THE SUSTAINIBILITY OF THE ELIMINATION OF THE MOTHER-TO-CHILD HIV TRANSMISSION (eMTCT) PROGRAM IN THE EASTERN CAPE: QUALITY IMPROVEMENT TEAM'S PERSCEPTION

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Abstract

Background: The sustainability of the elimination of the Mother to Child HIV transmission (eMTCT) programme has decreased worldwide. The President's Emergency Plan for AIDS Relief (PEPFAR), and other collaborators engaged in the eMTCT program are faced with challenges in the implementation of programs or interventions that can cause a threat to program sustainability. The eMTCT interventions are beneficial to patients and their families and can contribute towards improvement and sustainable health outcomes. Sustainability of these interventions following the departure of the partners remains a concern. The purpose of this study was to explore the quality improvement team`s perception of the sustainability of the eMTCT Quality Improvement Collaborative(QIC) program implemented in the Mnquma sub-district in the Eastern Cape Province of South Africa using a quality improvement collaborative approach.

Methods: A qualitative research methodology with a descriptive exploratory design was utilized in order to explore and describe the quality improvement team perceptions on the sustainability of the eMTCT QIC program. A purposive sampling method was used during participant selection from the 14 health clinics where the eMTCT QIC program was implemented. Two focus group discussions were conducted, one with four and the other with nine participants and also three individual interviews. A semi structured interview guide was used for both focus group discussions and the individual interviews. The interviews were audio taped and transcribed. Colaizzi`s method was applied during the data analysis.

Results: The four themes that emerged from the data analysis were: Appreciating the QIC design; Program empowerment; Community influences and Development challenges to program sustainability. The participants became more resourceful following a good understanding of the quality improvement collaborative program. Emerging innovativeness enabled the participants to be excited about the quality improvement model and take ownership of the process and progress made during and after implementation of the QIC program. However, there are still gaps in the care and access to the management of the eMTCT program that still needs to be addressed. The participants overall views were that the eMTCT QIC program will continue to ‘holding the gains’.

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Conclusion: Planning for sustainability is very important from the beginning of any new intervention. Organisations must clarify what is going to be sustained. The involvement and collaboration from all stakeholders, especially community involvement, according to the researcher is vital for program sustainability. In conclusion, leadership buy-in, teamwork, communication and feedback, regular data management, staff support, motivation and acknowledgement may lead to continuous improvement.

Key words: Collaborative, quality improvement, sustainability, health care worker, eMTCT, PMTCT.

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Opsomming

Agtergrond: Die volhoubaarheid van die eMTCT program het wêreldwyd gedaal. Die President se Noodplan vir Vigsverligting (PEPFAR) en ander medewerkers, het saamgestaan om die oordrag vanaf Moeder- na - Kind te elimineer (eMTCT), maar daar is steeds uitdagings met die implementering van programme of ingrypings wat 'n bedreiging is vir die volhoubaarheid van die program. Die eMTCT intervensies is voordelig vir pasiënte en hul gesinne. Volhoubaarheid van hierdie ingrypings na die vertrek van die vennote bly 'n bron van kommer. Die doel van hierdie studie was om die gehalte verbeterings span se persepsies van volhoubaarheid van die eMTCT QIC program wat in die Mnquma subdistrik, Oos Kaap provinsie van Suid-Afrika geïmplementeer is, te ondersoek.

Metodes: 'n Kwalitatiewe navorsings metodologie met 'n beskrywende verkennende ontwerp is gebruik om die gesondheidswerkers se persepsies oor die volhoubaarheid van die eMTCT QIC program te ondersoek. 'n Doelgerigte steekproef metode is gebruik tydens die deelname van die 14 gesondheidsklinieke waar die eMTCT QIC program geïmplementeer is. Daar was twee fokusgroep besprekings met vier en die ander met nege deelnemers. Verder is drie individuele in-diepte onderhoude gevoer. 'n Onderhoudsgids is gebruik vir beide fokusgroep besprekings en die in-diepte onderhoude. Die onderhoude was opgeneem met klankopnemers en getransskribeer. Colaizzi se metode is toegepas in die data analise.

Resultate: Vier temas wat uit die data analise na vore gekom het was: Die waardering van die gehalte verbeterings benadering ontwerp; Program bemagtiging; Gemeenskapsinvloede en Ontwikkelingspunte vir volhoubaarheid van die program. Die deelnemers het meer vindingryk geraak aangesien hulle die program ontwerp beter verstaan het. Opkomende innovering het die deelnemers in staat gestel om meer opgewonde te wees oor die program ontwerp en eienaarskap te neem van die proses en vordering wat gemaak is gedurende die implementering van die eMTCT program. Daar is egter steeds tekortkominge in die sorg en toegang tot die bestuur van die

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eMTCT program wat aangespreek moet word. Deelnemers se algemene siening was dat die eMTCT QIC program sal voortgaan om die “Winste te behou”.

Gevolgtrekking: Beplanning vir volhoubaarheid is baie belangrik vanaf die begin van enige nuwe ingryping. Organisasies moet seker wees oor wat volhoubaarnis moet wees. Die betrokkenheid en samewerking van alle belanghebbendes, veral gemeenskaps - betrokkenheid, volgens die navorser, is noodsaaklik vir program volhoubaarheid.Leierskap ondersteuning, spanwerk, kommunikasie en terugvoering, gereelde data bestuur, personeel ondersteuning, motivering en erkenning mag lei tot deurlopende verbetering.

Sleutelwoorde: Samewerkende, kwaliteitverbetering, volhoubaarheid, gesondheid-sorgwerker, eMTCT, PMTCT.

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ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AP	Action Period
ART	Antiretroviral Therapy
CHWs	Community Health Workers
EBF	Exclusive Breastfeeding
EC	Eastern Cape
eMTCT	Elimination of Mother-to-Child Transmission of HIV
HCWs	Health care workers
HIV	Human Immunodeficiency Virus
IHI	Institute for Healthcare Improvement
MDGs	Millennium Development Goals
NDoH	National Department of Health
PEPFAR	President's Emergency Plan for AIDS Relief
PMTCT	Prevention of Mother-to-Child Transmission of HIV
QI	Quality Improvement
QIC	Quality Improvement Collaborative
S2S	South to South
SDGs	Sustainability Development Goals
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/Acquired Immune Deficiency
WHO	World Health Organisation

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1. CHAPTER ONE
SCIENTIFIC FOUNDATION OF THE STUDY

1.1. Introduction

Non-governmental organisations and funders are concern about the sustainability of the implementation of the eMTCT programme. Therefore, non-sustainability occurs when they leave the site of implementation. The Sustainability Guide by the National Health Service Institute for Innovation and Health Improvement defines sustainability as "new ways of working where improved outcomes becomes a norm". Sustainability also means holding the gains, evolving as required, and not going back to old ways (Institute for Innovation and Improvement, 2005). Chi, Adler, Bolu, Mbori-Ngacha, Ekouevi, Gieselman, Chipato, Luo, Phelps, McClure & Mofenson (2012:60) asserts that, the United States President's Emergency Plan for AIDS Relief (PEPFAR), and other collaborators are engaged in the elimination mother-to-child transmission (eMTCT). However, there are challenges and opportunities in the implementation of the programs and evaluation shows challenges in the sustainability of these programmes after the partners leave. Sherr, Gimbel, Rustagi, Nduati, Cuembelo, Farquhar, Wasserheit & Gloyd (2014:5) also stated that despite the challenges experienced in the prevention of mother-to-child HIV prevention programs (PMTCT), some services improved over time. However, even with the improvement there were challenges to achieve 100% PMTCT coverage and access. Bhardwaj, Carter, Aarons, & Chi, (2015:246-255) emphasised the importance of having data-driven quality improvement processes at a national level in order to improve the performance of the PMTCT programs at local level.

Despite extensive scale up of Human Immunodeficiency Virus (HIV) and Tuberculosis (TB) services, many women and children in South Africa are not receiving the complete packages of prevention and treatment services they need. The Millennium Development Goals (MGDs) report of 2015 stated that after 15 years, there were achievements and challenges in reaching these goals. In this report, the global under-five mortality rate (MDG 4) declined by 2015 with more than half dropping from 90 to 43 deaths per 1.000 live births (UNAIDS, 2015).

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Further, it is stated in this report that the annual reduction rate of under-five mortality rate in sub-Saharan Africa, was over five times faster in 2005 to 2013 than it was during 1990 to 1995. The maternal mortality rate (MDG 5) has worldwide declined by 45% and sub-Saharan Africa with 49% (UNAIDS, 2015). The PMTCT services have expanded over the past 15 years with new HIV infections among children declining by 58%, but still remaining a challenge to achieve the goals of eliminating new HIV infections amongst children and ensuring universal access to treatment (Prendergast, Essajee & Penazatto, 2015:48-52).

In September 2015, members of 193 countries adopted the United Nations Sustainable Development Goals (SDGs) plan to define a path for the next 15 years. The expectation is that all stakeholders have a collaborative action to reach sustainability of all programs (United Nations Global Compact, 2015). Target one of the UNAIDS 2016–2021 strategy is to fast track 90% of people living with HIV to know their HIV status; 90% of people living with HIV who know their status to receive antiretroviral treatment; and lastly, 90% of people on HIV treatment have suppressed viral loads. This would require not only implementing programs but also following through on the implementation by ensuring that these programs for testing and treating are of high quality and sustainable.

Although South Africa, according to the 2015 Progress Report on the Global Plan, has made the greatest progress by reducing the new HIV infection rate amongst children by 76% since 2009, there is a need to address various sectors of the health system to ensure continued and sustained improvements in healthcare (UNAIDS, 2015).

The purpose of this research was to explore and decribe how the quality improvement team perceive the sustainability of the Quality Improvement Collaborative (QIC) program in eMTCT by sharing the barriers and benefits during S2S program implementation. S2S was funded through PEPFAR to assist the Mnquma sub-district to eliminate the transmission of mother to child HIV transmission by using a quality improvement collaborative approach program. A quality improvement collaborative approach program is a shared learning network where people meet and work together to achieve improvement in a specific healthcare program. The main goal is to improve maternal and child h HIV/TB health outcomes in Mnquma sub-district. A further discussion about the S2S eMTCT QIC program will be discussed later in the chapter.

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1.2. Background

The background provides an overview of the HIV and AIDS epidemic globally, Sub-Saharan Africa and South Africa. It also provides a summary of the latest South Africa National Antenatal Sentinel HIV prevalence. South Africa showed great improvement in reaching the MDGs by 2015; therefore, a short description is given of the current PMTCT Program in South Africa. Lastly, a short overview of the history of quality improvement collaborative programs including an overview of S2S eMTCT QIC program.

1.3. Global overview of HIV/AIDS

According to the latest UNAIDS (Joint United Nations Programme on HIV) Fact Sheet Report of June 2017, since the beginning of the HIV/AIDS epidemic, more than 76.1 million people have become infected vir HIV. Globally, 36.7 million people were living with HIV in 2016 and 20.9% of people who were living with HIV were accessing antiretroviral therapy. Further, by the end of 2015, 77% of pregnant women living with HIV had access to antiretroviral medicines to prevent the transmission of HIV from mothers to their babies (UNAIDS, 2016).

The new HIV infections worldwide in 2016, were 1.8 million people newly infected with the HIV virus. Children became newly infected with HIV was 160 000 in 2016 and declined by 47% since 2010 (UNAIDS, 2016).

This report also stated that 35 million people died from AIDS-related illnesses since the start of the HIV epidemic. People who died of AIDS-related illnesses worldwide in 2015 were 1.0 million, but the peak of AIDS-related deaths has fallen by 48% since the peak in 2005 (UNAIDS, 2016).

1.3.1. Sub-Saharan Africa HIV/AIDS statistics

The most affected region of people living with HIV worldwide is in sub-Sahara Africa (also called Eastern and Southern Africa) which account 70% of people living with the HIV burden in the world. UNAIDS Fact Sheet Report (June, 2017) stated that there were 19.4 million people living with HIV in eastern and southern Africa. In this region, women and girls account for more than half (59%) of people living with HIV. In this region, 11.7% of people living with HIV and AIDS were accessing antiretroviral therapy in 2016 (UNAIDS, 2017).

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The new infection rate in sub-Sahara Africa in 2016, was an estimated 790 000 people infected with the HIV virus and has declined by 29% between 2010 and 2016. Sub-Saharan Africa accounts for 43% of the global total of new HIV-infections. The new HIV-infections among children in 2016 was 77 000 children but there has been 56% decline since 2010. More than 420, 000 people died of AIDS-related illnesses in 2016, but the number of deaths fell by 42%.

South Africa has the largest HIV epidemic in the world with 19% of people globally living with HIV. There were 7.1 million people living with HIV in South Africa in 2016 and 56 % of those people living with HIV were accessing antiretroviral therapy. The total new HIV infections in 2016 were 270 000 people and 110 000 AIDS - related deaths were reported in South Africa. This report also stated that more than 95% of women living with HIV were accessing treatment or prophylaxis to prevent HIV transmission to their children. An estimated (USAIDS, 2016). Adetokunboh and Oluwasanu, (2015) provide an overview of the efforts made towards the elimination mother-to-child HIV transmission (eMTCT) in sub-Saharan Africa by looking at the progress, challenges and recommendations, and carried out a review. They also stated that although there was great progress, more effort is required towards the elimination of MTCT (Adetokunboh & Oluwasanu, 2016:396-407).

1.3.2. South Africa National Antenatal Sentinel HIV prevalence

The latest South African National Antenatal Sentinel HIV prevalence Survey of 2013 revealed that the HIV Prevalence was 29.7% (Department of Health: 2015). The goal of the National Antenatal Sentinel HIV Sero-prevalence Survey is to determine the HIV prevalence of pregnant women who attend the antenatal public clinics for the first time during their pregnancy. The second goal is to provide baseline data at national, provincial and district level, to make future projections of the HIV epidemic.

The highest documented provincial HIV prevalence was KwaZulu-Natal, which increased in 2013 to 40.1%, Mpumalanga was at 37.5% and the Eastern Cape was the third highest at 31.4%. There was an increase of 3.3% of the HIV prevalence in Eastern Cape in 2013. The HIV prevalence in 2013 in the Amathole District where South to South eMTCT Quality Improvement Collaborative program was implemented, was at 35.3%. The HIV prevalence was the highest in the Amathole District out of the

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total number of eight districts in the Eastern Cape (The National Antenatal Sentinel HIV prevalence Survey, 2013).

The researcher could not find many research studies on the research data bases about the antenatal HIV sentinel survey. Gouws, Stanecki, Lyerla and Ghys (2008) made use of some young women attending the antenatal clinics to investigate epidemiological trend of HIV infection and sexual behaviour among people in South Africa.

