, TB, and NCDs. These guidelines and SOPs mostly guide Health Care Workers on implementation of the programme. Reference 4 - 5.25% Coverage Social mobilization, advocacy on CCMDD and political buy in has ensured that various stakeholders and interested groups like pharmaceutical retailers, CBO, NGOs (Funded and unfunded have offered their premises for the provision of space for CCMDD pick up points. Community Caregivers have also been instrumental in mobilizing patients on Chronic medication to form Adherence Clubs as part of CCMDD. PEPFAR funded NGOs have also supported DOH in coming up with IT systems and software like SyNCH to improve the functionality of CCMDD and some have even appointed Pharmacy Assistants to be responsible for PUPs.	Chief Director Public health specialist Chief Director Public health specialist Clinical Manager—Nursing Chief Director Public health specialist Chief Director Public

	Pick up points Community Caregivers Instrumentality Patient mobilization Chronic medication IT Systems and software Pharmacy Assistants Patient Compliant Adherence to treatment No counselling required Medication No policy Standard Operating Procedures Adherence Guidelines for Communicable and NCDs Health Care Workers Coordination between public and private functions Assumptions	Reference 1 - 1.69% Coverage Also, it is based on the premise that the patient is compliant and adherent to treatment and will not require any counselling on to take the medication Reference 1 - 2.78% Coverage Difficult to spell out since there is no policy. However, there are a number of Standard Operating Procedures. Most of these SOP's are packaged on Adherence Guidelines for HIV, TB, and NCD's. These guidelines and SOP's mostly guide Health Care Workers on implementation of the programme Reference 1 - 3.29% Coverage There is not so much co-ordination between public and private functions. The public facility would send a client to a private facility and only see those six months later with the hope that they have been collecting meds monthly. Reference 1 - 2.08% Coverage There are no CCMDD specific control measures in place because the National Health Initiative bill is not yet law Reference 1 - 1.64% Coverage None at present. Community based service coordination is dependent on NGO assistance	health specialist Clinical Manager—Nursing Policy Maker Policy Maker Deputy Manager—(Clinical Specialist Team)

	No specific control measures National Health Initiative Bill {Legislation) Community based service coordination Dependence		
Pharmaceutical measures	Pharmaceutical services policy guidelines Medicine storage Dispensing practices	Reference 1 - 1.43% Coverage Pharmaceutical services policy guidelines, and Good Pharmacy Practice, which prescribes medicine storage and dispensing practices.	Chief Director Public health specialist
National control measures for private actors	Centralization Contract management Contract Management Systems Transition period	Reference 1 - 2.75% Coverage Contract management is centralized at national level. However, contract management systems are poor especially during the contract transition period	Policy Maker
Systems to ensure service provide performance	Performance reporting Pick Up Point Health Facility District level Provincial level No systems Institutionalized Contract Management Systems Service Providers	Reference 1 - 1.13% Coverage Regular reporting on performance levels for the PUPs, health facility, district and provincial level. Reference 1 - 0.42% Coverage There are none that I know of Reference 1 - 1.67% Coverage There are no institutionalized contract management systems yet for CCMDD Service providers Reference 1 - 1.01% Coverage Contract management is centralized at national level	Chief Director Public health specialist Policy Maker Policy Maker Deputy Manager—(Clinical Specialist Team)

	Centralized contract management		
Transversal oversight measures	Facility District and Pharmaceutical Management Services Oversight Responsibility Medicine parcel delivery Poor performance No real monitoring Non delivery Department of Health Reliance Service Providers Collateral data Unknown	Reference 1 - 1.04% Coverage Facility, District and Provincial Pharmaceutical Management Services, WBOT Teams are responsible for providing oversight Reference 2 - 3.63% Coverage Generally, its patient medicine parcel delivery. However, even when there might be poor performance, there is no real monitoring by facilities. Non-delivery would only trigger a call to the service provider. The Department of Health relies entirely on the service provider to report such incidents. This defeats the purpose when there is no collateral data being collected by facilities to this effect as currently the case. Reference 3 - 0.20% Coverage Not known at this level	Chief Director Public health specialist Chief Director Public health specialist Deputy Director—(Clinical Specialist Team)
Training for non-clinical personnel	Community based sites Health facility Patient referrals Pharmacist responsibility Technical support Non-clinical sites District Pharmacist Oversight supervision Community based sites	Reference 1 - 3.18% Coverage Community based sites are established from a Health facility as patients will be down referred from a health facility to a community site. Therefore, the Pharmacist of that health facility is responsible for technical support to non-clinical sites. In addition, the District Pharmacist plays a crucial role in providing oversight supervision of the Community Based sites. Reference 2 - 2.16% Coverage Health Systems Trust as provincial CCMDD support partner together with District Pharmacists are meant to assess	Chief Director Public health specialist Chief Director Public health specialist

	Health systems Support Partner District Pharmacists Site Assessment Certification Monitoring Human resources switching Support Community care givers Training Lack of awareness Community level services Cadre training Programmes Service delivery Supportive supervision Responsibility WBOT's Support Facilities Empowerment Community programmes Ward Based Outreach Programmes (WBOTs) Community level services Cadre training Programmes	these sites for suitability to deliver service prior to being certified to operate. Monitoring of these services thereafter seems unclear. Reference 3 - 0.95% Coverage HR switches was not specific for CCMDD support. Community care givers still have to secure conference training Reference 4 - 0.33% Coverage Not aware of any specific for CCMDD Issuer. Reference 5 - 2.90% Coverage The WBOT's are expensive for community level services. This includes ensuring that cadres in the community are trained on all programmes for which services are delivered in the community. Their supportive supervision is also their responsibility. WBOT's support should come from facilities to empower them on programmes in the community. Reference 1 - 3.97% Coverage (SHOULD, I DOUBT IF IT'S HAPPENING) __The Ward Based Outreach Teams (WBOTs) are responsible for community level services. This includes ensuring that cadres in the community are trained on all programmes for which services are delivered in the community. Their supportive supervision is also their responsibility. WBOTs support should come from facilities to empower them on programmes in the community Reference 1 - 1.05% Coverage The non-clinical personnel get training at the beginning of the contract. Reference 1 - 1.80% Coverage	Chief Director Public health specialist Policy Maker Chief Director Public health specialist Deputy Director—(Primary Health Care) Policy Maker

	Service delivery Empowerment Community programmes Non-clinical personnel Training Contract commencement Department of Health NGO Support Community site monitoring In-Service Training Non-Clinical Personnel In-Service Training NGO Personnel	The Department is dependent on NGO support for community site monitoring and in-service training. Reference 1 - 1.34% Coverage NGO personnel give non-clinical personnel in-service training.	Policy Maker Deputy Manager—(Clinical Specialist Team)
Non-Clinician personnel at community-based centres	Rationale Pre-dispensed medication Pre-labelled with patient details Non-clinicians Parcel Issuance Low level functions Requires non-clinical skills Assumptions/Premises Adherents to treatment Counselling Medication Integrated planning Risk management Planning shortcoming	Reference 1 - 3.72% Coverage The rationale used is that the medication in CCMDD sites comes already pre-dispensed packaged and labelled with the patients' details. All the non-clinicians have to do is to issue out the parcel to the patient. This is a low-level function, which does not require any clinical skill. Also, it is based on the premise that the patient is compliant and adherent to treatment and will not require any counselling on how to take medication Reference 2 - 2.25% Coverage As far as HR--No integrated Planning and risk management; Planning shortcomings--funding and resources constraints. The programme was just introduced without a proper cost-benefit analysis done. They do not require clinical expertise and resource constraints.	Chief Director Public health specialist Human Resource Manager

	Funding and resource constraints Programme in early stages Cost-Benefit analysis Clinical Expertise Resource constraints Differentiated Model of Care Access to Chronic medication Retention improvement Countries with limited resources Nature of work Non-Clinicians ability Staff shortage Facilities Community level Human resource switches Insufficient resources and funding No-Clinical Resources Issuing medicine Social mobilization Political buy in Interested groups and stakeholders NGOs	Reference 3 - 4.14% Coverage According to the background to differentiated model of care is to improve access to chronic medication thereby improving retention in care and longevity of these clients in countries with limited resources to utilize expensive clinicians when non-clinicians could do the work. The staff shortage in facilities was another reason for the use of non-clinicians. It is also looked into cadres already available at community level like CCG's/CHW's instead of bringing in another cadre Reference 4 - 0.27% Coverage No HR switches specific to CCMDD Reference 5 - 0.87% Coverage Insufficient resources and funding. No clinical resources required since it is just issuing medicine. Reference 1 - 2.96% Coverage Social mobilization, advocacy on CCMDD and political buy-in has ensured that various stakeholders and interested groups like private pharmacies, community-based organizations, Non-Governmental Organizations (NGOs) have offered their premises as CCMDD Pick up Points Reference 2 - 1.52% Coverage Community Care Givers have also been instrumental in mobilizing patients on chronic medication to form adherence clubs as part of CCMDD. Reference 1 - 4.50% Coverage The service provider that the non-clinicians at community-based distribution sites has the contract with is supposed to be giving support, however	Human Resource Manager Human Resources Manager Human Resource Manager Chief Director Public health specialist Chief Director Public health specialist Policy Maker