There are several ways that HIV-infection is transmitted from an HIV positive mother to her baby. The transmission could be through pregnancy, birth or during breastfeeding. The United Nations Children's Fund (UNICEF) report stated that over 90% of new HIV infections amongst infants and young children is transmitted through mother-to-child transmission. Without any intervention to prevent MTCT, the HIV infection risk from mother to baby is 20-45% (UNICEF, 2017).

As discussed in paragraph 1.3.1, more than 95% of pregnant women living with HIV in South Africa in 2016, were accessing antiretroviral treatment to prevent transmission of HIV to their children through the setting of the National eMTCT Action Framework that; "*No child with HIV by 2015, and improving the health of and wellbeing of mothers, partner and babies in South Africa".* One of the National eMTCT Action Framework strategic pillars was that partners or stakeholders through their innovated quality improvement programs, should assist the Department of Health in South Africa to improve on the quality of eMTCT program outcome (Department of Health, 2015).

South Africa is committed to the elimination of mother-to-child transmission of HIV by keeping mothers and babies alive and well. Through the "Last Mile Plan" for the elimination of MTCT, presented by Ms. Ntloana, Deputy PMTCT Director of South Africa, at the 8th South African Aids Conference (2017) South Africa set a five-year target plan started from 2016-2021.The "Last mile" plan is to achieve by 2021, a 0.6% MTCT rate around birth, a 0.8% MTCT rate by around 10 weeks and a final MTCT rate at 18 months. This plan aims to reduce the leakages in the PMTCT cascade (Ntloana, 2017).

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1.4. Quality Improvement Collaborative (QIC) programs

The Institute for Healthcare Improvement (IHI) developed the improvement collaborative approach in 1990 in the United States of America and ever since IHI has supported many organisations applying the quality improvement methodology in healthcare facilities in South Africa.

The use of QIC programs worldwide is a new approach for rapidly improving the quality care in healthcare facilities. A collaborative focus on a specific area of concern is, for example, the prevention of mother-to-child HIV transmission where best practices of the improvement topic can be systematic spread to other healthcare facilities. Different cadres in the organisation can be part of a quality improvement team. The period of a collaborative program can usually last from 12-24 months. A collaborative engages the quality improvement teams to identify a problem, set an aim and test new ideas to be able to identify if there are any improvements in a program. At regular learning session workshops, teams participate in sharing their best practices (USAIDS, 2008)

Eastern Rwanda used a quality improvement-learning model to improve on Prevention of Mother-to-child Transmission (PMTCT). They used learning sessions where the focus was on peer-to-peer learning and program improvements were discussed (Lim et al., 2010:1000302). Youngelson, Nkurunziza, Jennings, Arendse, Mate & Barker (2010: 13891) used a quality improvement approach through a health system design to improve on the MTCT program in Cape Metro District and Kwa- Zulu Natal in South Africa. According to Oyeledu, et al., (2014) a Continuous Quality Improvement-Breakthrough Series (QIC-BTS) was used to increase retention in care of HIV positive women in PMTCT care in the primary and secondary healthcare facilities in Nigeria. A breakthrough Series is a quality improvement collaborative approach model designed by IHI to improve continuous breakthrough quality improvement by supporting change in organisations (IHI, 2003).

These implementation sites have showed various program improvements using the system design approach. Further, PEPFAR supported funding to S2S to roll out a Quality Improvement Collaborative (QIC) to improve the PMTCT program.

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1.4.1. South to South QIC program

South to South (S2S), a PEPFAR-funded Specialist Paediatric HIV prevention and treatment programme, was founded in 2006 at Stellenbosch University by three Paediatricians in partnership with the International Centre for AIDS Care and Treatment Programs (ICAP) at Columbia University, New York, USA. The aim was to develop technical and practical skills of clinicians throughout Africa to manage paediatric HIV.

In 2008, the focus shifted to a comprehensive family-centred approach, aimed at building sustainable paediatric HIV care and treatment capacity and PMTCT in South Africa. During the period of October 2009 until March 2012, S2S piloted a quality improvement (QI) model in the Moretele district (North West province). Based on the successes demonstrated in Moretele district, the capacity-building model was refined in 2012 where S2S supported the South African NDoH to improve maternal and child health services that are related to HIV and Tuberculosis (TB) through the implementation of strategies, which integrate individual, organisation and systems-level interventions.

In 2013, S2S launched a Quality Improvement Collaborative (QIC) program in the Mnquma sub-district of the Amathole district in the Eastern Cape to accelerate elimination of the mother-to-child HIV transmission. A quality improvement collaborative program is a shared learning system that brings many groups of people together where they work together to achieve improvements in the quality of a specific healthcare program. As part as the quality improvement collaborative program, people attend learning sessions where they are presenting their quality improvement projects, with the intention of spreading these ideas and methods to other clinics (USAID,2008). In a quality improvement collaborative program, there are three phases namely the preparation, implementation or demonstration and spreading phase. A lot of planning is happening during the preparatory phase where key stakeholders are engaged in planning. An assessment of current systems takes place through baseline assessments. During the implementation or demonstration phase, quality improvement teams test and document changes and share evidence-based practices at learning sessions. Lastly, during the spreading phase, best-shared improvement practices spread to other clinics and other organisations

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Further, the S2S program aimed at facilitating translation and implementation of the eMTCT Action Framework “that no child will has HIV by 2015”, across three provinces which include Amathole (Eastern Cape), Cape Wine lands (Western Cape) and Pixley ka Sema (Northern Cape), S2S planned and implemented individual-, organisational- systems- and policy-level activities using the Result Framework Model (**See Figure 1).**

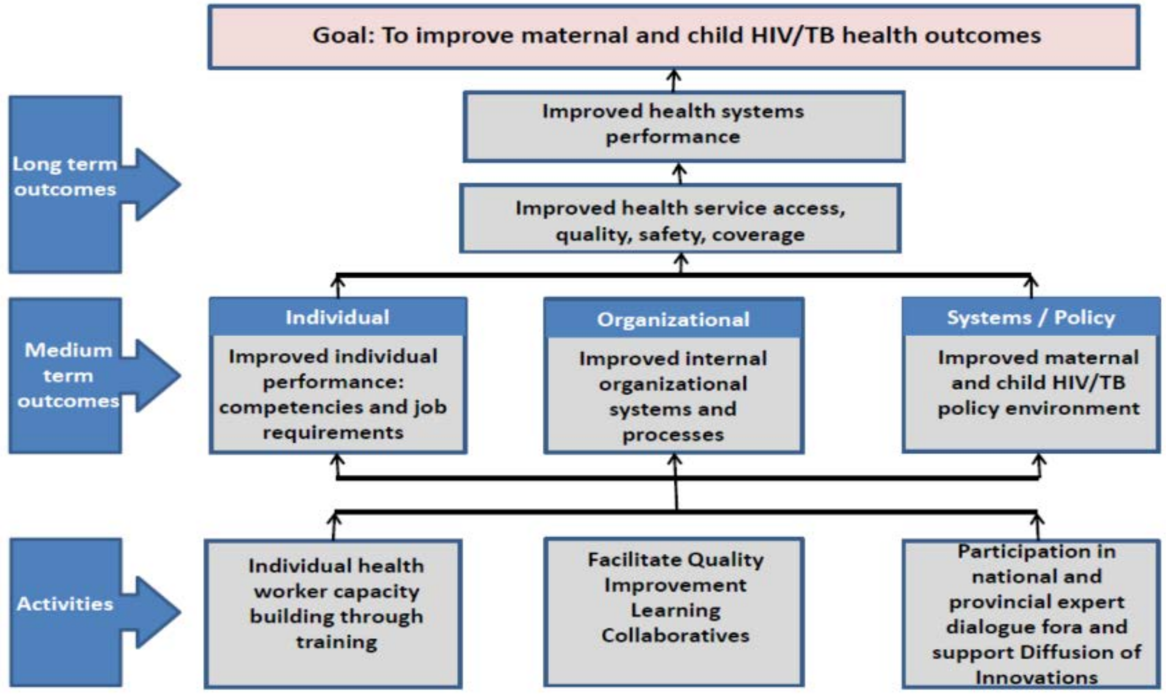

Figure 1: South-to-South Result Framework based **on** ***USAID Developing Results frameworks ,2013***

S2S was using the Result Framework to monitor and evaluate their services rendered to the Department of Health of South Africa. A results framework is a graphic management tool where organisation can follow their program implementation on different levels and assessed their results according to the outputs, outcomes and impacts of the program (USAID, 2013). This framework guided S2S in the planning, the implementation, management, monitoring and especially the impact or evaluation of their projects throughout the program. Below is an explanation of figure 1.

Goal: The main goal of S2S was to improve maternal and child health HIV/TB health outcomes. To reach this goal S2S had long-term and medium-term outcomes that they had to reach by the timeframe set out by USAID. The long-term outcomes were to improve health system performance through improved health service access, providing quality services that are safe and reachable by all health clinics. The

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medium-term outcomes were offered by S2S on three levels that could happen simultaneously with activities at each level. These levels are individual, organisational and system/policy levels.

On the individual level, S2S conducted structured and unstructured modular training for healthcare workers in the context of facility quality improvement team meetings to support the implementation of the Prevention of Mother-to-child Transmission programme. The structured trainings were formal trainings offered at central venues where participants were invited to attend whereas, unstructured trainings were mostly offered at clinic level where a topic of interested is trained on or on the job training, example, how to perform a body mass index (BMI) test on a client.

The eMTCT QIC program was implemented in the Mnquma sub-district that consisted of a preparation phase, a pilot phase consisting of four health facilities in 2013, and a demonstration phase supporting 14 health facilities in 2014 to 2015. A scale-up phase was planned to expand the collaborative to the remaining health facilities in the participating sub-districts from 2015 – 2017. The QIC approach extended to the other three sub-districts in Amathole with the focus on Paediatric indicators.

Further, on an organisational level, S2S adopted the Institute for Healthcare improvement's (IHI) Quality Improvement Collaborative (QIC) approach (see Figure 2.) in order to achieve organisational level changes. The S2S eMTCT QIC program was implemented for 27 months. During this period, six learning sessions were conducted. At each learning session, a different eMTCT indicator was addressed which, presented the PMTCT cascade pathway. An extra indicator, the couple year protection rate, a low performing District Health Information System (DHIS) indicator was added to the program for improvement. The eMTCT indicators were: (1) early antenatal booking before 20 weeks' gestation, (2) HIV re-testing during antenatal care, (3) ART initiation in pregnancy, (4) Mother postnatal visit within six days, (5) Exclusive breastfeeding rates at third dose Hepatitis B (when the child received the third immunisation dose) and (6) Infant 18 months rapid HIV testing coverage rate.

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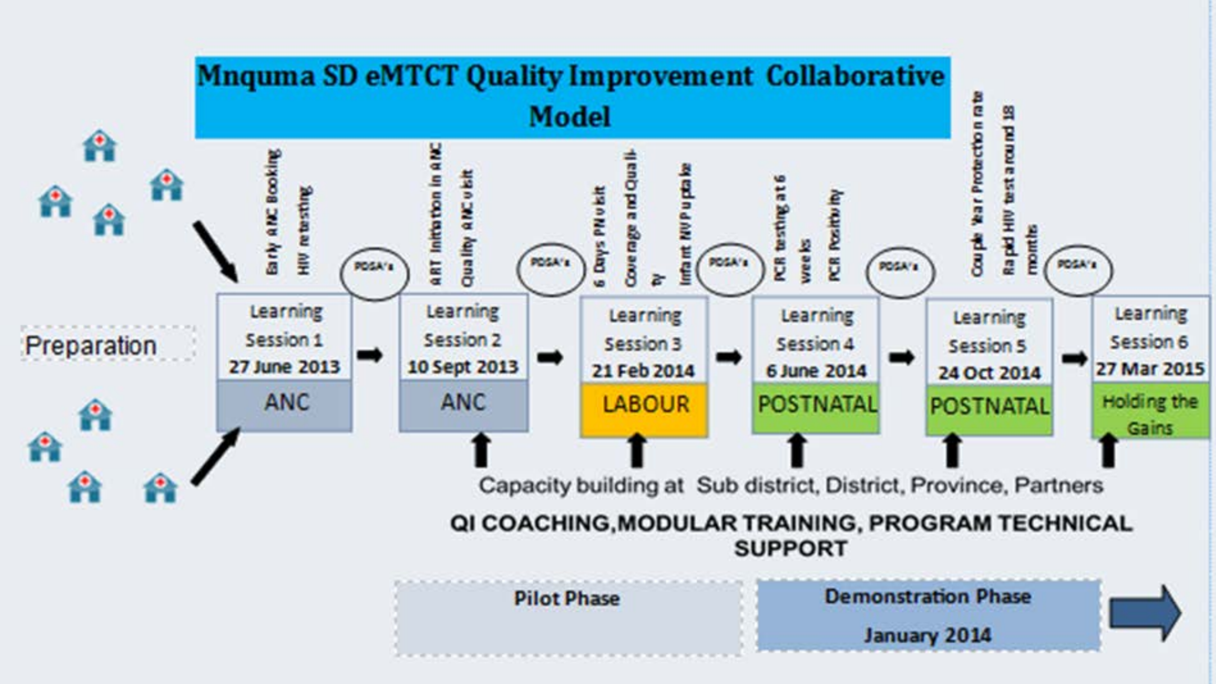

Figure 2: Mnquma sub-district eMTCT Quality Improvement Collaborative-adapted from the Institute for Healthcare improvement

During the eMTCT QIC program, S2S established eMTCT quality improvement teams at participating health facilities. Quality improvement team members and sub-district management attended quarterly learning sessions and the teams conducted quality improvement (QI) projects involving the testing of change ideas during action periods on key topics according to the PMTCT cascade of care. S2S supported QI teams through monthly QI coaching visits, unstructured and structured eMTCT modular training and distance communication quality improvement coaching as required.

The Collaborative model uses the Model for Improvement using the Plan-Do-Study-Act(PDSA) cycles **(see Figure 3)** to develop, test and disseminate best practices that will achieve improved health outcomes and the model has been widely adapted and applied to developed and developing world health contexts (Moen, Nolan, & Provost, 2012:9). The Model for Improvement was widely used by all the health clinics and their projects were based on the design of this model as a framework to guide them towards improvement. The Model for improvement was not only integrated with the eMTCT and Paediatric program, but also into other health programs at facility, sub-district and district level. The Model for Improvement consists of two parts as indicated in figure 3.

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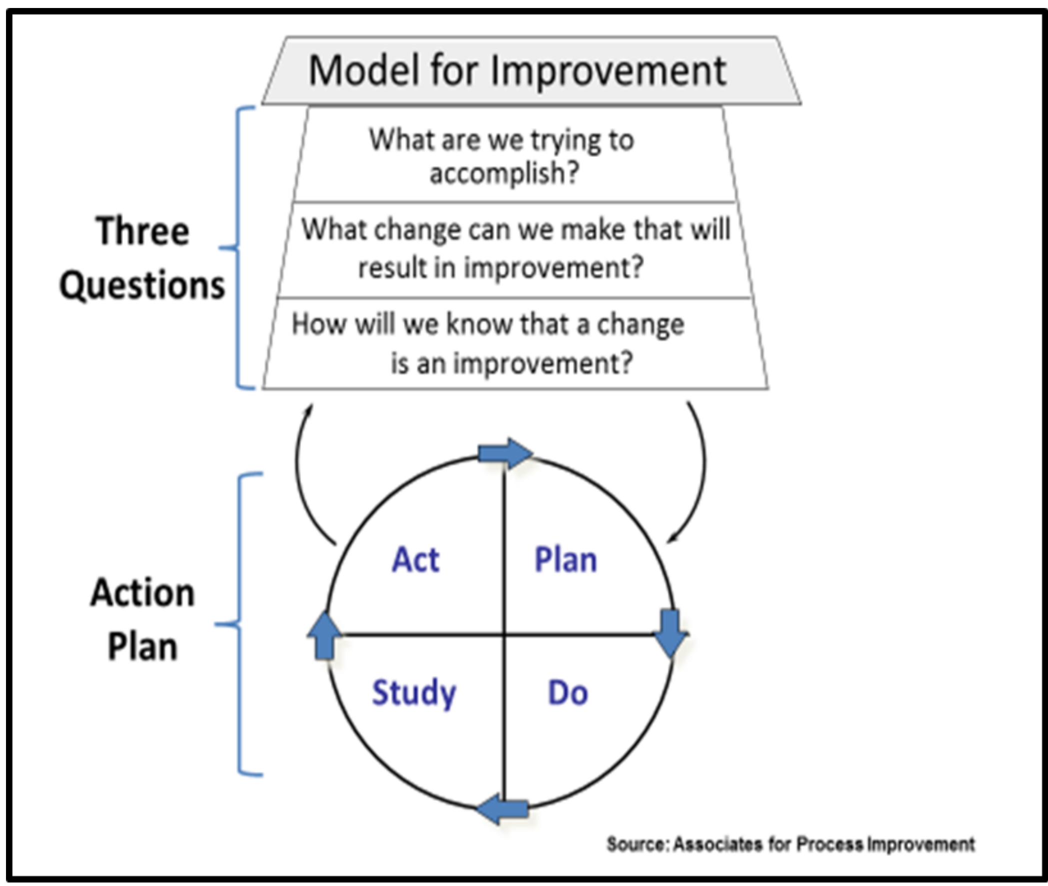

Figure 3: Model for Improvement designed by E. Deming's, adopted by Moen, et al., 2012

The first part included questions the participants had to engage with in order to develop an action plan. "*What are we trying to accomplish*?" This question required the participants to set a collaborative aim and objectives that were SMART (Specific, Measurable, achievable, realistic and time-bound).

Secondly, "*What changes can we make that will result in improvement?"* This question required the participants to think of creative changes or new ideas that would lead to improvement.

The third question, "*How will we know that a change is an improvement?"* the participants were expected to develop ways of assessing the improvements made because of the changes.

The second part of the model depicted an action plan (using the PDSA cycle) where the changes were selected, and the testing was done. The planning included noting the objective, making predictions and planning what will be done and at what specific times. Carrying out all planned activities, analysing the results and deciding whether to adopt or abandon the new tests was decided at the end of the process.

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On a system and policy level, S2S participated in relevant provincial and national eMTCT forums to support policy development, implementation and evaluation. S2S attended the National Paediatric and PMTCT working group meetings, assisted with national auditing, sub-district TB and HIV Reviews and the designing of training materials.

1.5. Rationale

The rationale for this research emerged as two-fold. Firstly, the researcher was one of the two Quality improvement technical advisors who implemented the eMTCT QIC program in Mnquma sub-district for S2S. Their role was to conduct fortnightly to monthly quality improvement support visits to health clinics and sub-district offices to follow up on quality improvement projects and other support involving conducting trainings and learning session workshops. The researcher realized that while she was engaging with different health facilities, using the same QIC approach, some health facilities had different eMTCT outcomes. Some had improved eMTCT outcomes while others were lagging behind and therefore it was not sure if the QIC program was maintained after S2S ended their support at the end of March 2015. Secondly, as far known by the sub-district management, this research study will be the first in Mnquma sub-district on sustainability in any health program.

1.6. Problem Statement

During the first quarter of the Amathole Health District quarterly reviews in 2013, the Mnquma sub-district was one of the lowest performing out of four sub-districts in most of the PMTCT indicators. The Amathole district as a whole was also underperforming. The Mnquma sub-district has been conducting various improvement projects, but they have been lacking a consistent approach to implement changes, with measures to determine if the changes were leading to improvement (Amathole Health District, Mnquma sub-district, Quarterly Review, 2013).

Provincial audits have shown that challenges such as late antenatal booking, low antenatal retesting rates, and poor postnatal follow up visits of mother and baby pairs are key challenges that need to be addressed (Amathole Health District, Mnquma sub-district, Quarterly Review, 2013). When South to South introduced the Quality Improvement program at the Amathole District level in December 2012, sub-district managers of Mnquma were assigned to identify the lowest performing health clinics.

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The QIC program was then initiated in this clinic as a pilot and thereafter the program was extended to other health clinics during 2014. Although Mnquma sub-district had strategies to improve on quality, the researcher identified the health clinics visited, struggle to identify the reasons why some eMTCT indicators were not improving. There was not a proper mechanism to assess if all results were improvement. The need was identified to provide healthcare workers of the Mnquma sub-district with extra skills and knowledge by introducing quality improvement methodologies to guide them towards improvement in the eMTCT program. The other problem that was identify by the researcher is that South to South only had discussions about sustainability of the program towards the end of the eMTCT QIC program.

1.7. Research Problem

The inadequate and/or lack of sustainability of the eMTCT QIC program after partner exit may lead to declining eMTCT outcomes of health indicators which have been improved.

1.8. Research question (RQ)

What is the quality improvement team`s perception of sustainability of the eMTCT QIC program implemented in the Mnquma sub-district, Eastern Cape Province of South Africa.

1.9. Research aim

The aim of the study was to explore and describe the quality improvement team`s perception of sustainability of the eMTCT QIC program implemented in the Mnquma sub-district Eastern Cape Province of South Africa.

1.9.1. Research objectives (RO)

The research objectives for this study includes.

RO 1: To describe the quality improvement team`s perception of the sustainability of the design and implementation of the eMTCT QIC.

RO 2: To describe the quality improvement team`s perception of the factors within the organization that might influence the sustainability of the eMTCT QIC program.

RO 3: To describe the quality improvement team`s perception of the factors in the broader community that influence the sustainability of the eMTCT QIC program.

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1.10. Research methodology

As described by Tracy (2013:36), research methods are the collection, analysis and interpretation of information source during qualitative data. Quantitative data or both. There are three types of research designs, namely qualitative, quantitative and mixed methods. In qualitative research, the researcher wants to explore and understand the meaning that an individual or group belongs to a social or human problem. Qualitative data collection methods can be either unstructured or semi-structured techniques that can include focus group discussions, individual interviews or observation (Creswell, 2009:4).

The rationale for using a qualitative research approach was to explore the quality improvement team`s perception regarding the sustainability of the eMTCT QIC program.

1.10.1. Research design

A descriptive exploratory approach was chosen in this study because the researcher wanted to explore the quality improvement team`s perception of the sustainability of the eMTCT QIC program. An exploratory research design intends to explore the research questions and does not intend to offer final and conclusive solutions to existing problems, but will assist researchers to have a better understanding of the problem so that the findings can contribute to further research.

Some advantages of exploratory research are that it is flexible and adaptable to change and that it can lay the groundwork that will lead to future studies. A more in-depth description of the research methodology is described in chapter three.

1.10.2. Study setting

This study was conducted in the Mnquma sub-district at nine health facilities including one 24-hour community health centre. The Eastern Cape Province is divided into eight health districts with the Mnquma sub-district situated in the Amathole district, east of the Kei River, in the South-Eastern part of Eastern Cape Province (see map below).

The Mnquma sub-district is one of the four sub-districts in the Amathole district in the Eastern Cape. According to the 2011 Census, Mnquma sub-district had an estimated total population of 252 390 and the population experienced a negative growth of 1.2%

per annum (Statistics South Africa, 2011). In 2012, the Amathole district had an antenatal HIV sero-prevalence of 28.4% (2012 National Antenatal Sentinel HIV & HSV-2 Prevalence Survey in South Africa). The primary healthcare facilities offer all health services except a baby delivery service, but the 24-hour community health centre does offer that service.

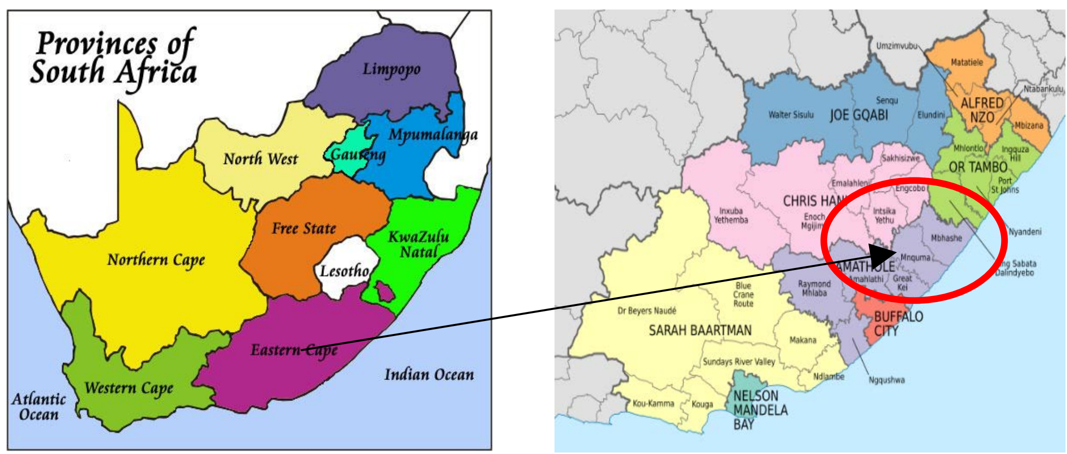

Figure 4: Map of South Africa`s provinces(left) and Amathole, Mnquma sub -district(right)

1.10.3. Population and sampling

The target study population of this research was the quality improvement team members of the Mnquma sub-district, Eastern Cape, and who were part of the eMTCT QIC program during January 2013 to March 2015. Burns and Grove (2011:51) describes a population as an entire group of people that includes individuals and objects that meet a certain criterion for a research study. The study population is also described by Neuman (2011: 241) as an abstract idea of a large group of many cases from which a researcher can draw a sample and to which a sample can be generalised.

Sampling is a process where the researcher chooses the participants from the larger population who are being studied. Burns and Grove (2011:41) describe sampling as a selection of a subset of individuals within a statistical population to estimate the characteristics of the population. There are two types of sampling methods, namely probability or random sampling, and the other being a non-probability sampling. Probability sampling method is mostly used in quantitative research. Convenience, quota, purposive, snowball and theoretical sampling can be applied in qualitative research. A purposive sampling method was used to select the participants for the study.

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The eMTCT QIC program was implemented in 14 health facilities where the two South to South QI technical advisors each had to manage seven health facilities. The sample size for this research study was a representation of both QI technical advisors' health facilities. Three individual interviews and two focus group discussions were conducted. Participants were selected from nine of the 14 eMTCT QIC health facilities. Initially only six clinics were selected, but researcher and Mnquma sub-district decided to add three more health clinics according to the catchment area and easy travel access for participants. Approval to conduct research at the nine facilities was obtained from Eastern Cape Research Committee.

1.10.4. Data collection tool

Semi-structured interviews with the use of an interview guide were used because it is more flexible and organic in nature. This type of interview approach is described by Tracy (2013: 139) to be more creative, adaptable to ever-changing circumstances, and cedes control of the discussion to the interviewee. The author also stated that it is an advantage to use this type of approach because it allows for more emic, emergent understanding to blossom and the interviewee`s viewpoint can be heard without any disturbance.

1.10.5. Pilot study

The pilot study was a smaller version of the proposed study that was conducted to evaluate if any changes were necessary before the proposed study was initiated. The pilot study was also used to determine the effectiveness of the sampling technique. During the pilot study, the researcher`s interview skills were assessed by her supervisor (Burns & Grove, 2009:44). Another reason for doing a pilot study was to evaluate if the interview guide, was appropriate given the research aims, objectives and questions. The researcher conducted a pilot interview with one participant who was included in the interview. The data was analysed to envision if the information received suited the study objectives. The interview guide was only adjusted with some changes of the probing words from the supervisor before the focus group discussions and the individual interviews were conducted.

1.11. Trustworthiness

The researcher was fully involved in the initiation, implementation and exiting period of the eMTCT QIC program in the Mnquma sub - district. The researcher used Lincoln

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and Guba's model (1985) to establish trustworthiness of the study. Trustworthiness, according to this model, is the truth-value of the study where the researcher interpreted the true and accurate experience with the participants. The criteria for trustworthiness for qualitative studies according to Lincoln and Guba (1985) are credibility, transferability, dependability and confirmability.

1.11.1. Credibility

Credibility refers to true findings that are judged by the discipline of participants and others. It is the true value and interpretation of the data. In this research study, healthcare workers at clinic and sub-district level were used because they were the greatest contributors to the findings (LoBiondo-Wood & Haber, 2017:168).

To ensure credibility, the researcher carried out the study in a way that enhanced the credibility of the findings by staying truthful all the times. The researcher understood her involvement in the project, therefore ensured that she analysed the participants' voices rather than her own perspective of the study.

1.11.2. Transferability

Transferability means that this research study can be applied in another context of a program and the findings can be shared with other research studies or any theory development (Brink, Van Der Walt & Van Rensburg, 2007:118). In this study, it may be possible that the outcome of these findings about sustainability can be shared with other organisations who are doing similar programs.

1.11.3. Dependability

The researcher did a pilot study prior to the main study to ensure that the questions on the interview guide and probing words are aligned with the research question and objectives. The researcher ensured that all steps are well documented. Transcripts deducted from audiotapes were checked and verified by the supervisor and the researcher.

1.11.4. Confirmability

The researcher made sure that the findings, conclusions and recommendations were supported by rich data and that the findings were a true reflection of the participants' experiences by verifying it with her supervisor. Her supervisor also accompanied her

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during the data collection for guidance and took notes during the two focus group discussions.

1.12. Data collection

Data collection is the identification of subjects and the precise, systematic gathering of information that is relevant to the research purpose, objectives or hypothesis of the research study (Burns & Grove, 2011:35). Data was collected from 17 to 20 July 2017.