	Resource Offerings Pick Up Points Community caregivers Instrumental Patient mobilization Chronic medication Service Providers Community based distribution sites Giving support Mother Hospitals Referring facilities Lack of support Cost containment strategy Limited funds Lack of financial resources Additional clinical personnel Community level sites	these sites end up looking for support from mother hospitals/ referring facilities whenever there are challenges. There seems to be a lack of support in this regard. Reference 1 - 1.06% Coverage It's a cost containment strategy because of limited funds Reference 1 - 1.95% Coverage Lack of financial resources to attain additional clinical personnel to work at community level sites.	Policy Maker Deputy Manager—(Clinical Specialist Team)
Accountability for CCMDD implementation	Patient compliance	Reference 1 - 1.38% Coverage Patient compliance, convenience for patients, service fee paid by service providers, improved access to medicines;	Chief Director Public health specialist

		improve access to private and public healthcare Reference 1 - 4.01% Coverage	
	Policy on CCMDD District Programme Managers Facility Managers Health Care Workers Assumptions Standard Operating Procedures Governance Role and Responsibilities Accounting measures	Policy on CCMDD would have made this clear to every stakeholder especially the district program managers, facility managers and health care workers. An assumption is that between province and national there is perhaps an SOP that governs how public and private (service provider) work including roles and responsibility and accounting measures that are used to remunerate the service provider on work done Reference 1 - 2.88% Coverage Private sector is supposed to send manifest to the CCMDD service provider with lists of all clients that collected from them for consolidation with referring facilities, not sure, if this is happening.	Deputy Director—(Primary Health Care) Policy Maker Policy Maker
	Private sector to send manifests to CCMDD List of Clients Consolidation with referring facilities Existence questioned Updating of defaulters Service providers Monitoring systems Contractual obligations	Reference 2 - 1.54% Coverage Public and private sectors are supposed to be updating defaulters every 48 hours with the service providers Reference 1 - 1.86% Coverage Monitoring systems for the both private and public sector stakeholder as per contractual obligations Reference 2 - 1.67% Coverage There are no institutionalized contract management systems yet for CCMDD Service providers Reference 3 - 1.49% Coverage CCMDD implementation is was implemented without additional systems of governance Reference 1 - 3.87% Coverage	Policy Maker Policy Maker Policy Maker Policy Maker Frontline Managers

	No Institutionalized contract management CCMDD Service Providers Implementation No additional systems of governance Poor services Seemingly absence of measures Lack of resources Constrains monitoring Service Provider non-performance No accountability No accountability systems Medicine parcels not delivered Poor monitoring Lack of staff	Not aware of accountability measures because the Service Provider provides poor service continuously Reference 1 - 1.82% Coverage Monitoring is not done because of lack of resources Reference 2 - 2.96% Coverage We need to know why the service provider is not performing but not held accountable Reference 1 - 5.48% Coverage There are no evident accountability systems because even if medicine parcels are not delivered the Service Provider continues with poor service Reference 1 - 1.84% Coverage There is poor monitoring because of lack of staff Reference 1 - 5.28% Coverage Systems of monitoring, evaluation, and reporting. However, because of resource constraints, such systems are very poor thus impacting negatively on programme performance	and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses)

	Systems of monitoring, evaluation and reporting Resource constraints Poor systems design Negative programme performance		
CCMDD compatibility with health systems design	Insourcing Replacement Accountability by DoH personnel Develop in-house monitoring and reporting systems Eliminate data discrepancies Stakeholders Responsibility Part performance Standard Operating Procedures Role players and processes No monitoring No oversight No accountability Upgrading of community sites Parcel collection Minimization of exclusion lists Patient enrolment Staff Training	Reference 1 - 2.19% Coverage In-sourcing of the dispensing and distribution and do away with private dispensing and distribution to improve accountability by DoH personnel, develop in house monitoring and reporting systems which will eliminate data discrepancies as service providers. Reference 2 - 2.11% Coverage All stakeholders need to be held responsible for their part in the program. The SOPs clearly indicate responsibilities of various role players and processes. However, no monitoring, no oversight, and therefore no accountability meets this. Reference 3 - 1.33% Coverage Support the upgrading of community sites for collection of parcels; Service provider to minimize the exclusion list so that more patients can be enrolled. Reference 4 - 1.12% Coverage Reiterate importance of CCMDD in the community, train all staff involved with CCMDD then induct CCMDD duty list on job descriptions Reference 5 - 2.43% Coverage Periodic orientation coupled with consistent mentorship to enable	Chief Director Public health specialist Chief Director Public health specialist Human Resource Manager Human Resource Manager Policy Maker

	Duty list on job description Periodic orientation Consistent mentorship Address emergent challenges Day-day operations Facility operational plan Decongestion of facilities More focused patient care Periodic orientation and mentorship Health care workers Emergent challenges Facility Operational plans Non-inclusion of achievement Employee Performance Management and development (EPMDS)	healthcare workers to address challenges that arise on a day-to-day operation. District and facility operational plan should include e.g. targets for stable clients down referred to CCMDD, include these targets to EPMDS Reference 6 - 1.61% Coverage CCMDD promotes the decongestion of facilities thus allowing focus on patient needing more attention. However, it also introduces as abundance of administrative tasks such as record keeping Reference 1 - 3.61% Coverage Lack of periodic orientation and mentorship to enable health care workers to address challenges that arise on a day-to-day operation. Lack of District and facility operational plans that include, for example, targets for stable clients down referred to CCMDD, and non-inclusion of achievement of these targets to Employee Performance Management and Development (EPMDS) Reference 1 - 2.74% Coverage The updating of Tier for all six repeats as being collected at the 1st month, which sometimes does not paint a true picture for medicine collection if a client misses some parcel collections Reference 1 - 1.45% Coverage CCMDD implementation was not introduced properly with clear role clarification Reference 1 - 2.57% Coverage Monitoring systems incorporated in performance agreements and contracts for relevant stakeholders in the public and private sectors.	Policy Maker Deputy Director—(Primary Health Care) Policy Maker Policy Maker Deputy Manager—(Clinical Specialist Team) Deputy Manager—Clinical Specialist Team)

	Supply chain updating and upgrading Operational picture not true reflection Missed parcel collections Implementation not introduced properly No clear role clarification Monitoring systems Performance agreements Contracts for relevant stakeholders Implementation activities Non-Incorporation Job descriptions Performance agreements Imposed programme Poor role clarification No clear distinctions Non-performance Programme imposed No clear role clarification	Reference 2 - 2.84% Coverage CCMDD implementation activities were not incorporated into job descriptions and performance agreements. It is thus viewed as an imposed programme. Reference 1 - 4.33% Coverage Poor role clarification blurs the distinction of who does what when and how thus contributing to non-performance Reference 1 - 2.10% Coverage This programme was imposed without clear role clarification Reference 1 - 3.18% Coverage CCMDD implementation activities have not been institutionalized in job descriptions Reference 1 - 2.35% Coverage We were not oriented on how CCMDD fits into our daily duties Reference 1 - 5.35% Coverage Role clarification, inclusion in job descriptions and performance agreements. The performance indicators incorporated into the routine institutional data management system.	Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses)

	Implementation activities Not institutionalized No orientation CCMDD design into daily duties		
Resources support	Social mobilization Political buy in Various stakeholders Interested Groups Resource (premises) offerings Community caregivers Patient mobilization on Chronic medication NGO support PEPFRAR funding IT Systems and Software Human resources Adequate staff Infrastructure Adequate storage space Equipment	Reference 1 - 5.25% Coverage Social mobilization, advocacy on CCMDD and political buy in has ensured that various stakeholders and interested groups like pharmaceutical retailers, CBO, NGOs (Funded and unfunded have offered their premises for the provision of space for CCMDD pick up points. Community Caregivers have also been instrumental in mobilizing patients on Chronic medication to form Adherence Clubs as part of CCMDD. PEPFAR funded NGOs have also supported DOH in coming up with IT systems and software like SyNCH to improve the functionality of CCMDD and some have even appointed Pharmacy Assistants to be responsible for PUPs. Reference 2 - 1.19% Coverage Human resources--adequate staff; Infrastructure--adequate storage space for parcels; Equipment-availability of scanners/computers/telephone Reference 3 - 1.58% Coverage The problem with CCMDD is not so much a resource allocation but more poor ownership of the program by relevant cadre of staff at all levels but with great emphasis at facility levels. Reference 4 - 1.08% Coverage	Chief Director Public health specialist Chief Director Public health specialist Human Resource Manager Human Resource Manager

	CCMDD internal problems Resource allocation Poor programme ownership Human resources Data capturers Medicine handout staff Infrastructures-churches, halls, private plenaries, hospitals Service Provider facility support visits Challenges faced by Healthcare workers Adequate space Storage Pre-packaged medicines for facility Pick points Positive programme support Adverse programme support Lack of involvement Interdisciplinary and interdepartmental networks Costs of service provision	Human resources, data capturers, staff to handout medicines and infrastructures--churches, halls, private plenaries hospitals Reference 1 - 5.79% Coverage The service provider facility support visits (done by the initial service provider) are reported to have eliminated many challenges that health care workers currently report e.g. mentorship on script writing processes and systems. Adequate space to store prepacked medicines for facility pick points support the programme whereas lack of such creates challenges. Lack of involvement or CCMDD Champions in facility who work hand in glove with Pharmacist Assistants at clinics or Pharmacist at CHC's and Hospitals Reference 6 - 0.98% Coverage To reduce costs that would be incurred with higher level clinician staff and create employment within communities Reference 1 - 2.49% Coverage CCMDD came with a lot of administrative duties, which needed extra human resources. Smaller facilities e.g. PHC's saw challenges with regards to space for storage of parcels. Reference 2 - 4.50% Coverage The service provider that the non-clinicians at community-based distribution sites has the contract with is supposed to be giving support, however these sites end up looking for support from mother hospitals/ referring facilities whenever there are challenges. There seems to be a lack of support in this	Deputy Director—Primary Health Care Deputy Manager—(Clinical Specialist Team) Policy Maker Policy maker Deputy Manager—(Clinical Specialist Team) Deputy Manager—(Clinical Specialist Team)