There were two focus group discussions on different days and three individual interviews were conducted. An interview guide was used with open-ended questions and probing words, which explored the quality improvement team's perceptions of sustainability of the eMTCT QIC program. Focus group discussions and individual interviews were held in a private boardroom at a guesthouse. Consent was obtained from all participants who were interviewed as well as consent for the audio tape recordings.

The researcher's supervisor was the moderator during the two focus group discussions and accompanied the researcher. The supervisor also assessed the pilot interview that was done on one participant prior to the main study and some probing words were changed to fit the flow of the questions. Although the area is mostly Xhosa speaking people, the interviews were conducted in English because the participants who were selected understood English. They were also part of the quality improvement team at the health clinics and learning sessions which was also conducted in English.

1.13. Data analysis

Data analysis is a process that involves the preparation for the data analysis, conducting different analyses, moving deeper to understand the data, representing the data and making an interpretation of the larger meaning of the data (Creswell, 2009:183). Grove, Burns and Gray (2014:88) describe data analysis as a rigorous process that needs discipline to develop innovative views that are in line with the study methods.

During data analysis, the researcher spent an enormous time reading and reflecting on the data. The goals of the data analysis are to make some sense of the data that was collected, to look at patterns and relationships within and across the data

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collection, and to make general discoveries about the phenomena which the researcher is studying.

Coding and creating themes and sub-themes and the interpretation of data are important processes during data analysis. Coding can be described as a process of the reading of the data, the breaking down the text into smaller parts and giving a label to that part of the text. Themes emerged from the codes that were combined into more abstract phrases or terms. During the interpretation process, the researcher places the findings into a larger context, linking the themes with each other (Gray et al., 2016:89).

The tape recordings were transcribed by Leigh Story transcription services and analysed by the researcher with guidance from the supervisor. Colaizzi`s method, as described by Sanders (2003, 14:292-302) to analyse qualitatively, was used in this study.

1.14. Ethical considerations

A researcher is responsible for conducting research studies in an ethical way and failure to adhere to this will undermine the scientific process which can have negative consequences (Brink, Van Der Walt & Van Rensburg, 2007:30). Therefore, researchers are guided by three fundamental ethical principles namely: respect for persons, beneficence and justice.

Ethical approval for conducting the research study was obtained from the Health Research Ethics Committee of Stellenbosch (Ethics Reference number: S17/05/096) and from the Eastern Cape Research Committee (Reference: EC_2017RP52_350).

1.14.1. Right to self-determination

The right to self-determination is based on our respect for the autonomy of the individuals. This means that each individual has the right to make informed choices, free of coercion, based on their own personal beliefs and values (Burns & Grove, 2011:110). All participants that were selected for the study were informed about what the study entailed. After participants obtained informed consent, only then were they involved in the group discussions and individual interviews. Participants were also informed that participation in the study was voluntary and that they could withdraw at any time.

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1.14.2. Right to confidentiality and anonymity

It is the researcher`s ethical duty to assure confidentiality and anonymity of participants at all times during all phases of the research study. Assurance was given to the participants that their real names would not be used in the study but that each name will were linked to a code name to guarantee confidentiality. They were also informed that the information gained would be used in the research study and that it will be shared with the research supervisor. Participant information was stored on a password-protected computer. Data collection of participants were conducted in a private boardroom at a guesthouse without any disturbance. At the start of the focus group interview, participants assured that confidentiality will be kept within the group.

1.14.3. Right to protection from discomfort and harm

The right to protect the participants from discomfort and harm is described in Burns and Groove (2011:118) as one of the ethical principles, beneficence, which states that one should aim to do good and also avoid doing any harm, called non-maleficence. Participants were assured that they could withdraw anytime from the interview or focus group discussion if they feel any discomfort. Participants were also informed about what the study entailed before any consent was given to participate.

1.15. Operational definitions

Approach: The word "approach" can be defined as a way of dealing with, doing or thinking about a problem or situation in a certain way (Oxford Dictionary Current English, 2006: 38).

Community: A community is a group of people living together in a defined geographical area, who probably share a common culture, values and norms that are arranged in a social structure according to relationships that were developed over a period of time (World Health Organisation, 2004:16).

Healthcare worker: A healthcare worker is by definition a person engaged in the promotion, protection or improvement of the health population. The World Health Report of 2006 defines a healthcare worker as persons whose job is to be responsible to improve the health of their communities (World Health Organisation, 2006).

Improvement Collaborative: An improvement collaborative is a shared learning system that brings many groups of people together. This includes the different staff

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members from various clinics where they work together to achieve improvements in the quality of specific healthcare programs and sharing improvement ideas with the intention of spreading these ideas and methods to other clinics (USAID, 2008).

Organisation: It is a group of people or individuals with a particular purpose working together in a business or a government (Oxford Dictionary Current English, 2006: 632)

Quality Improvement: It is a formal approach in health care for the analysis of performance of an intervention by testing and implementing an intervention and, therefore, examine whether the intervention has an impact on health improvement outcomes (Burns and Grove, 2009:717).

Sustainability: Sustainability refers to the continuation of programs, in other words the ability to maintain at a certain level (Sustainability Guide, NHS: 2013).

1.16. Chapter outline

Chapter One: Scientific foundation of the study

This chapter described the scientific foundation of the study that includes an introduction to the study title, an overview of the eMTCT statistics regarding HIV/AIDS morbidity, mortality, treatment and management worldwide, sub-Saharan Africa and South Africa. It also provides an overview of the latest South Africa national antenatal sentinel HIV prevalence, background of the PMTCT program in South Africa, quality improvement programs in South Africa and ends off with the S2S QIC program. This chapter is also an overview of the research problem, research question, study aim and objectives, as well as the research methodology.

Chapter two: Literature review

This chapter represented a summary of the literature review of different quality improvement approaches, sustainable eMTCT programs and theoretical frameworks of factors that are influencing the sustainability of health programs.

Chapter three: Research methodology

Chapter three provides an in-depth explanation of the research methodology used to explore the quality improvement perceptions of sustainability of the eMTCT QIC program; the study aims and objectives, study setting, research design, population and study sampling, data collection instrument, the pilot interview, trustworthiness and how data were collected and analysed.

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Chapter Four: Results

Chapter four provides information on the findings of the individual in-depth interviews and the focus group discussions that include how the themes and sub-themes were created.

Chapter Five: Discussion, conclusions and recommendations

In this chapter, a discussion of the findings of the results is provided, with recommendations and a conclusion.

1.17. Significance of the study

Through this study, the researcher gained more knowledge of the quality improvement methods used to improve on eMTCT program. At the same time the researcher gained more knowledge from health care workers at health facilities regarding the eMTCT program. The findings of the study will make a positive contribution to the body of literature of sustainability.

1.18. Summary

In this chapter, the scientific foundation of the study including the introduction and background of the research were explained. The research problem, research question, aims and research objectives, a brief overview of the research, the methodology, ethical considerations, key concepts and study outline were described. The next chapter will focus on the literature review on all relevant information used for this research study.

Most organisations implement new programs or innovations to improve on health outcomes, but each one has different challenges to sustain the gains. Sometimes organisations revert back to previous activities because different factors can influence sustainability of the program. Therefore, the researcher recognised the need to explore the quality improvement team`s perceptions on sustainability of the eMTCT QIC program so that it can add to future research.

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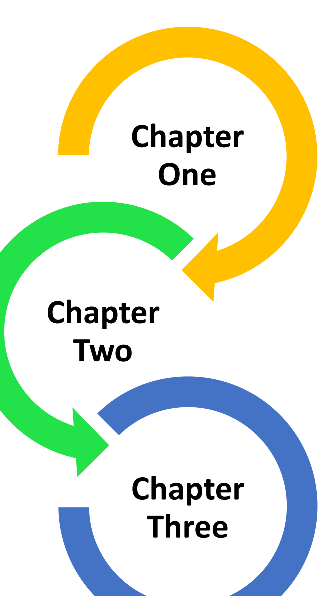

Chapter one discussed the background of the study while highlighting the objectives and the research methodology to be applied in the study. This chapter further alluded to a summary of preliminary review of literature

In this chapter the author will focus on the review of literature which was done systematically to address the main issues within the study. Further the voice of other authors on the thesis title will be highlighted

In the following Chapter three the researcher will discuss in-depth explanation of the research process followed.

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2. CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

A literature review is described in Machi and McEnvoy (2014:3-4) as a written document that review the literature on a specific research topic and what is current knowledge of the topic. Organisations are experiencing different factors that prevent program sustainability. In the literature review, the researcher is going to discuss (1) different quality improvement approaches in the healthcare, (2) sustainable eMTCT Programs and (3) factors influencing sustainability in healthcare.

In this study, the researcher conducted a literature review prior to submitting the proposal to obtain background knowledge about the phenomenon that is under study. An extensive literature review was then conducted to guide the researcher on concepts such as quality improvement approaches, different sustainable eMTCT programs and factors that influence sustainability in healthcare. The literature review provides a background for the understanding of the current knowledge about the topic.

2.2. Electing and reviewing the literature

In order to limit any bias during the data collection process, the researcher only started to write up the literature review chapter after the individual interviews and focus group discussions were conducted.

Search engines that were used during the literature review were PubMed. Google Scholar, BioMed Central, CINAHL, Institute for Healthcare Improvement and Human Research Science Council.

Literature review of the last five years was prioritised, however, there were some references and resources used that were beyond this timeframe due to the importance for this study, for example, one of the sustainability models. Prescribed books, library textbooks, journals, dissertations, Department of Health documents, SÁ policies and guidelines and policies of WHO/United Nations were used during the search for information on the researcher's study research topic. Articles on quality improvement methodology and sustainability program were reviewed and included in this study.

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Keywords used during the electronic database searches included: quality, quality improvement, eMTCT/PMTCT, collaborative, healthcare and sustainability/ sustainable.

The literature review will be discussed while defining quality and quality improvement investigating the importance of quality in healthcare, different quality improvement approaches in the healthcare, defining sustainable /sustainability, sustainable eMTCT Programs, factors influencing sustainability in healthcare.

2.3. Defining Quality of care

The primary focus of quality of care is the need to improve healthcare continuously. The WHO defines quality of care as the extent to which healthcare services are offered to individuals and patient populations to improve the desired health outcome in the six dimensions of quality. These are effective, efficient, accessible, acceptable/patient-centred, equitable and safe healthcare to all (WHO: 2006). Quality is described by Moen et al., (2011: 4) as a measure of how well a product or service matches the need. Quality is also defined in the as a standard or measurement against other things or similar to match how well a product or service is (Oxford Dictionary Current English, 2006). Quality improvement can be described as a formal approach to the analysis of performance and systematic efforts to improve and achieve the best results (Burns and Grove, 2009:717).

The Minister of Health in South Africa signed a Negotiated Service Delivery Agreement (NSDA) in September 2010 to plan for interventions and activities to improve better lives and healthy outcomes to all South Africans by improving the quality of care in the health systems. These standards are set out in the National Core Standards document of South Africa. The terms quality and quality improvement are defined in the Quality Improvement Guide, Department of Health (DOH), as achieving the best possible results within available resources. It is also described as any activities, interventions or processes that are designed to improve acceptability, efficiency and effectiveness of service delivery that will lead to better, ongoing health outcomes (Quality Improvement Guide, 2013:5).

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2.3.1. The importance of quality in healthcare

Quality management in healthcare is of critical importance, especially to the patient and client to ensure healthy outcomes and patient satisfaction. There are different components of quality care to individuals in healthcare as described by Teleki et al., (2003).

Firstly, the environment or setting must be safe at all times for the individual (patient) to prevent any injuries. Secondly the care to individuals must be effective. The high quality of healthcare system must be patient-centred where the individual can be treated holistically. Quality of care in the health system must be delivered on time without patients waiting to or wasting patients' time. Further, the quality of care in the health system must be efficient. Lastly, the patients' needs must be based on individual needs and not on personal characteristics.

2.3.2. Quality improvement approaches in healthcare

Quality Improvement methodologies exist way back in the twentieth century. Dr W. Edward Deming with his "Theory of Profound Knowledge" used quality improvement methods as a business strategy. This is a fundamental change strategy where people of any organisation can reach their set goals and take pride in their performance of the activities achieved.

Deming defined quality according to his Profound Knowledge Lens diagram where the primary focus is improvement. In Deming's Diagram of Profound knowledge, it shows that ongoing matching services and products used by suppliers and customers must be good and it must be closely connected to the system. When the product or service to the client is not satisfactory, there is a need for a redesign for a new prediction (Moen et al., 2012:4).

Doherty et al (2009) implemented a participatory quality improvement intervention in Amajuba, a high HIV prevalence district in KwaZulu Natal province to improve on Prevention of Mother-to-child Transmission (PMTCT) outcomes. In the abovementioned study, Doherty et al., (2009) describe the intervention where district supervisors were trained and gained extra skills on how to improve quality in their health system. The teams that were formed consisted of a multi-disciplinary health team. Different tools were used to gain data, for example structured interviews and an

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observational tool to assess availability of medication and suppliers, recordkeeping and available counselling rooms. During the feedback and planning phase, district programme managers identified problems in PMTCT program and set realistic targets. The team agreed on an action and on how to address the challenges. Although continuous support had been offered to the health facilities, there were still gaps, for example a lack of supervision, lack of formal training to healthcare workers, a shortage of staff and client factors, to non-disclosure of HIV status in the PMTCT outcomes.

Van Houdt, Heyrman, Vanhaecht, Sermas and De Lepeleire, (2013) conducted a quality improvement project in the region of Bruges (Belgium) called `*Care pathways to improve care coordination and quality between primary and hospital care for patients with radical prostatectomy'*. The aim of the study was to assess if a change of the care pathway would lead to better patient health outcomes. The method that was used was an exploratory trial to assess the feasibility of quality measurement and the possible effect of the intervention and recruitment. Process and outcome indicators were used to translate the quality of care before and during the process. There were two groups; one group received a pre-questionnaire and the other group a questionnaire after implementation. Although there was a low involvement from management, there was continuous quality improvement.

Webster, Sibanyoni, Malekutu, Mate, Venter, Barker and Moleko (2012:315-324) used a different approach by using a phased scale-up design to report on a health system strengthening intervention in Region City of Johannesburg, South Africa. Quality improvement methods were used to create a learning network between community health centres and tertiary hospitals. A quality improvement team was formed with different staff categories and a quality improvement team leader. Quality improvement mentors trained all clinical staff on quality improvement methods, for example, how to identify the root causes of why patients are not initiated on antiretroviral and HIV related treatments.

The approach was that quality improvement teams will then attend learning sessions where they will be presenting the clinics' HIV projects. The Model of Improvement was used that included Plan-Do-Study-Act (PDSA) cycles to test process changes. Long-term sustainability seemed to be a challenge and that was due to high staff turnover, irregular quality improvement staff meetings, fluctuation in leadership support and the

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communication that includes feedback of process of quality improvement project (Webster et al., 2012).

Barker, Barron, Bhardwaj and Pillay (2015, 29(13):137-S143) were looking at the different quality improvement approaches in different parts of South Africa and concluded that quality improvement methods can assist primary healthcare clinics to improve on the quality of health services.

2.4. Factors influencing the sustainability in healthcare

There are different factors that influence sustainability of programs in healthcare to deliver quality services to patients or individuals.

2.4.1. Defining sustainable/sustainability

The word "sustainable" according to the (Oxford Dictionary Current English, 2006: 920), means to be able to maintain or continued, uphold or defend at a certain rate or level.

. Many research papers have different meanings of sustainability.

In the author's research study, sustainability means that the healthcare workers need to continue with the quality improvement program that was implemented by South to South. The quality improvement team leader may continue with regular quality improvement team meetings with team members to discuss the quality improvement project. The quality improvement team also needs to use the quality improvement tools that will guide them to identify a problem and find the root causes to the problem, the setting of an aim, creating change ideas to implement and test, and lastly, to use measurements to see if there are any project improvements. As long ago as 1998, Shediac-Rizkallah and Bone described different definitions of sustainability and some of the terms they used were integration, program continuation, institutionalization, routinisation and incorporation.

2.4.2. Sustainable eMTCT program

Scheirer and Dearing wrote a paper in 2011 in the American Journal of Public Health, "An agenda for research on sustainability for public health programs" where they looked at sustainability activities in organisations, ideas on how to sustain, factors that

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influence sustainability, types of sustainability research, measures on sustainability and the definitions of sustainability. Scheirer and Dearing, (2011:2060) stated that sustainability means that it is a continued process of program activities for the continued desirable goal or aim of the program and healthy population outcomes. They also stated that organisations needed to adopt only those activities or interventions where there is evidence of program improvements.

According to Scheirer and Dearing, (2011:2061) there are dependant and independent variables for the study of health program sustainability. One of the dependant variables is the question of whether this intended outcome is beneficial to serve the customer or client, and also if the program will still continue if the partner exits the organisation or if no funds are available? The authors also concluded by making a statement asking how an organisation can say that they will be holding the gains if there is no data that can prove their statement.

Doyle, Howe, Woodcock, Myron, Phekoo, McNicholas, Saffer and Bell, (2013, 8:127) used a Sustainability Model (SM) to provide a potentially useful approach to measure the team views about addressing everything involved in organisational sustainability. The definition for sustainability in the research paper refers to the incorporation of new implemented ideas in the organisation as a new practice and to continue it with desired outcomes (Doyle et al 2013, 8:127).

The authors, Johnson, Hays, Center and Daley, (2004: 135-149) viewed sustainability as a change process where specific action steps are important to strengthen program sustainability. They used a conceptual view of a sustainability planning model to assess sustainability.

2.5. Theoretical frameworks

Shediac-Rizkallah and Bone's, (1998) widely used model stated different factors that can influence program sustainability, for example leadership and champion roles, project financing, project duration, human resources and community involvement. The figure below shows a framework for conceptualizing program sustainability.

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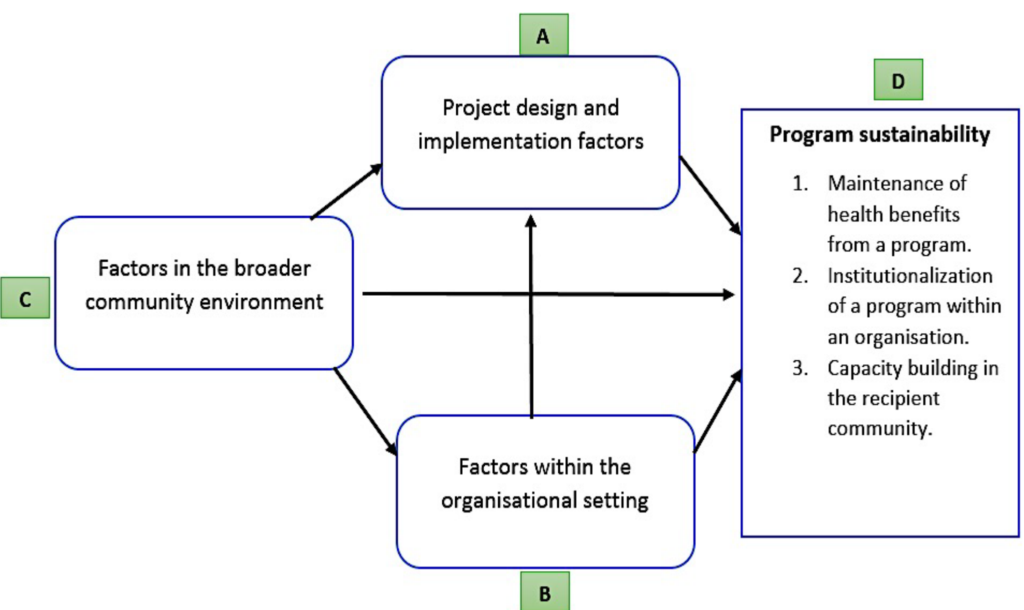

Figure 5: Framework for conceptualizing program sustainability (Shediac-Rizkallah & Bone (1998:87-108)

Label D illustrates the desired outcome of program sustainability. Three factors in this model can influence program sustainability.

Label A illustrates the project design and implementation factors which include some factors, for example the design, the timeframe, benefits, human resources and finances of the new program

Label B illustrates the factors that can influence program sustainability, for example leadership buy-in and readiness of the organisation to implement the new program

Label C involves factors in the community environment, for example the existence of partnerships that lead to non-monetary support. Another factor is whether the project be beneficial to the community?

Scheirer and Dearing, (2011:2061) used the Conceptual framework for sustainability for public health programs based on Shediac-Rizkallah and Bone, (1998) to identify possible factors that influence sustainability in an organisation. They divided it into dependant and independent variables. The independent variables were the same factors of Shediac-Rizkallah and Bone’s, (1998) framework.

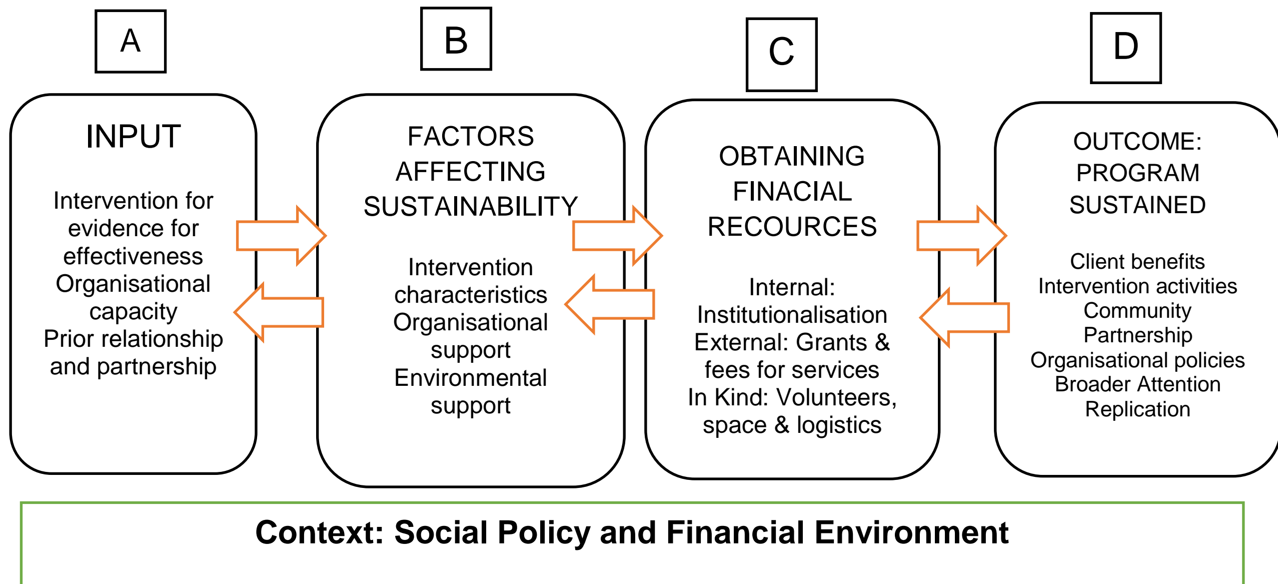

Figure 6: Framework for sustainability for public health programs (Scheirer and Dearing (2011:2061)

Doyle et al., (2013, 8:127) used the Sustainability Model to identify more than 100 factors that were important ingredients for sustaining change in any organisation. The factors were scaled down to ten factors and were grouped into three domains entitled process, staff and organisational factors. Factors that were grouped under the "process" were those factors that would be beneficial to the clients and how staff sees the credibility of the benefits and adaptability of the improved process and whether they will be able to maintain after the initiators are no longer there.

The factors that emerged under "staff" were staff attitudes towards change the, involvement of staff in the training process, and leadership engagement. The factors that were identified under "organisation" were the infrastructure of sustainability and whether these changes fit with the organisation's strategic aims and objectives.

Johnson et al., (2004: 135-149) used a conceptual view of sustainability planning model to assess sustainability of innovations within the organisation, community and state systems. Through extensive literature review, the authors found a set of casual factors that need to be addressed because it can influence sustainability of a program. The factors identified were structure and formal linkages, a champion in place, effective leadership enough resources, policies and procedures. The sustainability action strategy as described in the sustainability-planning model (figure 7) consisted of a five-stage process; assessment, planning, implementation, evaluation and reassessment or modification.

Figure 7: Sustainability action steps (Johnson, Hays, Center and Daley, 2004:135-149)

2.6. Summary

Although the above frameworks and conceptual maps were discussed, the researcher will use the outcome of the data analysis to compare if there are any similarities or differences of factors that influence or enhance program sustainability. Shediac-Rizkallah and Bone's, (1998) framework will be used as a lens to analyse the research.

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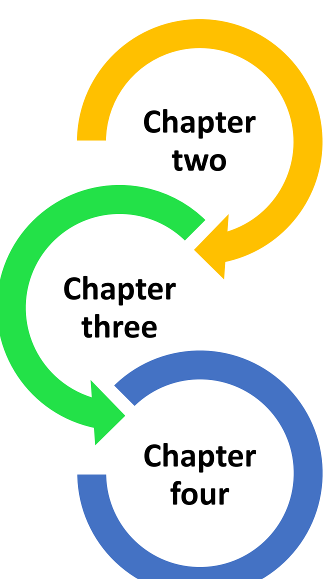

In the previous chapter the focus was on discussing the scope of literature reviewed that influences this study. The review also focused on identifying studies that have dealt with the sustainability of quality improvement programmes.

This Chapter will focus on the systematic processes followed in this research to ensure trustworthiness of the findings. Further the ethical principles and processes followed will be discussed.

In the following Chapter the author will discuss the research findings highlighting the perceptions of healthcare workers on the sustainability of the eMTCT quality improvement program

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3. CHAPTER THREE RESEARCH METHODOLOGY

3.1. Introduction

This chapter provides a more in–depth discussion of the research methodology discussed in chapter one. The researcher describes the process that was followed to explore the quality improvement team`s perception of sustainability of the eMTCT QIC program. A qualitative research method has been used in this research. In qualitative research, the researcher wants to explore and understand the meaning of how an individual or group belongs to a social and human problem. According to Creswell (2009:4) the process of research involves emerging questions and procedures from the data that was collected in the participants' setting during their interviews or discussions. After the data collection, the researcher makes meaning of the data during data analysis by creating themes of the interpretation of the data. This chapter will describe the purpose, aim and objectives and research methodology that was used in this study.

3.2. Study setting

The setting of the study is the location or place where the study is conducted. Grove et al. (2011:40-41) describes the three types of settings for conducting a research study. The first setting is a natural or field setting, that is an uncontrolled real-life situation or environment where the researcher does not make any changes to the setting. The second setting is a partially controlled setting where the researcher makes some changes to the setting, for example to limit the fear of children when they are being interviewed. The last setting is a highly controlled setting where the study takes place in another setting, especially when using animals in the study.

The research study setting was a natural setting as it occurred in a real-world setting. The setting was at healthcare clinics where healthcare workers implemented the quality improvement projects. The research study took place in the Mnquma sub-district in the Amathole district in the Eastern Cape. The Mnquma sub-district is one of the four sub-districts in the Amathole district, The Mnquma local municipality is located in the south-eastern part of the Eastern Province. The Mnquma municipality

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shares borders with three other local municipalities, i.e. Mbhashe, Intsika Yethu and Great Kei Municipalities (see Figure 4).

The Mnquma local municipality has a total population of approximately 252 390 people, the second highest in the Amathole District (892 637), 99% of which are Xhosa speaking people. The remaining 1% of the population includes English, Afrikaans, Zulu and Sesotho-speaking people. The municipality comprises 54% female and 46% male of the total population and consists of approximately 75410 households. It is approximately 32 995 240 square kilometres and has 31 wards (Statistics South Africa, 2011).

The Mnquma sub-district has 28 clinics, two hospitals (Butterworth & Tafalofefe hospital) and one community health centre (CHC); Nqamakwe CHC. All clinics offer adult and child health preventative, curative services, including antenatal and postnatal care. The hospitals and community health centres offer delivery services as well as TB and HIV services. Professional nurses deliver ART and PMTCT services. Nqamakwe CHC is a 24-hour community health centre that offers antenatal, labour and postnatal services including outpatient services. Butterworth and Tafalofefe Hospital offer tertiary services and they are the health clinics' referral hospitals. The main town is Butterworth Town and most patients live far from clinics and use paid transport.

3.3. Research design

The research design is a blueprint for conducting a research study and this includes the collection, measurement and analysis of data. The purpose of a research design is to answer the research question (Burns & Grove, 2011:49).

An exploratory descriptive research design using qualitative approach was used to understand the perceptions of the quality improvement team`s about the sustainability of the eMTCT QIC program. As part as the exploratory approach, it identifies a phenomenon of interest where the participants, without any help to theory, describe the real-life experiences about the topic, deduction or assumptions from other disciplines. A phenomenon is an occurrence, a circumstance that is observed or something that appears real to the mind and impresses the observer (Burns & Grove, 2011:228).

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An exploratory research design intends to explore the research questions and does not intend to offer final and conclusive solutions to existing problems. Rather, it assists researchers to have a better understanding of the problem so that the findings can contribute to further research. One advantage of exploratory research is its flexibility and adaptability to change. Another advantage is that it is effective in laying the groundwork that will lead to future studies.