	Employment within communities Increased administrative duties Extra human resources Smaller facilities Space for storage Non-Clinicians Community based distribution sites Support from Mother hospitals/referring facilities Lack of support CCMDD specific budget Accommodate resource acquisition Available resources Lack of personnel Monitoring and oversight functions Community level medicine issuing sites	regard. Reference 1 - 2.47% Coverage There is no CCMDD specific budget to accommodate acquisition of new resources. Facilities are expected to utilize available resources Reference 1 - 2.05% Coverage Lack of personnel to conduct monitoring and oversight function at community level medicine issuing sites. Reference 2 - 2.67% Coverage The programme is perceived as additional work burden because there is no additional personnel and equipment to support its implementation Reference 1 - 4.06% Coverage There is shortage of personnel, data information systems, and lack of monitoring of community-based sites Reference 1 - 5.88% Coverage Clinics are already short staffed There is no connectivity for electronic communication with CCMDD service provider. Manual systems add to the clinic workload burden Reference 2 - 2.17% Coverage Those who were trained have left due to high staff attrition. Reference 1 - 3.22% Coverage Lack of personnel to capture the data for registration and monitoring defaulters Reference 1 - 4.79% Coverage There was no additional resource input to support CCMDD implementation. The	Deputy Manager—(Clinical Specialist Team) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers

	Perceptions (social capital) Additional work Additional personnel Equipment supporting implementation Shortage of personnel Data information systems Lack of monitoring of community-based sites Inadequate staff Electronic communication Manual systems Staff attrition Lack of personnel Data capturing Monitoring defaulters No additional resources Increased duties on available personnel Resource accommodation CCMDD implementation Inadequate personnel Extra burden Additional personnel	available personnel are carrying the extra burden Reference 1 - 5.73% Coverage The department expected available resources to accommodate CCMDD implementation. But there is inadequate personnel to accommodate the extra burden Reference 1 - 5.03% Coverage The department did not provide additional personnel and equipment to support the programme. It is dependent on NGO support for coordination and personnel training	and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses)

	Additional equipment NGO support Coordination and personnel training		
Knowledge based solutions for personnel	Patients clinical information Disease control, Medication type Compliance and adherence CCMDD monitoring systems Programme objectives comprehension Information on real benefits Difference from production introduction Dealing with challenges Growing numbers of patients Pressure on DoH Resources Longer waiting times Poor care quality Programme objectives Availability of SOPs Knowledge of surrounding collection sites	Reference 1 - 1.51% Coverage Patients clinical information in terms of Disease control, type of medication (whether can be dispensed from PUPs), compliance and adherence as well as CCMDD Monitoring Systems Reference 2 - 4.87% Coverage If staff understood the objectives of the program and were given information on the real benefits of the program. Shown the difference made by its introduction in their own facility and how to deal with challenges, which they are faced with it. Staff need to know that CCMDD is a really good program that is needed by our health department, as it cannot cope with the growing numbers of patients that present at the facilities daily. Hence long waiting times and poorer quality of care. However, the programme is only as good as the efforts we all put in to work. Reference 3 - 1.15% Coverage General understanding of the program objectives; availability of SOPs with exclusion lists; knowledge of surrounding--collection sites Reference 4 - 1.27% Coverage Knowledge and access to EMC; Availability of resources, knowledge at completing prescription forms, lists of available PUPs, Updated exclusion lists Reference 5 - 2.00% Coverage The knowledge on the guideline is sufficient in my opinion. What I can suggest is having regular periodic	Chief Director Public health specialist Chief Director Public health specialist Human Resources Manager Human Resources Manager Deputy Director—(Primary Health Care)

	Knowledge and access to EMC Resource availability Knowledge at completing prescription forms Lists of available PUPs Updated exclusion lists Knowledge on guidelines Staff periodic orientation Mentorship Feedback systems Central dispensing unit Service Provider Puck Up Points Knowledge of guidelines Regular periodic orientation to staff Consistent monitoring Mentorship Manifests with client lists Consolidation and referring facilities Updating on defaulters timeously	orientation to staff. Consistently monitor programme in and outside the facility for support. Mentorship support as required. Reference 1 - 1.28% Coverage Feedback systems between the health facility, the central dispensing unit Service Provider and the Pick-up Points; Reference 1 - 2.32% Coverage Knowledge on the guideline is sufficient in my opinion. What I can suggest is having regular periodic orientation to staff. Consistent monitoring of the programme in and outside the facility for support. Mentorship support as required. Reference 1 - 4.47% Coverage Private sector is supposed to send manifest to the CCMDD service provider with lists of all clients that collected from them for consolidation with referring facilities, not sure, if this is happening. Public and private sectors are supposed to be updating defaulters every 48 hours with the service providers Reference 2 - 4.94% Coverage Knowing which clients are eligible for enrolment Knowing the inclusion list so that rejections from the service provider are minimized Ensuring that correct return/ collection dates are given to the client Filling out the CCMDD prescription correctly and completely the first time Adhering to the standard treatment guidelines when prescribing Reference 1 - 2.75% Coverage Role clarification, programme benefits, inclusion in job descriptions, and incorporation of CCMDD activities into traditional organizational systems Reference 1 - 2.08% Coverage	Chief Director Public health specialist Deputy Director—(Primary Health Care) Policy Maker Policy Maker Deputy Manager—(Clinical Specialist Staff)

	Client eligibility Inclusion list Collection dates Filling out CCMDD prescriptions Role clarification Programme benefits Incorporation of CCMDD activities Traditional organizational systems Lack of data management resources DoH limited data access Chronic disease management Role clarification Information systems In-service training Role clarification Oversight functions	Lack of data management resources. The Department's is dependent on service provider data is a disadvantage Reference 2 - 2.12% Coverage Knowledge of importance of programme in chronic disease management. Role clarification for all relevant cadre Reference 1 - 0.93% Coverage data information systems Reference 2 - 5.53% Coverage In service training of how the programme is helping decongest the facility. Clear role clarification of oversight functions for community sites Reference 1 - 2.24% Coverage We need continuous reorientation because this programme is new. Reference 2 - 5.16% Coverage Those who were trained have left due to high staff attrition. We need to know why the service provider is not performing but not held accountable Reference 1 - 6.00% Coverage Information regarding which medicines are excluded from enrolment. Support from facilities with regards to monitoring of service provider performance Reference 1 - 4.45% Coverage Incorporation of CCMDD implementation activities in job descriptions, duty lists and employee performance agreements Reference 1 - 4.59% Coverage	Deputy Manager—(Clinical Specialist Staff) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses)

	Continuous re-orientation Programme is novel Staff changes and inventory Service Provider Performance metrics Information for accountability Information on medicines Monitoring of Service Provider performance CCMDD implementation activities Activities in job descriptions Duty lists Employee performance agreements Information of rejected scripts Information on parcel delivery CCMDD objectives and benefits Information of inclusion and exclusion criteria Patient enrolment Guidelines Operational challenges (parcel non-delivery)	Information of rejected scripts and reasons thereof. How to deal with uncollected parcels and non-delivery of parcels Reference 1 - 6.04% Coverage Reorientation on CCMDD objectives and benefits. Information of inclusion and exclusion criteria for patient enrolment. Guidelines on how to deal with daily challenges of non-delivery of parcels.	Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses) Frontline Managers and Clinicians (Pharmacists, Clinicians, Nurses)

Appendix 2 – Nvivo thematic analysis of initial problem mapping data

Nvivo thematic analysis of CCMDD program initial problem mapping data

PROBLEM THEMES	CODING	EXTRACTS	REFERENCE
Legislation and governance policy	Absence of guiding policy	Reference 1 - 0.32% Coverage Absence of guiding policy	
		Reference 2 - 2.01% Coverage	Policy Maker
	Lack of training Medicine handling Poor practices Medicine dispensing Community Sites	Lack of training and medicine handling skills at the community sites has contributed to the poor practice of lay people issuing medicine at community sites	Primary Healthcare Manager
		Reference 3 - 1.19% Coverage	
		The absence of policy to guide programme implementation has contributed to programme failure	Pharmacy Manager
	Absence of guiding policy Programme implementation Programme failure	Reference 4 - 1.77% Coverage	
		There is no overall control policy to guide implementation, monitoring and accountability for CCMDD. This has contributed to its failure	Deputy Director, Pharmacy
	Policy control Guideline Implementation, monitoring & accountability	Reference 5 - 0.54% Coverage	Assistant Pharmacy Manager
		There is no policy to guide implementation	
	Absence of guiding policy		
Organizational processes and procedures		Reference 1 - 0.32% Coverage CCMDD Contract management	
	Contract management	Reference 2 - 1.50% Coverage	Policy Maker
		Poor organizational processes for contract management have played a key role in for CCMDD failure at community sites	Policy Maker