3.4. Population and sampling

Burns and Grove, (2011:51) describe a population as an entire group of people that includes individuals and objects that meet a certain criterion for a research study. The population is also described by Neuman, (2011: 241) as an abstract idea of a large group of many cases from which a researcher can draw a sample and to which a sample can be generalised.

The population for this study was healthcare facility staff who were involved in the eMTCT QIC program during January 2013 to March 2015 in the Mnquma sub-district in the Amathole district, Eastern Province. The healthcare workers who were selected for sampling for this study were the following cadres; professional nurses (which included the clinic supervisors and the sub-district manager), enrolled nurse, data capturers, a community healthcare worker and a lay counsellor.

Sampling is a process where the researcher chooses the participants from the larger population to be part of the study. Sampling is described by Burns & Grove (2011:40) as a selection of a subset of individuals within a statistical population to estimate the characteristics of the population. There are two types of sampling methods, namely probability or random sampling, and non-probability sampling. Probability sampling method is mostly used in quantitative research.

A non-probability purposive sampling method was used to select the participants. The reason why purposively sampling was used is that the researcher believes that the participants selected provided rich information that fit the parameters of the project's research questions, goals and purposes (Tracy, 2013:134). A quality improvement coaching attendance list was generated from the S2S strategic information system from the period January 2013 to March 2015. The researcher identified the health facilities and participants that were selected for the research study.

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The sampling selection was healthcare workers who were part of the quality improvement team at the health facility during eMTCT QIC program from January 2013 to March 2015 in the Mnquma sub-district in the Amathole district, Eastern Province.

During the eMTCT QIC there were two S2S quality improvement (QI) technical advisors who were overseeing seven health clinics each, therefore, health clinics from both were chosen. Nine health facilities out of the 14 eMTCT QIC implemented sites were selected for the research study. Health facilities were selected according to clinics belonging to each of the two technical quality improvement advisors, cluster areas and the distance apart, which was to make travel easier. Clinics selected for data collection were nine of the 14 health facilities where the QIC was implemented. Those clinics were Ntseshe, Kotana, Macibe, Ndabakazi, Nozuko, Hebe-Hebe, Tutura, the Butterworth Gateway Clinics, and Nqamakwe CHC.

The researcher anticipated conducting two focus group discussions on separate days with a total number of four participants for focus group discussion one, and eight participants for focus group two. Six of the participants could not attend due to unforeseen circumstances. Three individual semi-structured interviews were also conducted and all questions that were asked in the focus group discussion were answered by the third individual interview and there was then no need to continue more interviews.

3.4.1. Inclusion criteria

Inclusion criteria are all the characteristics that participants must have to be included in the research study (Burns & Grove, 2011:291). The inclusion criteria used in this study were healthcare workers who were part of the eMTCT QIC program during the time January 2013 to March 2015 at the health clinics and at sub-district level, Mnquma sub-district, Amathole District, Eastern Cape Province.

3.4.2. Exclusion criteria

The exclusion criteria were the healthcare workers who were not part of the eMTCT QIC program and not exposed to the quality improvement methodologies during the time January 2013 to March 2015 at the health clinics and at sub-district level, Mnquma sub-district, Amathole District, Eastern Cape Province. Butterworth Hospital, High view, Ibika and Dr CL Bikitsha clinics were excluded.

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3.5. Data collection tool

The most common data collection methods used in qualitative studies are done in the form of interviewing participants, conducting focus group discussions, observing participants and examining written text (Burns & Grove, 2011:85). In this research study, a pilot study interview was conducted first, followed by two focus group discussions and three individual in-depth semi-structured interviews.

An interview is described as the communication between people for a specific purpose with a specifically agreed topic. There are three types of qualitative research interviews, namely structured, semi-structured and unstructured. An interview guide with semi-structured, open-ended questions with probing words were used during the data collection. Semi-structured interviews are more flexible and organic in nature. This type of interview approach is described in Tracy (2013: 139) to be more creative, adaptable to ever-changing circumstances and to cede control of the discussion to the interviewee. It is an advantage to use this type of approach because it allows for more emic, emergent understanding to blossom and the interviewee`s viewpoint can be heard without any disturbance (Tracy, 2013: 139).

Five open-ended questions (Annexure A) were developed that were used in the pilot interview, focus group discussions and in-depth individual interviews. The questions were aligned with the three research objectives as well as Scheirer and Dearing's, (2011:2061) Conceptual framework for sustainability for public health programs based on Shediac-Rizkallah and Bone (1998) to identify possible factors that influence sustainability in an organisation (see Figure 5).

The QIC design, collaborative program and broader community design was projected during the questions (see interview guide). Probes were made by the researcher to obtain further information. The interview guide and interview process were in English and understood it well. Participants could follow and answer the questions very well.

3.6. Pilot study

The researcher conducted one pilot interview and the participant was purposively chosen because she was previously involved in a clinic-level quality improvement project and was currently involved in sub-district quality improvement projects. An

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interview guide with semi-structured, open-ended questions and probing words were used. The study supervisor assessed the interview skills of the researcher and only some probing words were changed to fit the research questions. The data of the pilot study was analysed to see whether the objectives of the study were met. The findings were not included in the main study.

3.7. Trustworthiness

Trustworthiness is the ability to rely on trust, honesty and provide something that is right. The researcher used Lincoln and Guba's model (1985) to establish trustworthiness of the study. Trustworthiness according to this model is the truth-value of the study where the researcher interpreted the true and accurate experience with the participants. The criteria for trustworthiness for qualitative studies according to Lincoln and Guba, (1985) are credibility, transferability, dependability and confirmability. The elements of trustworthiness that the researcher used in this study are discussed below.

3.7.1. Credibility

Credibility refers to the true findings and interpretations of the study that can be judged and believed by others. To ensure credibility, the researcher had engaged with her participants during implementation of the program, during the selection of the participants and during the data collection until data saturation was reached. The researcher also stayed longer in the field to make sure that the data collection was true reflection of the participants' experiences by confirming some information with participants that was not clear. The researcher used summarising and reflection-interviewing skills during the data collection to make sure that the response of the participants was correctly understood. Two different data collection methods were used, namely focus group discussions and individual interviews to explore the perceptions of the quality improvement teams of the eMTCT QIC.

Furthermore, the researcher used bracketing to ensure credibility of the findings. Bracketing is described as a process where the researcher sets all pre-existing knowledge, ideas and information about the phenomenon aside so that the true-life

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experiences of the participants reflects in the data collected (Burns & Grove, 2009:553). Data collection was also done in a private boardroom away from the busy health clinics to give participants the freedom to be interviewed without any disturbance.

3.7.2. Transferability

The researcher ensured that she stayed in the field until data saturation was reached, therefore data collection was intensively described according to the real-life experiences of the participants. The researcher believes that given this rich description about the phenomenon, it will allow the readers to have proper understanding about the phenomenon so that they can compare their experiences of similar situations. In this study, it may be possible that the outcome of these findings about program sustainability can be shared with other organisations who are doing similar programs.

3.7.3. Dependability

Dependability in qualitative research can be defined as data over time, meaning that it is an evaluation of the data collection, data analysis, data interpretation and data reporting. All steps of data over time were well-documented by the researcher throughout the research study. The interview guide with all the same questions and probing words were used on all in-depth individual interviews and focus group discussions during the interview process of all participants. The supervisor and the researcher made field notes during the interview process about important statements made by participants.

3.7.4. Confirmability

Confirmability is the last criterion of trustworthiness that was established by the researcher. This has to do with the level of confidence and these research findings were only based on the participants' experiences and own spoken words and not the views of the researcher. The researcher made sure that the findings, conclusion and recommendations were supported by rich data and that the findings were a true reflection of the participants' experiences by the means of verification of data with her supervisor. The researcher further ensured confirmability by including her supervisor

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to be part of the focus group discussions for guidance, where she also took field notes. An audit trail technique was used where the researcher kept notes of the process of data collection, data analysis and the interpretation of data. The coding, themes and sub-themes were discussed with the supervisor before final decisions were made. Themes were also chosen based on the researcher`s long engagement with participants during the program implementation. Some of the participants' words were quoted.

3.8. Data collection

In qualitative studies, the important data collection methods are done in the form of interviewing participants, conducting focus groups, observing participants and examining written text (Burns & Grove, 2011:85). Semi-structured interviews were conducted with three participants from the sub-district office which lasted between 20-45 minutes. Two focus group discussions were held at a private venue near the sub-district office and not at the health clinics due to the fact that space was a problem. Data collection was done through focus group discussions, individual semi-structured interviews and field notes.

Prior to the interview process, the researcher requested from S2S strategic information to generate a quality improvement attendance list during the period January 2013 to March 2015. Nine of the 14 health facilities and participants were purposively selected by the researcher according to equal quality improvement implemented sites by quality improvement advisors, health facility clusters and easy travel between health facilities. After the Eastern Cape Ethics approval, the researcher had permission from the Mnquma sub-district manager to contact the selected participants via their manager at the health facility. All participants chosen for the study were contacted by the researcher and the research study was explained to all. Out of the ten participants that were selected for each focus group discussion, three could not make it due to annual leave, one was retired and one was unable to attend due to large clinic volumes and staff shortages.

A week before the data collection, a WhatsApp group for each focus group discussion was created to remind every one of the date, time and venue of the data collection. After all the negotiations, each of the participants received a transport allowance and attended the focus group discussions at a private and quiet boardroom at a guest

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house in Butterworth. Tables were arranged to create a relaxed atmosphere. Light refreshments were served before the focus group discussions and individual in-depth interviews. The researcher was joined by her supervisor on the two focus-group discussions. The supervisor was also the field note-taker and operated the audio tape recorders, conducted one in-depth individual interview and guided the researcher throughout the data collection process.

Two audio-tape recorders were used during the interviews. All participants completed a signed attendance register that included the participant's name and surname. date of birth, gender, race, job title, facility name, employer and contact details. Each participant received a unique code number that ensured confidentiality of real names. These codes were placed on their signed consent forms. Coding for focus group discussion was [FGD] and for individual interviews was [ID] and with each a number.
Focus group discussion

The researcher conducted two focus group discussions with four participants in the first focus group discussion, and eight in the second which lasted between 60-90 minutes. A focus group is described in Burns and Grove (2009:513) as a setting that is permissive and non-threatening, where participants' perceptions can be explored about a specific focus area. In this research study, the researcher explored the quality improvement team`s perceptions of sustainability of the eMTCT Collaborative Improvement program.

An advantage of a focus group discussion is that group dynamics can guide the healthcare workers in this study to express, clarify and share their views of the specific topic and they can add-on to what others are saying about the topic. A focus group can also provide a sense of safety because the group is small (Burns & Grove, 2009:513). The total number of participants can be between three and 12 participants who interact with the researcher and other participants in the group to provide input on the research topic (Tracy, 2013:167).

One disadvantage of a focus group is that some participants will feel uncomfortable talking within a group and withhold some experiences, especially if topic involves great confidentiality concerns (Neuman, 2011:459-460).

In these groups there were different cadres in the health clinics from professional nurses to community healthcare workers. In focus group one, only four participants

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attended but cancellations were made due to unforeseen circumstances before the focus group discussion. A total of eight participants attended the second focus group discussion.

The research study was explained to the participants and informed consent for interviews and audio-taped recordings were given by everyone. One participant who was sent as a replacement for the selected participant had to unfortunately be excluded from the study because she was not part of the quality improvement collaborative. The participants were assured that participation was voluntary and that they can withdraw from the study at any time. Although the local language is Xhosa, interviews were conducted in English and were well-understood. The QIC support visits and learning sessions were all conducted in English and there was never a problem. Participants were able to respond to the questions well. The focus group discussions were guided by the interview guide (Appendix 4) and based on the research objectives of the study. Open-ended questions with probing words were used during the discussions. Participants were given a fair chance to respond to questions, The QIC design and QIC program were projected on the wall to guide the discussions. It was not necessary to follow up participants after the focus group discussion.

3.8.1. Individual interviews

In qualitative studies interviews range from semi-structured to unstructured, where a fixed set of questions is used guided by open-ended questions with some probing words. The same interview guide with probing words and open-ended questions that was used during the focus group discussions were used to conduct individual interviews. Participants were audio-taped with their informed consent. Three individual in-depth interviews were conducted, and all three participants were from the sub-district office; two were clinic supervisors and one was the sub-district manager.

3.8.2. Field notes

Field notes are notes, and information recorded by a researcher during or after observation of a specific phenomenon that is being studied. LoBiondo-Wood and Haber (2017:276) described field notes as a short summary of observations of the participants during the interviewing process, whether individual or focus group discussions, where the researcher records and interprets these activities. Field notes were mainly taken by the supervisor and the researcher during the interviewing

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process of the three individual interviews and two focus group discussions. Interviews were done in English because it was not necessary for any translation.

3.9. Right to confidentiality and anonymity

The right to self-determination and our respect for autonomy for the participants was assured throughout the study. Selected participants were informed about the research study and what it entails. Participants made their own informed consent and without interference by anyone. After informed consent was obtained from participants, only then did the participants join in the group discussions and individual interviews. Participants were also informed that participation in the study was voluntary and that they could withdraw at any time during.

The researcher assured confidentiality and anonymity of participants at all times during all phases of the research study. Participants were informed that their real names would not be used in the study but that each name will be linked to a code name to assure confidentiality. They were also informed that the findings of the research will be used in the research study and will be shared with the research supervisor. Participant information was stored on a password-protected computer. Data collection of participants was conducted in a private boardroom at a guesthouse without any disturbance.

The right to protect the participants from discomfort and harm was done by informing the participants that they could withdraw at any time from the interview or focus group discussion if they felt any discomfort. Participants were also informed about what the study entailed before any consent was given to participate.

3.10. Data analysis

Creswell, (2009:183) describes data analysis as a process that involves the preparation for the data analysis, conducting different analyses, moving deeper to understand the data, representing the data and making an interpretation of the larger meaning of the data. The analysed data was obtained from the three semi-structured individual interviews and two focus group discussions with a total number of twelve participants. Colaizzi`s method, as described by Sanders, (2003, 14:292-302) to

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analyse qualitative data, was used in this study. Colaizzi`s method of data analysis is an approach that was developed in 1978 to interpret qualitative research data that is often used in medicine and social sciences. This approach is to identify information and organise it into themes or categories. The Colaizzi's framework has seven steps are applied in this study.

3.10.1. Step 1 – Acquiring a sense of each transcript

The researcher and the supervisor took field notes during data collection of the individual in-depth interviews and the focus group discussions. Important notes and information were noted down during data collection. All audio tapes were transcribed by Leigh Story, but the researcher also listened to all the recordings many times and transcribed it alongside to make a comparison with the transcriber's details. After each transcription by Leigh Story, the transcript was send to the researcher for any terms and other information that were not clear for correction.