	Poor Organization Contract management CCMDD failure Community sites Medicine storage skills Poor CCMDD contract management National and local level Service delivery at Community sites Inadequate organizational processes CCMDD contract management Poor service delivery Community sites Poor contract management Service provider performance Programme performance at sites Poor oversight Service provider performance Community Sites Poor CCMDD contract management Service provider Poor performance	Reference 3 - 0.39% Coverage Lack of medicine storage skill Reference 4 - 1.94% Coverage Poor CCMDD contract management organizational processes both at national and local level have contributed to poor service delivery at community sites Reference 5 - 1.67% Coverage Inadequate organizational processes of CCMDD contract management have contributed to poor service delivery at community sites Reference 6 - 1.80% Coverage Poor contract management for Service Provider's poor performance especially at community sites negatively impacted on programme performance Reference 7 - 1.10% Coverage There is poor oversight of Service Provider performance especially at community sites Reference 8 - 2.19% Coverage There is poor CCMDD contract management especially during the Service Provider transition phase. This has enabled the Service Provider to get away with poor performance. Reference 9 - 2.41% Coverage The Service Provider is not held accountable for poor services. For instance, erratic delivery of	Policy Maker Primary Health Care Manager Deputy Director Pharmacy Manager Deputy Director, Pharmacy Deputy Director, Clinical Services Assistant Pharmacy Manager

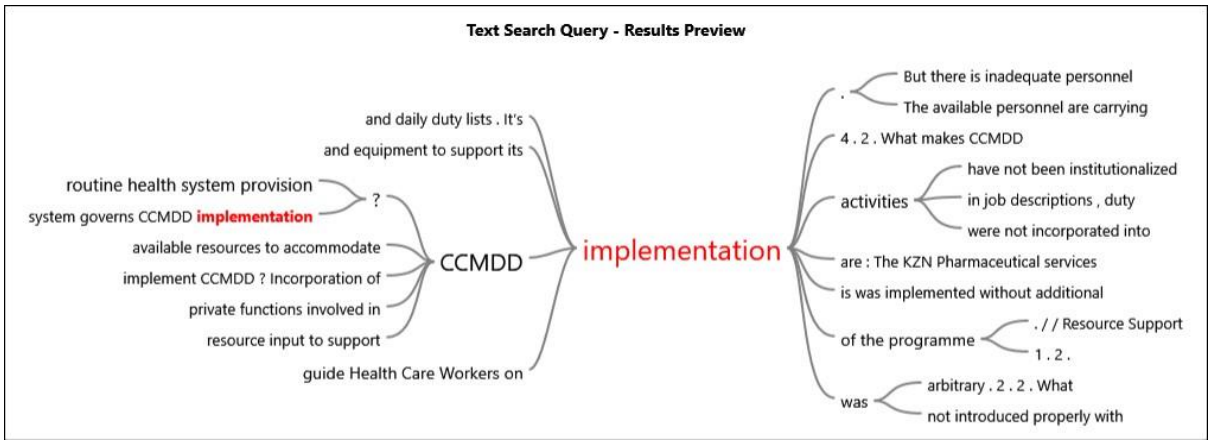
	Service provider Poor services Accountability Logistical problems	medicine parcels, issuing parcels to the wrong address or not delivering parcels at all	
Organizational environment		Reference 1 - 10.65% Coverage Wrong patient medicine parcel issued to the patient	
	Logistics problems	Reference 2 - 10.02% Coverage No accountability for issuing errors at PUP site	Assistant Pharmacy Manager
	No accountability	Reference 3 - 5.85% Coverage Poor supervision at PUP site	Deputy Director
	Poor supervision	Reference 4 - 7.31% Coverage Poor medicine storage at PUP sites	
	Poor medicine storage Community based (PUP) sites	Reference 1 - 0.40% Coverage Lack of human resource capacity	
	Human Resource capacity	Reference 2 - 1.55% Coverage Lack of guiding policy regarding programme implementation, and resource capacity have played key roles in CCMDD failure	Primary Health Care Manager
	Lack of guiding policy Programme implementation Resource capacity CCMDD failure	Reference 3 - 1.38% Coverage Lack of human resource has contributed to poor supervision of community sites especially at community sites	Primary Health Care Manager Pharmacy Manager
	Lack of human resources Poor supervision Community Sites	Reference 4 - 1.20% Coverage There is poor supervision of service at community sites due to lack of human resource capital	
		Reference 5 - 0.72% Coverage	Deputy Director Pharmacy

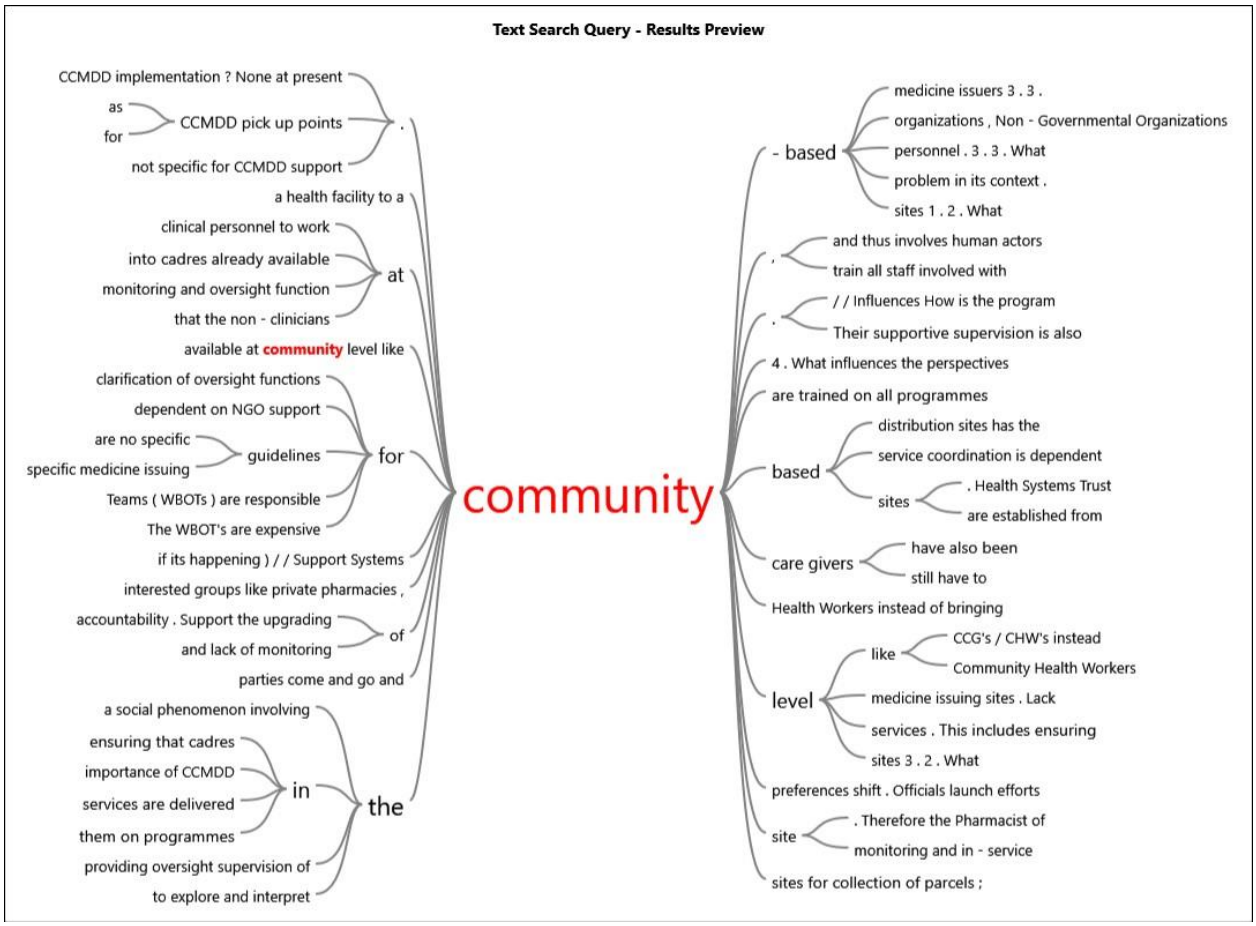
	Poor supervision Community Sites Lack of human resources No guidelines to specific CCMDD implementation Lack of human resources Effective monitoring Community Site performance	There are no guidelines specific to CCMDD implementation Reference 6 - 1.16% Coverage Lack of human resources does not permit effective monitoring of community site performance	Deputy Director, Clinical Services Assistant Pharmacy Manager
People and perspective issues	 CCMDD as a pharmacy issue Non-Clinicians Poor role clarification Stakeholders Information asymmetry NGOs and SP roles CCMDD implementation Role misconception Community based sites	Reference 1 - 6.68% Coverage CCMDD viewed as a pharmacy issue Reference 1 - 0.38% Coverage Utilization of non-clinicians Reference 2 - 1.99% Coverage Poor role clarification for all actors, for instance, personnel were not informed about the role of NGOs and service provider role in CCMDD implementation Reference 3 - 2.25% Coverage People do not understand their role in monitoring of the community-based sites. This has contributed in lack of accountability for CCMDD failure especially at community sites Reference 4 - 2.29% Coverage Personnel have poor understanding of their role with regards to implementation of	 Policy Maker Policy Maker Primary Health Care Manager Deputy Director

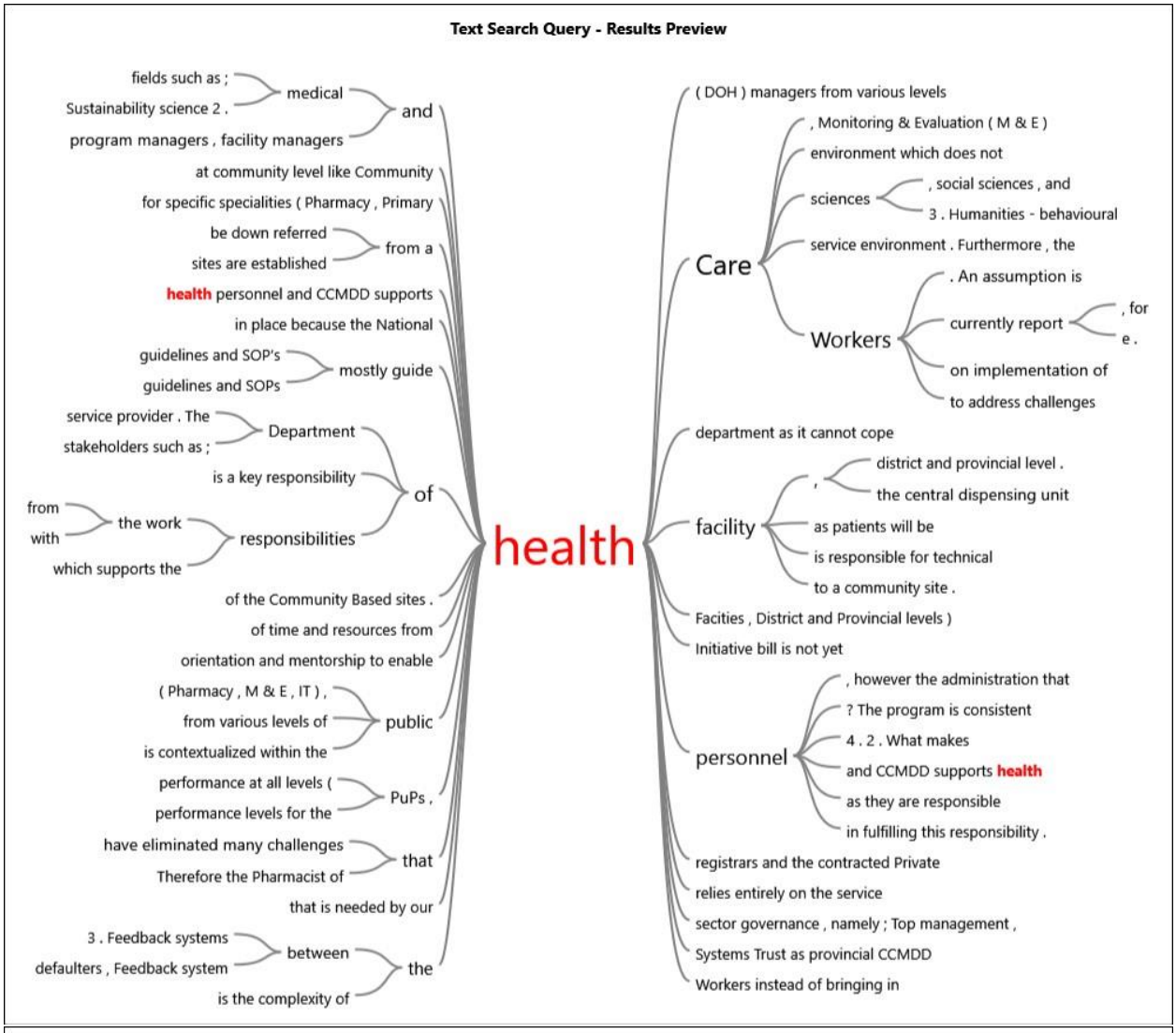
	Lack of accountability CCMDD failure Community Sites Poor role conception CCMDD implementation Negative impact Monitoring and accountability Programme performance Lack of training and medicine handling Community Sites Poor practices Non-clinicians (lay people) Lack of role clarification Implementation and monitoring No institutionalized systems Guiding work performance Accountability for CCMDD Job descriptions Performance assessments Lack of accountability CCMDD implementation failure Lack of training Service delivery at community sites	CCMDD. This has impacted negatively on monitoring and accountability for programme performance. Reference 5 - 2.01% Coverage Lack of training and medicine handling skills at the community sites has contributed to the poor practice of lay people issuing medicine at community sites Reference 6 - 0.97% Coverage There is lack of role clarification regarding implementation and monitoring Reference 7 - 3.08% Coverage There are no institutionalized systems for guiding work performance and accountability for CCMDD. For instance, job descriptions and performance assessments. This has contributed to lack of accountability for CCMDD implementation failure. Reference 8 - 1.05% Coverage Lay community medicine cannot be expected to be mini pharmacists without training Reference 9 - 1.46% Coverage There is poor role clarification regarding CCMDD implementation, supervision, data flow management and monitoring Reference 10 - 2.58% Coverage There is knowledge of the CCMDD programme and its multidisciplinary nature. Thus, personnel regard is a pharmacy	Primary Health Care Manager Pharmacy Manager Deputy Director, Pharmacy Pharmacy Manager Deputy Director, Clinical Services Assistant Pharmacy Manager Deputy Director, Clinical Services

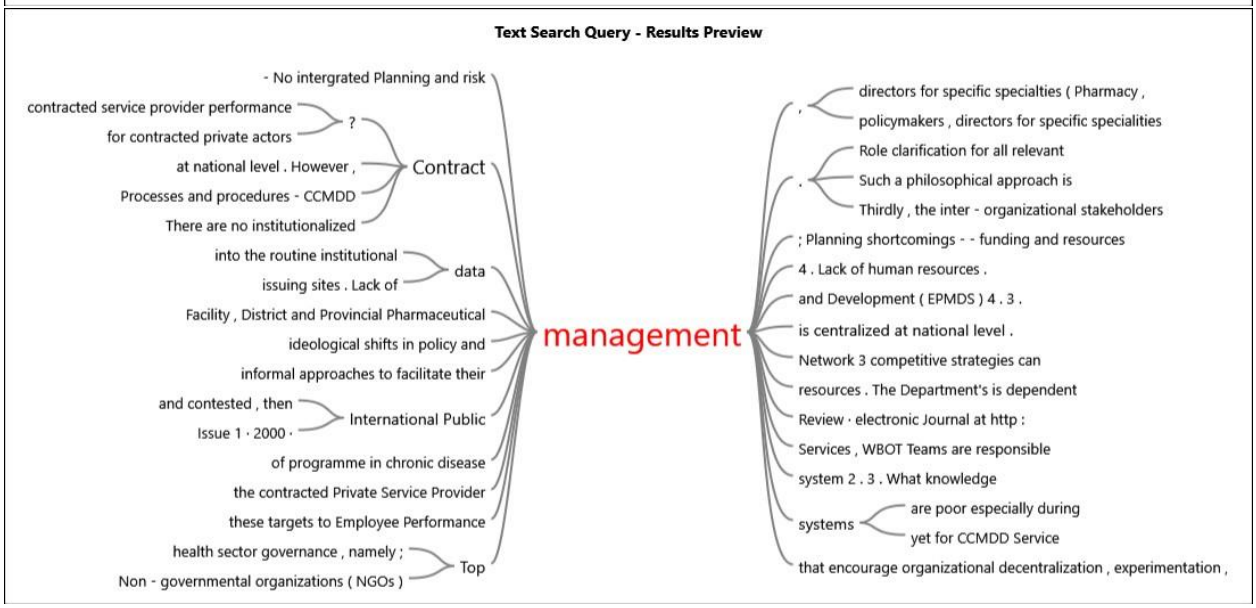
	Poor role clarification CCMDD implementation Supervision Data flow management and monitoring Lack of knowledge of CCMDD programme Multidisciplinary nature Pharmacy issue Lack of Ownership of programme Lack of accountability Community medicine issuers Medicine and counselling skills External dependency Community medicine issuers Personnel support systems	issue and distance themselves from it. This has contributed to lack of accountability. Reference 11 - 0.93% Coverage Community medicine issuers lack medicine issuing and counselling skills. Reference 12 - 1.01% Coverage The department is dependent on NGO support to train community medicine issuers	Assistant Pharmacy Manager