3.10.2. Step 2 – Extracting significant statements

After all transcripts were finalised, the researcher read and re-read the transcripts to identify and highlight the participants' experiences as expressed by them. Each transcript was analysed to identify the important statements that told each participant's story about the phenomenon. These significant statements were manually highlighted with a colour-coded pen in the text of the transcript.

3.10.3. Step 3 – Formulation of meanings

The researcher then formulated more general statements or meanings for each of the significant statements as mentioned in step 2. A full list of formulated meanings was provided. The researcher and the supervisor agreed upon the formulated meanings to ensure the trustworthiness of the study.

3.10.4. Step 4 – Organizing formulated meanings

The researcher then arranged all the formulated meanings into clusters to develop themes. Formulated meanings were arranged into theme clusters, which were then collapsed into emergent themes. All these decisions were discussed with my supervisor to ensure that the interpretive process was clear and accurately described.

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3.10.5. Step 5 – Exhaustively describing the investigated phenomenon

Colaizzi`s framework identifies the need to integrate all the resulting ideas into an exhaustive description of the phenomenon. The exhaustive description was presented by the researcher in a narrative form integrating the themes and sub-themes that create an overall structure that consisted of all the elements of the phenomenon. This was sent to my supervisor for feedback and validation.

3.10.6. Step 6 – Describing the fundamental structure of the phenomenon

In this step, Colaizzi (1978) advocates that the length of the exhaustive description must be reduced to an essential structure. This structure was revised by the researcher and reviewed by supervisor.

3.10.7. Step 7 – Returning to the participants

The final validation of the data analysis of Colaizzi`s framework is where the researcher visited the participants and provided them with feedback about the themes and sub-themes to obtain confirmation of their true-life experiences about the phenomenon.

3.11 Summary

This chapter summaries the process of how the research was conducted which describe the setting of the study, the research design, the sampling and population ,the data collection tool and collection methods, trustworthiness, ethical consideration, data analysis and also the pilot interview.

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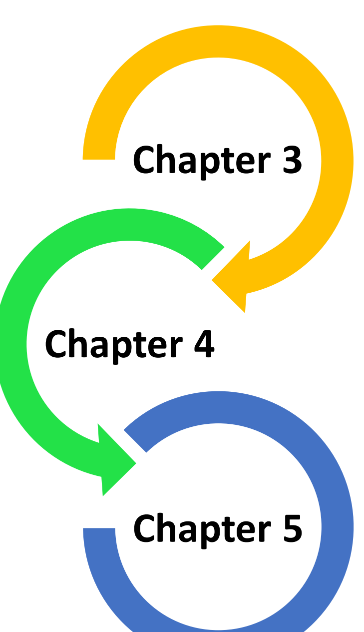

The previous Chapter summarised the research methodology used before, during and after the data collection, highlighting the main ethical considerations

In the next chapter, the findings of the research study will be presented that will focus on the demographical data of the participants and themes and sub-themes emerging from the interviews and focus group discussions.

The final Chapter will form discussions conclusions and recommendations emerging form this study

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4. CHAPTER FOUR
STUDY FINDINGS

4.1. Introduction

The aim of this chapter is to summarize the main findings arising from the data collection that was presented in chapter three. The data in this chapter is presented in two sections. Section A describes biographical information of the participants who were interviewed. Section B focusses on the themes and sub-themes that emerged from the interview data. There were two focus group discussions with a total number of 12 participants and three individual interviews. To ensure the privacy of the participants, they were each assigned with a number code, either as an individual interview or focus group discussion, for example participant one was referred as 1(FGD1) or 13 (ID) was and individual interview, participant 13.

4.2. Biographical data

The study enrolled 15 participants. The pilot interviewee was a 52-year-old female professional nurse and clinic supervisor. She had the most exposure to the quality improvement methodology. Data from this interview was not included in the research study. The demographic data showed that all participants were Black females from rural Eastern Cape Province, with an age range between 27 and 65 years. Two participants were between 20 and 30 years, four participants between 30 and 40 years, three participants between 40 and 50 years, four participants between 50 and 60 years and two were over 60 years.

Focus group discussion (FGD1) one consisted of four participants with a professional nurse, two data capturers and one community healthcare worker. They were from Tutura, Macibe and Butterworth Gateway clinics. These clinics are the nearest to town and are served by the same clinic supervisor. Focus group discussion (FGD2) two consisted of five professional nurses, two data capturers and one enrolled nurse. They were from the same cluster area clinics, Nqamakwe CHC, Ndabakazi, Kotana and Ntseshe Clinic.

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The individual interview (ID) participants were three and one of them was the sub-district manager, the second was a program manager and the third one was a clinic supervisor; all with more than 25 years nursing experiences.

4.3. Main themes

The main themes were deduced from the objectives and the sub-themes emerged from the focus group discussions and the individual interviews. Individual interviews and focus group discussion categories were grouped together, and 59 categories were identified where 41 were used as priority categories because they fell under the top categories identified.

The four themes included; appreciating the QIC design, program empowerment, community influences and the development challenges to program sustainability. The sub-themes emerged from the categories created from the coded data from the interviews and focus group discussions. Similarities and differences in the emerging data were analysed manually to discuss the sustainability of the eMTCT QIC program within the Mnquma sub-district. The table below indicates the themes, sub-themes and the emerging categories.

Table 1: Emerging themes, sub-themes and categories

Themes	Sub-themes	Categories
Appreciating the QIC design	Emerging Innovativeness	Resourcefulness Collaboration Innovation Acceptance and awareness Process flow
	Teaching and learning	Teamwork Teaching and learning Problem identification Planning Knowledge transferring
Program empowerment	Organizational influence	Sustaining gains Empowerment Change Motivation Program integration
	Staff development	Appreciation Acknowledgement Accountability Competence and confidence Excitement Skills development Staff motivation
	Maternal and child healthcare improvements	Improvement
Community influences	Community stake holders	Cultural influences

		Community collaboration Patient support
Development challenges to program sustainability	Community challenges	Cultural problem Cultural challenges Challenges with stigma School health
	Client challenges	Loss to follow up Client mobility, Lack of cooperation Geographical challenges Disclosure and adherence problems Financial constrains Transport
	Organizational challenges	Staff shortage, System challenges
	Recommendations	Possible solutions Recommendations

4.3.1. Theme One: Appreciating the QIC design

The researcher was able to understand the perspectives of the participants in response to the QIC design which involved the model for improvement, which was implemented at the Mnquma sub-district. Several sub-themes emerged from the data categories, which included emergent innovativeness caused by appreciating the QIC program. Further, the teaching and learning that took place following the appreciation of the design empowered the participants to identify with the design and continue teaching other participants and learning new ways of meeting their goals.

Table 2: Theme one sub-themes and categories

Theme One	**Sub-themes**	**Categories**
Appreciating the QIC design	Emerging Innovativeness	Resourcefulness Collaboration Innovation Acceptance and awareness Process flow
	Teaching and learning	Teamwork Teaching and learning Problem identification Planning Knowledge transferring

4.3.1.1. Sub-theme: Emerging innovativeness

Several categories induced from the data were categorized under the sub-theme emerging innovativeness based on how the QIC design enabled the participants to become innovative (resourcefulness, collaboration, innovation, acceptance and process flow). The participants strongly believed that they were resourceful following

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a good understanding of the design. They were better able to manage the eMTCT program success indicators. The participants alluded to the fact that they used the available resources to meet the needs of the community. There were previously short of resources such as staff shortages, where they utilized other categories of staff and community members in a collaboration to meet the patients' needs. The QIC design allowed them the flexibility to utilize all members of the clinic and the community while engaging with patient needs.

> *"When South to South came to us in 2014, when we were looking to our indicators, we were very wrong, especially in ANC before 20 weeks' pregnancy. Then we started from birth with the program [eMTCT] to be able to manage it properly." Participant 6 (FGD2)*

> *"Let's say for example I was going to complain about shortage of staff. Instead, we must make use of the available resources, we must make use of the available resources without complaining, because you know for example getting the staff is a long-term process." Participant 13 (ID13)*

The design further enabled the participants to develop collaboration within the organization and in the community while dealing with the management of eMTCT in the community. There was good understanding and sharing of the QIC design ideas with enthusiasm of what was learnt within the sub-district.

> *"They [Sub-district/district] are always mentioning the fishbone now, and they are mentioning the PDSA now. The district now is quite aware of the tools that we used to change. That peer sharing of ideas, it was influencing each one. Each one was able to say next time I will be the best who will be presenting [chuckles]." Participant 14 (ID 14)*

The participants seemed to have developed innovative ways of dealing with the challenges in eMTCT indicators. Participant four said that some professional nurses neglect taking viral loads from children, but they all sat down as a team to overcome this challenge.

> *"So, in this case, some nurses are admitting the children. They find out that the parent brought the child, but the Sister didn't take the viral load. So, we sat down and said we're going to have a special professional nurse that's*

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going to deal with the children. Okay, that's the role of the professional nurse. She will make it a point that every child that is entering her care, her consulting room for viral load, that [viral load bloods] are being taken by her. "Participant 4 (FGD1)

On the other hand, participant six also mentioned that there are other cadres from the health team that used different innovative ways to deal with the challenges in eMTCT, for example, instead of giving only health education in the waiting room in the morning, they conducted another session in the afternoon in order to reach a larger audience.

"Oh, and also, I am thinking of like education as she is talking about, the family. As we were doing that PDSA, we have involved lay counsellors to do education each and every day in the morning, and then they will work on its [another] session, because we have got people coming in the morning and then those who come in the afternoon." Participant 6 (FGD2)

Even the community members contributed towards resources by collaborating with healthcare facility members in order to address the challenges in eMTCT when they had their community health committee meetings.

"There is one clinic committee member who is a member of the Quality Improvement team in the clinic." Participant 14 (ID)

Participants six, eight and thirteen mentioned using colour coded labels or stickers as a reminder to staff to follow up clients that are due for viral load blood testing or HIV retesting. This improved the retesting of babies. The design sensitized the participants to find new ways of dealing with the challenges they faced.

"You know with re-test what they did? It was Nozuko Clinic. They devised a strategy of putting coloured stickers for the first visit, for the ANC first visit, those that are negative at first visit. They were having stickers, so that when they [patients] come, we know that we are supposed to re-test them. Even the data capture was registering them." Participant 13(ID)

To improve on the eMTCT program, healthcare workers need to be aware and accept the current problems so that they can plan for improvement. The low rates of retesting had been seen as acceptable as the participants felt they couldn't do much. However, S2S sensitized the participants to the need to have an action plan. This would involve

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more than the midwives by including the enrolled nurses who could assist with triaging the patients while the midwife is busy. The collaboration was seen as an opportunity to improve on the identified shortage of resources.

> Participant eight said*, "Yes, I was going to talk about the retesting rate, because when S2S arrived there, we were very low on the retesting rate. We were very low! So, we did an action plan together with Umbule that we had to do. First of all, retesting was just a midwife's duty. So now we had to train the other healthcare workers that are around, that is the staff nurses and the others, so that as the mothers are sitting there in the waiting area, we can check them whether she is due for retesting or what, so that she can spot check and go to Sister and say she is due for retesting." Participant 8 (FGD 2)*

According to participant fourteen, the clinic staff were also aware that implementation of activities must be taken step by step. The realization that the clinic staff needed to prioritize the identified challenges allowed them to feel capable. They were aware of what needed to be done and would choose to deal with an item at a time. The participants also identified challenges with the flow of information which they streamlined in order to enhance the flow of activities.

> *"They [clinic staff] list the things they want to do, but what is special about them, they are aware that they can't implement all of them at the same time." Participant 14(ID)*

> *"Okay, it started with us [data capturers]. We take the files, the files of the children that are given a follow up day. Okay, these five are going to have their viral load taken tomorrow. We put them aside, and then we take them, we give them to Sister. We have done our part, right? We give it to Sister. Sister makes the point that every child that is due, the viral load is taken." Participant 4 (FGD1)*

Emerging innovativeness enabled the participants to be excited about the design and take ownership of the process and progress made during and after implementation of the QIC program. The participants said that this may enable them to continue with the gains and successes learnt within and in other related programs.

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4.3.1.2. Sub-theme: Teaching and learning improvements

The second sub-theme was teaching and learning which emerged from several categories, teamwork, teaching and learning, problem identification, planning and knowledge transfer. Most of the participants shared their learning experiences during the eMTCT QIC program. They gained a lot of knowledge about the approach of quality improvement on programs that can be beneficial for the client. They could also share their knowledge and experiences with others, especially those who were not able to attend the learning session workshops, modular trainings and any other training provided by S2S.

> One participant said, *"It was Sister who usually attends your sessions, but they will come back and give us the feedback in the facility. We had a challenge with children who had high viral loads, so through your sessions, those children were monitored and sent to the hospital for monitoring. So, I can say that thing [QI learning session workshop] is working for our facility. When you plan, you have in your mind that you want to achieve something, so the learning session is working." Participant 3 (FGD 1)*

The participants, through active participation, could share clinic experiences during learning sessions. The sharing of ideas stimulated the participants to think out of the box during the sessions and after the sessions. Even after the actual training, more teaching and learning continued in the facilities especially those that were not part of the S2S program. The participants made sure that the information was spread to the other health clinics. They developed learning sessions for these clinics and shared information with them.

> *"Another thing that was very important was the active participation. We were sharing our experiences [laughs] during the learning sessions and that peer sharing of ideas, it was influencing each one. Each one was able to say next time I will be the best who will be presenting [chuckles]." Participant 14 (ID)*

> *"If they [S2S] are supporting five facilities for example, when they are doing the learning sessions, they used to call the whole sub-district, even the facilities that they are not supporting, they gained information from the ones that are supported." Participant 13(ID)*

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There were quality coaching visits that were happening on a two-weekly or monthly basis at facility level where the quality improvement teams met and discussed their quality improvement projects with the S2S technical advisor. During these sessions, the participants felt equipped with expectations of the day which allowed preparedness and created enthusiasm to learn. The realization that the mangers need to engage with the participants at different levels enabled them to provide support for each of them.

> Participant three replied*, "The coaching session, you [S2S technical QI advisors] can just come, and then by the time we go to the learning sessions, you guys already equipped us on what was expected of us from that day, and then what we must do." Participant 3(FGD 1)*

> *"In fact, we [sub-district office] are not borrowing, we are teaching our nurses to use the tools for the quality improvement, because not all nurses are at the same level of understanding of this fishbone, five whys." Participant 13 (ID)*

The community healthcare workers who carried out home visits educated the clients and clinic committee members are trained on how to use the fishbone to identify a problem. A fishbone analysis is one of the quality improvement tools in a form of a fish diagram to identify the possible cause of a problem to identify its root causes. This enabled the community health members to be a great resource to better reach the clients, improving access to information. Further, the community members involved in the clinic were utilized to identify pregnant women and children during their community meetings and encourage them to utilize clinic services. Traditional healers also received training so that they could assist the clients who visited them in the community.