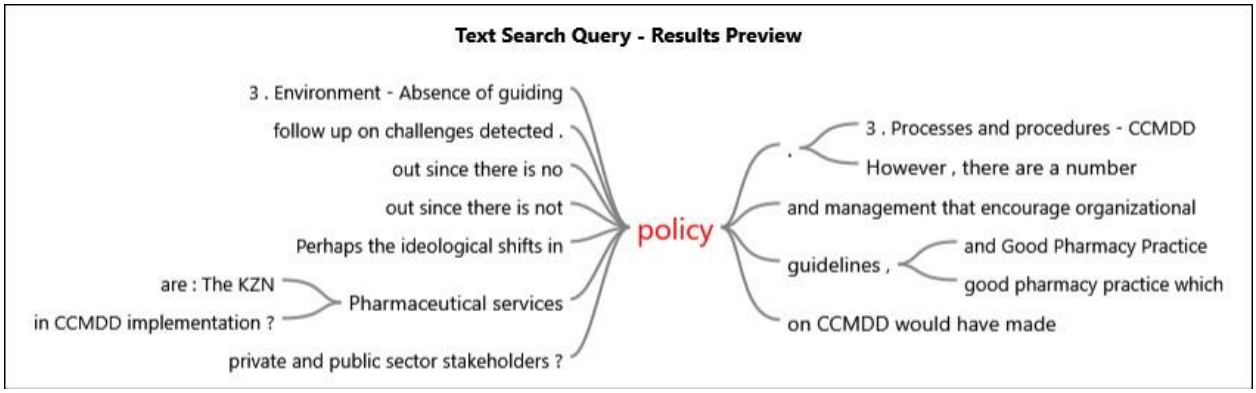
Appendix 2A - Nvivo micro-level coding word trees of key concepts of the study

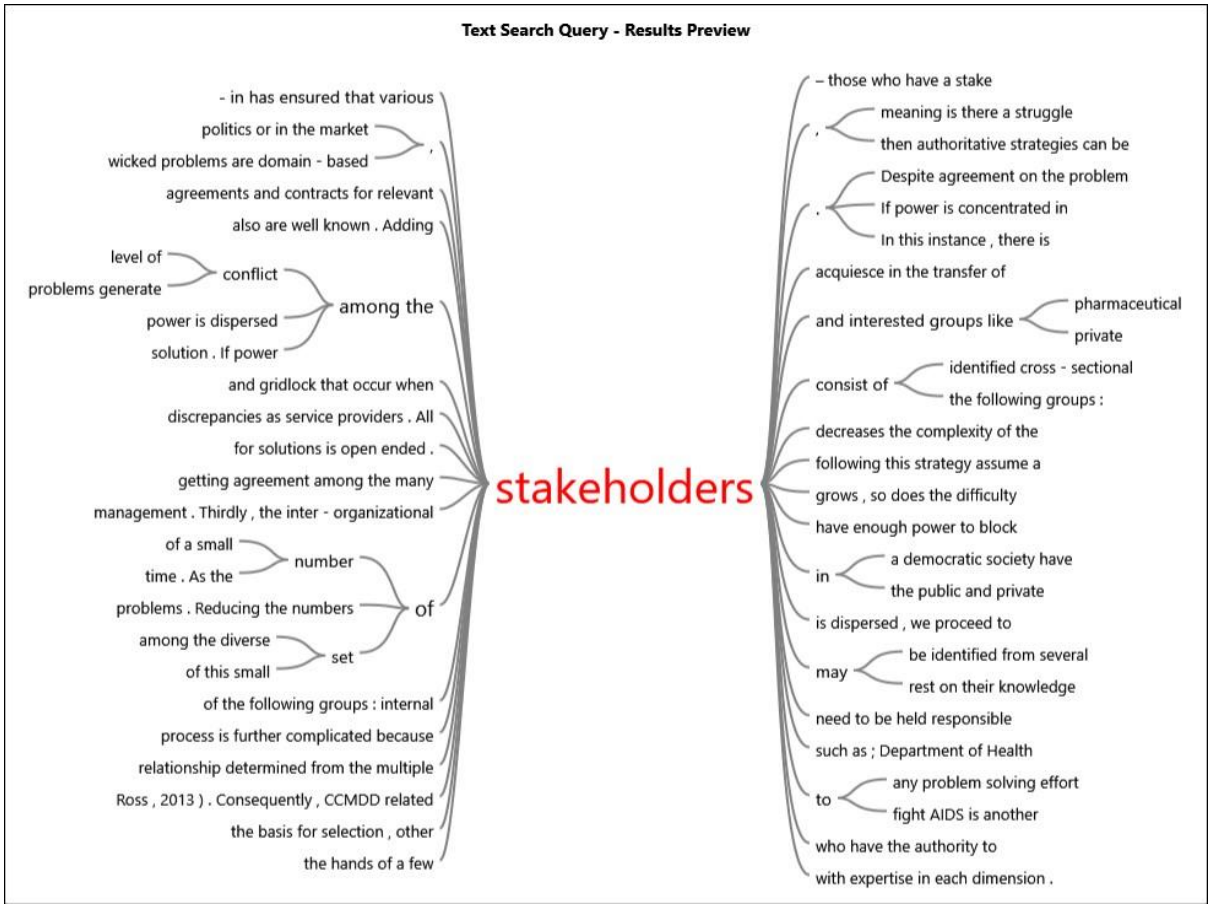


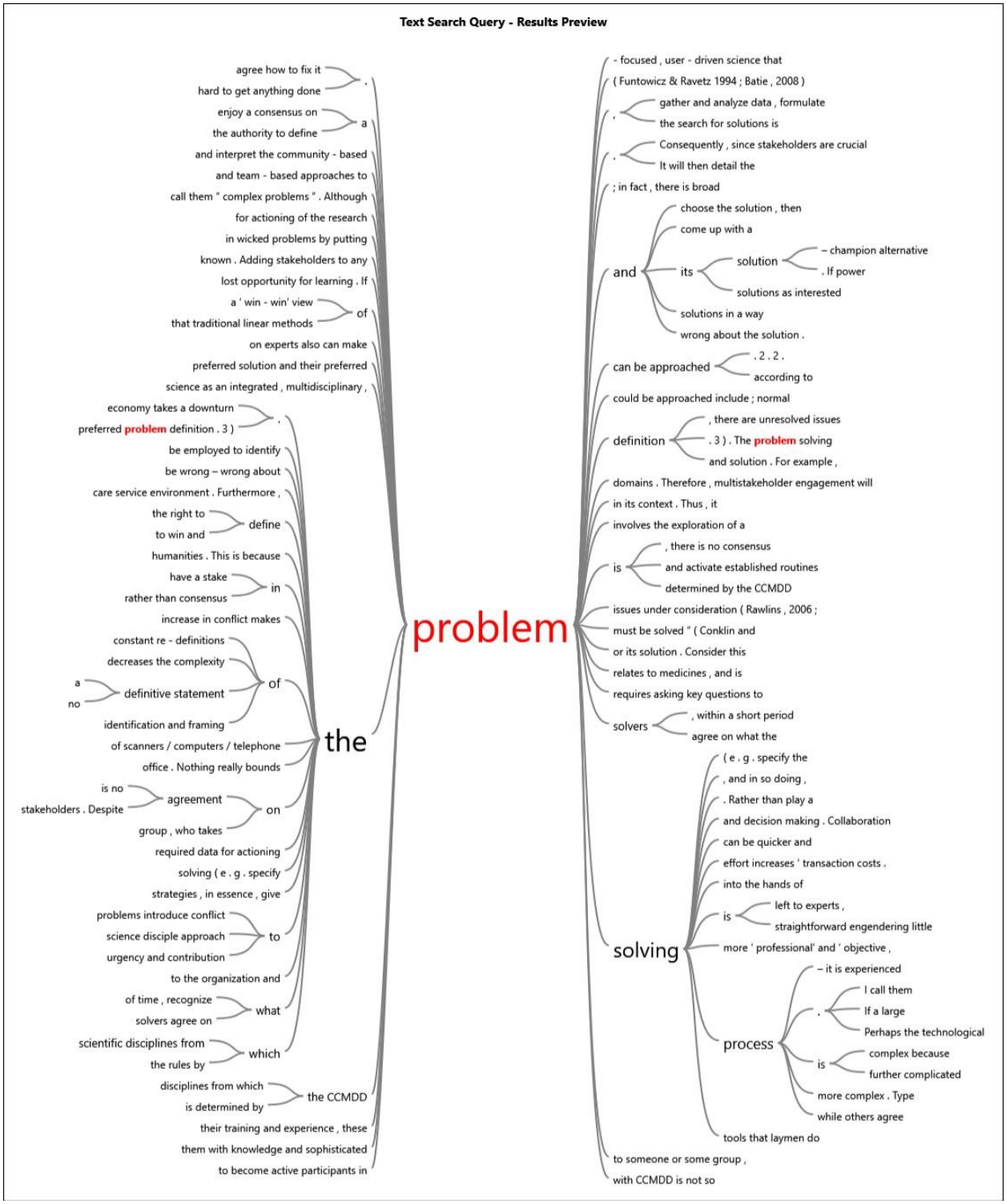



Text Search Query - Results Preview
health
(DOH) managers from various levels
, Monitoring & Evaluation (M & E)
environment which does not
sciences
, social sciences , and
3 . Humanities - behavioural
service environment . Furthermore , the
Care
. An assumption is
currently report
, for
e .
Workers
on implementation of
to address challenges
department as it cannot cope
,
district and provincial level .
the central dispensing unit
facility
as patients will be
is responsible for technical
to a community site .
Facities , District and Provincial levels)
Initiative bill is not yet
, however the administration that
? The program is consistent
4 . 2 . What makes
and CCMDD supports health
as they are responsible
in fulfilling this responsibility .
personnel
registrars and the contracted Private
relies entirely on the service
sector governance , namely ; Top management ,
Systems Trust as provincial CCMDD
Workers instead of bringing in
fields such as ;
Sustainability science 2 .
medical
program managers , facility managers
and
at community level like Community
for specific specialities (Pharmacy , Primary
be down referred
from a
sites are established
health personnel and CCMDD supports
in place because the National
guidelines and SOP's
mostly guide
guidelines and SOPs
service provider . The
Department
stakeholders such as ;
is a key responsibility
of
from
with
the work
responsibilities
which supports the
of the Community Based sites .
of time and resources from
orientation and mentorship to enable
(Pharmacy , M & E , IT) ,
from various levels of
public
is contextualized within the
performance at all levels (
PuPs ,
performance levels for the
have eliminated many challenges
that
Therefore the Pharmacist of
that is needed by our
3 . Feedback systems
between
defaulters , Feedback system
the
is the complexity of


Text Search Query - Results Preview
management
- No intergrated Planning and risk
contracted service provider performance
?
for contracted private actors
at national level . However ,
Contract
Processes and procedures - CCMDD
There are no institutionalized
into the routine institutional
data
issuing sites . Lack of
Facility , District and Provincial Pharmaceutical
ideological shifts in policy and
informal approaches to facilitate their
and contested , then
International Public
Issue 1 · 2000 ·
of programme in chronic disease
the contracted Private Service Provider
these targets to Employee Performance
health sector governance , namely ;
Top
Non - governmental organizations (NGOs)
,
directors for specific specialties (Pharmacy ,
policymakers , directors for specific specialities
.
Role clarification for all relevant
Such a philosophical approach is
Thirdly , the inter - organizational stakeholders
; Planning shortcomings - - funding and resources
4 . Lack of human resources .
and Development (EPMDS) 4 . 3 .
is centralized at national level .
Network 3 competitive strategies can
resources . The Department's is dependent
Review · electronic Journal at http :
Services , WBOT Teams are responsible
system 2 . 3 . What knowledge
systems
are poor especially during
yet for CCMDD Service
that encourage organizational decentralization , experimentation ,


Text Search Query - Results Preview
3 . Environment - Absence of guiding
follow up on challenges detected .
out since there is no
out since there is not
Perhaps the ideological shifts in
are : The KZN
in CCMDD implementation ?
Pharmaceutical services
private and public sector stakeholders ?
policy
.
3 . Processes and procedures - CCMDD
However , there are a number
and management that encourage organizational
guidelines ,
and Good Pharmacy Practice
good pharmacy practice which
on CCMDD would have made


Text Search Query - Results Preview
- in has ensured that various
politics or in the market
wicked problems are domain - based
,
agreements and contracts for relevant
also are well known . Adding
level of
problems generate
conflict
power is dispersed
solution . If power
among the
and gridlock that occur when
discrepancies as service providers . All
for solutions is open ended .
getting agreement among the many
management . Thirdly , the inter - organizational
of a small
time . As the
number
problems . Reducing the numbers
among the diverse
of this small
set
of
of the following groups : internal
process is further complicated because
relationship determined from the multiple
Ross , 2013) . Consequently , CCMDD related
the basis for selection , other
the hands of a few
stakeholders
– those who have a stake
,
meaning is there a struggle
then authoritative strategies can be
.
Despite agreement on the problem
If power is concentrated in
In this instance , there is
acquiesce in the transfer of
and interested groups like
pharmaceutical
private
consist of
identified cross - sectional
the following groups :
decreases the complexity of the
following this strategy assume a
grows , so does the difficulty
have enough power to block
in
a democratic society have
the public and private
is dispersed , we proceed to
may
be identified from several
rest on their knowledge
need to be held responsible
such as ; Department of Health
to
any problem solving effort
fight AIDS is another
who have the authority to
with expertise in each dimension .


Text Search Query - Results Preview
problem
the
agree how to fix it
hard to get anything done
.
enjoy a consensus on
the authority to define
a
and interpret the community - based
and team - based approaches to
call them " complex problems " . Although
for actioning of the research
in wicked problems by putting
known . Adding stakeholders to any
lost opportunity for learning . If
a ' win - win' view
that traditional linear methods
of
on experts also can make
preferred solution and their preferred
science as an integrated , multidisciplinary ,
economy takes a downturn
preferred problem definition . 3)
,
be employed to identify
be wrong – wrong about
care service environment . Furthermore ,
the right to
to win and
define
humanities . This is because
have a stake
rather than consensus
in
increase in conflict makes
constant re - definitions
decreases the complexity
a
no
definitive statement
identification and framing
of
of scanners / computers / telephone
office . Nothing really bounds
is no
stakeholders . Despite
agreement
group , who takes
on
required data for actioning
solving (e . g . specify
strategies , in essence , give
problems introduce conflict
science disciple approach
urgency and contribution
to
to the organization and
of time , recognize
solvers agree on
what
scientific disciplines from
the rules by
which
disciplines from which
is determined by
the CCMDD
their training and experience , these
them with knowledge and sophisticated
to become active participants in
- focused , user - driven science that
(Funtowicz & Ravetz 1994 ; Batie , 2008)
,
gather and analyze data , formulate
the search for solutions is
.
Consequently , since stakeholders are crucial
It will then detail the
; in fact , there is broad
and
choose the solution , then
come up with a
its
solution
– champion alternative
. If power
solutions as interested
solutions in a way
wrong about the solution .
can be approached
. 2 . 2 .
according to
could be approached include ; normal
definition
, there are unresolved issues
. 3) . The problem solving
and solution . For example ,
domains . Therefore , multistakeholder engagement will
in its context . Thus , it
involves the exploration of a
is
, there is no consensus
and activate established routines
determined by the CCMDD
issues under consideration (Rawlins , 2006 ;
must be solved " (Conklin and
or its solution . Consider this
relates to medicines , and is
requires asking key questions to
solvers
, within a short period
agree on what the
solving
(e . g . specify the
, and in so doing ,
. Rather than play a
and decision making . Collaboration
can be quicker and
effort increases ' transaction costs .
into the hands of
is
left to experts ,
straightforward engendering little
more ' professional' and ' objective ,
process
– it is experienced
.
I call them
If a large
Perhaps the technological
is
complex because
further complicated
more complex . Type
while others agree
tools that laymen do
to someone or some group ,
with CCMDD is not so

<Files\\OTHER DOCUMENTS\\175-349-1-SM> - § 4 references coded [0.61% Coverage]

Reference 1 - 0.11% Coverage

Type 3 problems engender a high level of conflict among the stakeholders. In this instance, there is no agreement on the problem or its solution

Reference 2 - 0.17% Coverage

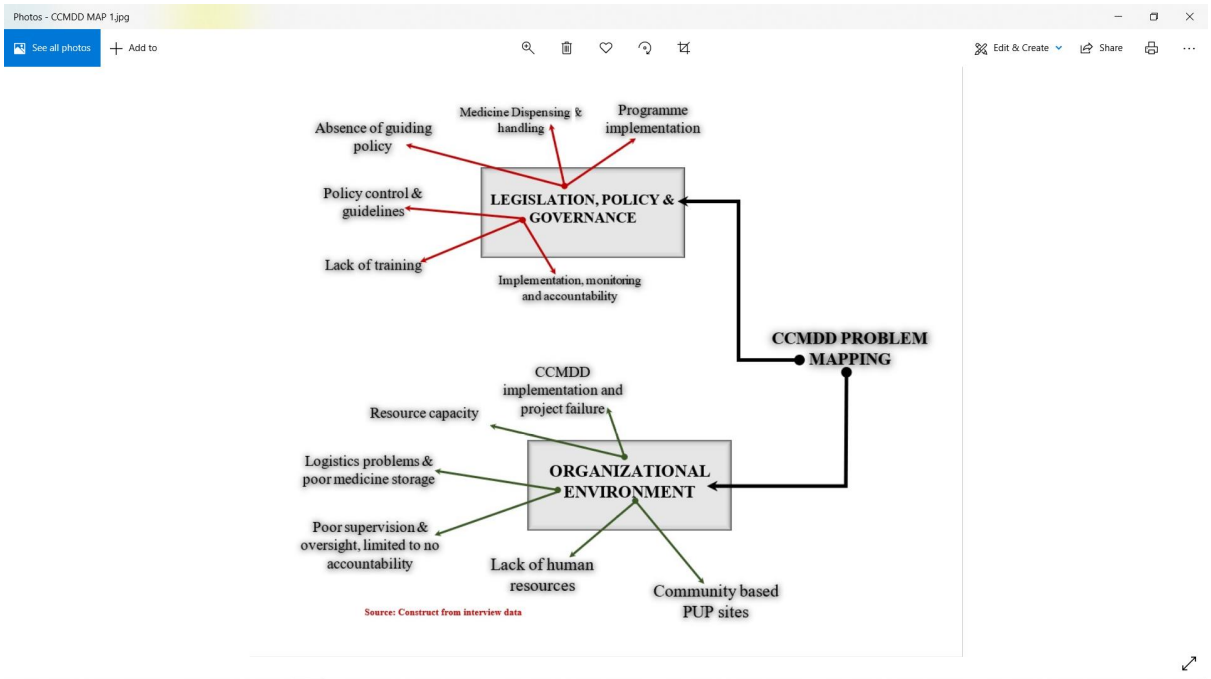
Attempts to address 'the problem' accomplish little. Political and resource constraints force constant re-definitions of the problem and its solutions as interested parties come and go and community preferences shift.

Reference 3 - 0.20% Coverage

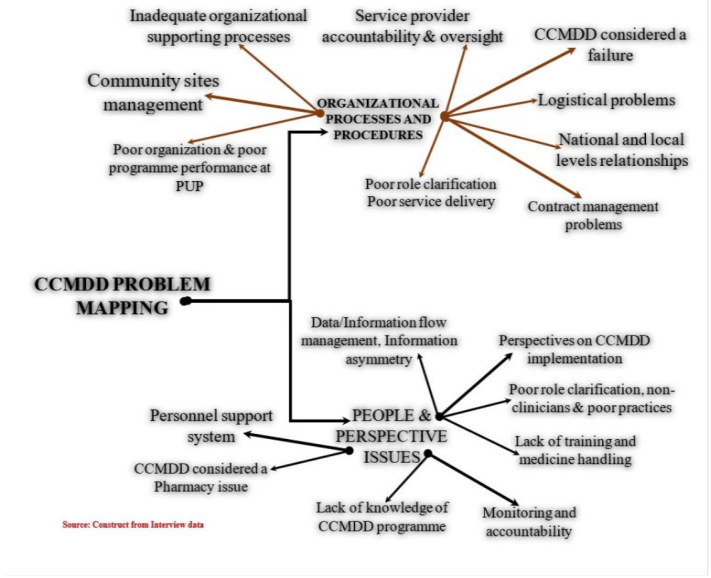
The problem solving process is further complicated because stakeholders in a democratic society have the power to block initiatives not of their liking through lawsuits, judicial reviews, and the time-honored tradition of throwing the 'rascals' out of office.

Reference 4 - 0.13% Coverage

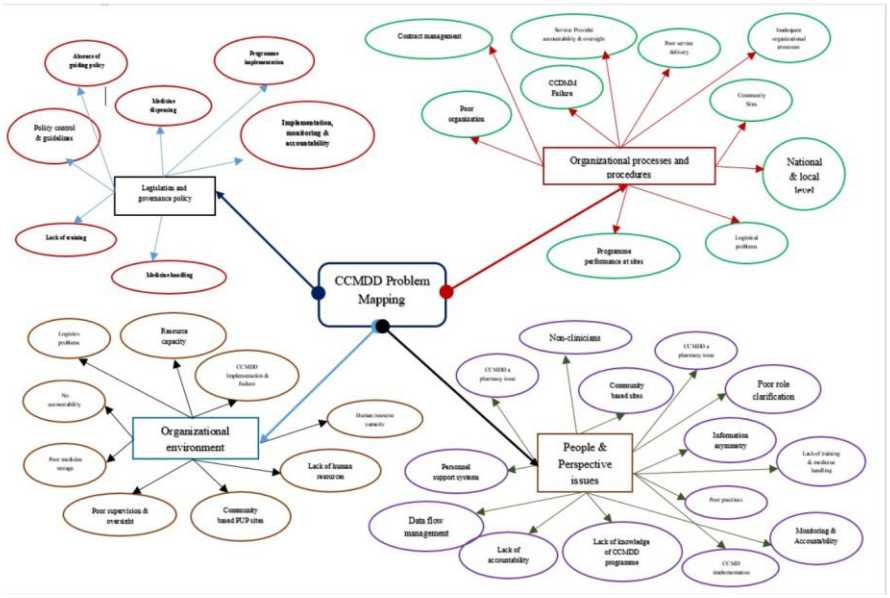
Nothing really bounds the problem solving process – it is experienced as ambiguous, fluid, complex, political, and frustrating as hell. In short, it is wicked.

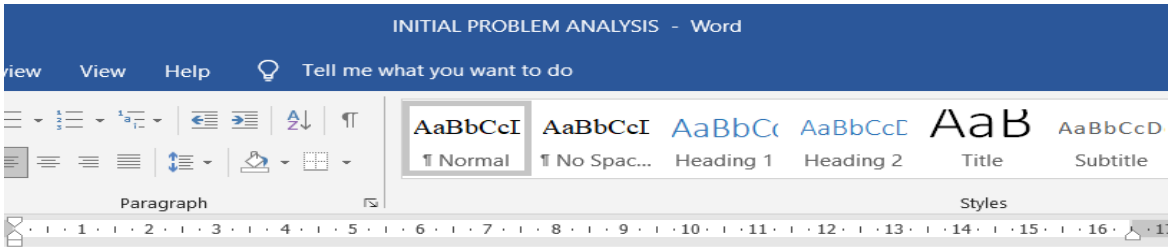


Photos - CCMDD MAP 2.jpg



Photos - CCMDD Initial Problem Mapping.jpg





INITIAL PROBLEM ANALYSIS CODING FROM KEY CONCEPTS

PROBLEM THEMES	CODING	EXTRACTS	REFERENCE
Legislation and governance policy	Absence of guiding policy	<Files\\problem MAPPING DATA> - § 5 references coded [5.84% Coverage] Reference 1 - 0.32% Coverage Absence of guiding policy	Policy Maker
	Lack of training Medicine handling Poor practices Medicine dispensing Community Sites	Reference 2 - 2.01% Coverage Lack of training and medicine handling skills at the community sites has contributed to the poor practice of lay people issuing medicine at community sites	Primary Healthcare Manager
	Absence of guiding policy Programme implementation Programme failure	Reference 3 - 1.19% Coverage The absence of policy to guide programme implementation has contributed to programme failure	Pharmacy Manager
	Policy control Guideline Implementation, monitoring & accountability	Reference 4 - 1.77% Coverage There is no overall control policy to guide implementation, monitoring and accountability for CCMDD. This has contributed to its failure	Deputy Director, Pharmacy
	Absence of guiding policy	Reference 5 - 0.54% Coverage There is no policy to guide implementation	Assistant Pharmacy Manager
Organizational processes and procedures	Contract management	<Files\\problem MAPPING DATA> - § 9 references coded [13.32% Coverage] Reference 1 - 0.32% Coverage CCMDD Contract management	Policy Maker
	Poor Organization Contract management CCMDD failure Community sites	Reference 2 - 1.50% Coverage Poor organizational processes for contract management have played a key role in for CCMDD failure at community sites	Policy Maker
	Medicine storage skills	Reference 3 - 0.39% Coverage Lack of medicine storage skill	Policy Maker
		Reference 4 - 1.94% Coverage	

Appendix 3 – Participant consent form

UNIVERSITY OF LIVERPOOL

Committee on Research Ethics

PARTICIPANT CONSENT FORM

Title of Research Project:	Exploring the Issues Behind Centralised Chronic Medicine Distribution and Dispensing (CCMDD) Program Failure to Provide Access to Chronic Medicines in eThekwini, South Africa
Researcher(s):	**Student:** Bonginkosi Mkhize (H00035861) **Supervisor:** Dr. David Fogarty

	Please initial box
1. I confirm that I have read and have understood the information sheet dated for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.	☐
3. I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish.	☐
4. I agree to take part in the above study.	☐
5. I understand that the information I have submitted will be published as a report and I will be able to obtain a copy from the password protected departmental intranet website.	☐
6. I understand that confidentiality and anonymity will be maintained, and it will not be possible to identify me in any publications.	☐
7. I understand and agree that my participation will be audio recorded and I am aware of and consent to your use of these recordings for authenticity maintenance during research data analysis and reporting.	☐

8. I understand that I must not take part if I no longer want to be a participant. ☐

9. I agree for the data collected from me to be used in relevant future research ☐

10. I understand that my responses will be kept strictly confidential. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. ☐

11. I understand and agree that once I submit my data it will become anonymised and I will therefore no longer be able to withdraw my data. ☐

Participant Name	Date	Signature
Name of Person taking consent	Date	Signature
Researcher	Date	Signature

Supervisor
Name: Dr. David Fogarty
Work Address: University of Liverpool
Work Telephone:
Work Email: david.fogarty@online.liverpool.ac.uk

Student Researcher:
Name: Bonginkosi Mkhize
Work Address: Department of Health
Work Telephone: +27 312405369
Work Email: Bongi.Mkhize@kznhealth.gov.za

Appendix 4 – Interview guiding questions.

Research Title: Exploring the Issues Behind Centralized Chronic Medicine Distribution and Dispensing (CCMDD) Program Failure to Provide Access to Chronic Medicines in eThekwini, South Africa

1. Overall Executive Control of CCMDD implementation

1.1. What control measures are there to coordinate public and private sector functions involved in CCMDD implementation?

1.2. What kinds of resource support or lack thereof have contributed to the outcomes of CCMDD? (for instance, infrastructure, human resource)

2. Overall CCMDD Implementation Accountability for private, public sector and Non-Governmental stakeholders

2.1. What measures are there to ensure accountability for the private, public sector and Non-Governmental stakeholders?

2.2. What organizational systems are there to ensure contracted service provider performance?

3. Human resource management support systems for CCMDD implementation at community sites

3.1. What is the rationale behind utilization of non-clinicians at community-based medicine distribution sites?

3.2. What guides the practice of non-clinicians at community-based sites?

3.3. What kind of support is there, in terms of training or technical assistance, for non-clinical personnel to implement the CCMDD program at community sites?

4. Personnel perspectives with regards to CCMDD implementation

4.1. How is the program consistent with or detracting from the work responsibilities of health personnel?

4.2. What makes CCMDD implementation incompatible with routine health system provision?

4.3. What knowledge would make it less problematic for personnel to enrol patients to CCMDD?