> *They (community healthcare workers) go to the schools, they go to the imbizo's, any community meeting, they go there, and educate. We have our community health workers that are at the villages who are going around. One of their responsibilities is to look after pregnant woman, and to a child and to any other, but their main focus should be a child and a pregnant woman. So, they also educate when they are doing household visits. Participant 15 (ID)*

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"Yes, even the clinic committees, I'm teaching them about the fishbone." Participant 14(ID)

The community healthcare workers are trained by clinicians on health topics and on how to perform non-invasive procedures for them to be able to engage with clients in the community. They could do pregnancy tests when going door-to-door in order to improve early booking for mothers. This also enabled the mothers identified to receive information on how they can access antenatal services early, where they can get tested for HIV infection and receive treatment as early as possible and further information on the management of HIV.

"We train those (Community healthcare workers) how to do a dipstick pregnancy test, because it's easy. So, they understand it. So, on their report, that is the door to door home visit, when they meet any childbearing age woman, they will do the dipstick." Participant 2 (FGD1)

"We educated the women now that on this date, so you shouldn't wait for the ANC revisit, but you just only come for retesting on this date" Participant 8 (FGD2)

"We educate even grandmothers, even the husbands, everybody in the waiting area, so that they must know that after delivery, the child should go to the clinic." Participant 11(FGD2)

Participants expressed the importance of working together where everyone is doing their part to improve on their performance. Together with teamwork, participants said that they are doing their planning in the meetings. At sub-district level, they would also have their own team meeting, but sometimes it was difficult for program managers and supervisors to meet regularly because of their other sub-district commitment.

"Then when they [clinic staff] are planning, when they are having their meetings, usually on Fridays there are multidisciplinary team meetings, where each and every professional nurse from each consulting room will be presenting the challenges they have met during the week." Participants 14(ID)

"We have our own team at sub-district, but maybe there it did not work that well, because we're not always there, in terms of meeting together. But we

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would sit, come up with our own, do our own analysis and come up with our own action plans." Participant 15(ID)

Participants indicated that it was not only nurses that were working as a team, but they as community healthcare workers are also involved in the decision-making regarding the care of patients. Further, there was acknowledgement that the knowledge gained on quality improvement, would be utilized beyond the eMTCT program only and they could use the approach in other programs at the clinic.

"Okay, what I can say is that I have noticed in our facility that the community health workers, the nurses, data capturers have been working together. The community health workers, they do refer the clients to the clinic, and then the nurses, they monitor them and then we get our data as the information side.' Participant 1 (FGD)

"It was not only meant for the eMTCT program only. They (clinic staff) were sharing that they are actually using it for other programs as well to assist them, for them to be able to analyse and come up with action plans, and come up with improvement plans at the end of the day." Participant 15 (ID)

Teaching and learning effectiveness was measured by the positive outcomes and the enthusiasm to utilize the program in other areas of interest. The participants were excited about the gains provided by the program and the enthusiasm to apply it to other programs showed a sense of learning in order to apply that knowledge.

4.3.2. Theme two: Program empowerment

The second theme was deduced from the second objective describing the quality improvement team`s perception of the factors that influenced the organisation during the implementation of the eMTCT QIC program. The sub-themes that emerged included organizational influence, staff development, and maternal care and child health improvements. Participants shared their experiences on how the program empowered them, how they became change agents and what things made an impact on their performances in the sub-district.

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Table 3: Theme two Sub-themes and categories

Theme two	Sub-themes	Categories
Program empowerment	Organizational influence	Sustaining gains Empowerment Change Motivation Program integration
	Staff development	Appreciation Acknowledgement Accountabilityx4 Competence and confidence Excitement Skills development Staff motivation
	Maternal and child healthcare improvements	Improvement

4.3.2.1. Sub-theme: Organizational influence

Most of the participants were feeling very happy when they were talking about the sustainability of the program. They believe and are sure that the knowledge, learning and information they gained during the S2S eMTCT QIC program had a great influence on the organization. The participants identified that the tools they have been trained on to improve on the eMTCT performance were still in use. The sub-district also said that they are using the quality improvement tools in their HIV/AIDS/STI (HAST) meetings to report on projects. These tools are also clearly displayed on their walls by the means of graphs to display the clinic data. They have identified a quality improvement champion who continues to ensure that the process is followed and although the clinic is using the quality improvement tools, the clinics need to be followed up to ensure sustainability.

> *"[S2S QI technical advisor] advised us to do the master list in pregnant women, the master list in children for immunisations, and also the master list for children in 18 months' rapid test. Those master lists are still up till right now." Participant 11(FGD2)*

> *"They [the clinics] are using the tools, because when they have their HAST meetings, they are reporting [using the QI tools]." Participant 15 (ID)*

> *"Each facility has a Quality Improvement champion that is championing the program, by the implementation of those tools. They are clearly displayed on*

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their noticeboards, so that when they are discussing the data, they are able to follow the steps that must be used when improving the quality of the program, especially eMTCT." Participant 14 (ID)

"Oh, sustainability. They are still using them [quality improvement tools], but you know, our nurses, they are used to being followed up. We need to make a follow up, so as to sustain whatever South to South did. So, we need to make a follow up, otherwise they are still using them." Participant 13(ID)

Participants were asked their thoughts about the Mnquma sub - district program sustainability and indicated that they managed to 'hold the gains' to keep it going. Holding the gains was the theme for the last learning session where sustainability was discussed to prepare sub-district to plan to continue with improvements after the exit of S2S. They appreciated the input and identified it as important therefore they continued to utilize it.

"Yes. Because one, we managed to sustain for nine months. I am certain that we are going to sustain, especially after that, holding the gains [workshop]." Participant 4 (FGD1)

"We appreciated the support, and people are still holding on, because it's important that we keep on doing this, even though you left, South to South. But the improvement processes are still continuing, they're not stopping." Participant 15 (ID)

"Yes, it is sustainable if we are to put in department resources, as I was saying. It has been sustainable since you left. It was sustainable whilst you were still there, because it was continuing to improve. I think it is sustainable with enough resources. Not necessarily enough, but just resources that you have." Participant 15 (ID)

"You know, another thing that is helping us to sustain what South to South has done, is because there are other NGOs that have come in after South to South has gone, and the [other NGO`s] follow soon." Participant 13 (ID)

There was confidence among the participants after the implementation of the eMTCT QIC that they are now able to improve on their own. The participants felt more organized and their skills improved.

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> *"When I sit down, I said yoh-yoh! This information came from us! We are clever now, we can do these things, because we know these programs, but we don't know the order, how we are going to put them so as to be organised, and then you come up with a conclusion, and you've got to be able to do away from that problem." Participant 6 (FGD2)*

> *"We were able to present, because at first some of us were very scared to stand in front. So, even the presentation skills itself, you [S2S] taught us how to present in a conducive environment." Participant 14(ID)*

> *"I think we as sub-district as well, we were more empowered, the sub-district managers themselves, the program managers, to do this model for improvement." Participant 15(ID)*

Participant two said that change is not easy, and it depends on the type of people you want to change. Participant two further mentioned that change is sometimes difficult especially with the staff members who have been doing things in a certain manner. There was a need for flexibility in order to enable the participants to accept the change.

> *"As they say, change is not easy, but it depends, especially to you're in-charge, your OM [Operational manager)] Our OM is a very flexible person. She is an administrator. So, if you have an operations manager who is like that, you are always at ease to bring the changes and the information." Participant 2 (FGD1)*

> *"It depends on the type of people you are working with at that time. Usually change is not easy, it's not easy. All the time, they are giving us extra work. They want us to do this today, tomorrow they want us to do that. So, it's not easy, but as they say, when we understand, oh, this is going to help us, it does help us. Then it's when we appreciate it, but not at first, no, especially us who are the old people. You want us to change? She said that you said after each question, but at the end, other people, you can't resist it, even them, to give us the report about these changes. They say oh, these old ladies. "Participant 2 (FGD 1)*

There were several positive changes occurring in the organization due to acceptance of the program. The fact that the change influenced even those that seemed resistant

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to change would enable sustainability of the eMTCT QIC program. The gains of this program may be extended to other programs within the organization.

4.3.2.2. Sub-theme: Staff development

The sub-theme staff development emerged from the categories; appreciation, acknowledgement, accountability, competence and confidence, excitement, skills development and staff motivation. Participants believed that they felt more empowered, motivated and excited and that through certain skill developments, they were able to be more confident in what they are doing and that they can be kept accountable for their actions.

Participants appreciated the implementation of the S2S eMTCT QIC program because they gained more skills and were confident that they would make improvements. They felt empowered to develop strategies that worked to meet the targets for eMTCT. They appreciated the enthusiasm shown by the participants during the sessions. This raised their confidence about the competence of their skills and increase in knowledge.

> *"I want to thank you South to South to come here at Mnquma, because the target was low. We didn't care about it. Postnatal, six days, retesting, 18 months, we didn't care. We just accepted the child who comes in, but when you come and introduced this program to us whereby we opened our eyes, and make strategies to work to get these targets. So, we thank you very much. We appreciate it. "Participant 10 (FGD2)*

> *"Although I was not fully part of it [eMTCT learning sessions], I would come, you know, we always have these meetings, but whenever I am part of it, I would really appreciate the excitement and the enthusiasm from the people that were attending timeously" Participant 14 (ID)*

> *"So, it was very interesting. It was so very interesting. We learnt a lot from them. It was so wonderful, it was so wonderful, because you know there is something [the program] that was leading you on what to do" Participant 13 (ID)*

The sub-district went so far by building up their skills and presented a poster at the SA AIDS Conference in Durban in 2015 and 2016. The staff is also motivated by each other, and the managers and stakeholders encouraged the team to give their best.

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This comradery enabled the participants to feel accepted and acknowledged for their work to give their best.

> *"Also, to mention why do we forget about that, that we had a poster that we presented at the HIV conference in Durban." Participant 15 (ID)*

> *"Okay, so what they are doing and what we are encouraging them to do, they must be able to know what their problem is, and then immediately they know what their problem is, then they must be able to know the aim of the change as to what do they want to change from the problem, and what they want to change, they must put it in such a way that it is smart." Participant 14 (ID)*

> *"So, I think that is also motivating them to keep the Models, or the strategies that were introduced to them, because they see that these facilities, they are doing well and we are not doing well, what must we do, and then they benchmark from each other." Participant 13 (ID)*

Being able to work as a team and encourage each other resulted in learning from the other team members on what they are doing and how they are doing it. Identifying with challenges and being able to find solutions had a major influence on the outcome of the project.

4.3.2.3. Sub-theme: Maternal care and child health improvements

The last sub-theme under program empowerment is the maternal and child healthcare improvements that emerged from one category, improvements that were a combination of innovation and measurements of the program. Innovations were new activities tried and tested to see if there were any improvement through regular data management. During the interview process, participants spoke widely about their innovations and how the eMTCT program improved ever since.

> *"So, we started from there when we started with those indicators [eMTCT], then it grew as that woman came for prevention family planning, then we do the pregnancy test, then once we identify that she is pregnant, immediately you book, then we do all the things that need to be done. So, it starts there when they don't miss. So, when we do that, it helps us a lot because we have been improving from that." Participant 6 (ID)*

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Another improvement in the 18-month's HIV re-testing of HIV exposed infants was mentioned by participant seven. The follow-up of mothers after delivery is still a challenge in the maternal and child healthcare pathway.

> *"Also, in Kotana Clinic, we have made an improvement about 18-month test on children." Participant 7 (FGD2) "I think that all facilities here in Mnquma have the similar problem [(six days postnatal follow up visit of mother and child]. We couldn't reach these targets, but those facilities which are supported by South to South are better now, are improved actually. We even get outliers. Participant 7 (FGD2)*

Many health clinics reached the target in the eMTCT indicators by using the quality improvement methodologies. There were targets that had been set by the Department of Health for the ANC retest so that the clinics could improve from form 20-29% up to 70%. The participants did not feel capacitated to reach these targets. However, after the S2S workshops there was a tremendous improvement for 20 weeks' retest by using community health workers to retest at home.

> *"First of all, you guys coached us and showed us how to go about it. Okay, then we said no man, retest, we usually have 29%, 20% something, and the target is 70%, and they expected us to reach the target, how? Still, we sat down, then we did our PDSA, whatever things that you guys told us. We managed to reach ANC retest". Participant 4 (FGD1)*

> *"Since I have attended South to South workshops, my clinic made an improvement, because I saw that the problem in my clinic was the children under five years." Participant 1 (FGD1)*

> *"Yes, 20 weeks has improved because we used those community health workers to do the testing at home, as well as we are testing them immediately when she comes and comes for family planning." Participant 8 (FGD2)*

Further, since the initiation of the QIC program, more children born from HIV positive mothers became HIV positive after birth. The excitement from the participants were that there was an overall reduction in the Polymerase Chain Reaction (PCR) positivity rate at their health clinics. The PCR test is a routine care for all babies born to HIV positive mothers to ensure early diagnosis of HIV infection.

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"So, if you have started with this FDC, you continue giving it. So that program, the reason is just to improve the transmission of the HIV from the mother to the child. Because of that, I can say that it has worked, because in my facility, I think we last had a PCR positive child in 2013 or 2014." Participant 2 (FGD1)

"We (Butterworth Gateway) ended up being less than 2 % (PCR)." Participant 4 (FGD1)

"Yes, we haven't dropped. Even now with our annual review, we had a zero transmission, PCR positivity, hence we are having the PCR at zero, before the last financial year." Participant 15 (ID)

Participant thirteen mentioned with great excitement in her voice, and also with pride, that there was an overall improvement on all the indicators at sub-district level. The reason for the improvement, according to participants, was the use of the S2S eMTCT QIC design. There was improvement in the ANC visit before 20 weeks and the PCR positive indicator dropped to zero.

"So, we improved on first postnatal visit within six days. We improved on ANC first visit before 20 weeks. We improved on PCR. It was worse with PCR. We had a PCR positivity rate that was high. It was so high. So, we measure ourselves with PCR that PMTCT is working. So, it was so high, they introduced these Model, and then it dropped and it dropped until, I'm sure when they left, it was less than 1% when they left." Participant 13(ID)

"Okay. From 2013 up until now, when we are comparing, we as the Mnquma sub-district management team, when we are comparing the baseline from 2013 and now, and 2017, we have been gradually improving, until such time that we have turned green in our reports now. We were red, and then we turned amber. Now with ANC before 20 weeks, ANC retests, PCR positivity rate, I can mention many PMTCT data elements, we have improved a lot. "Participant 14 (ID).

4.3.3. Theme three: Community influences

Many participants mentioned that there was overall improvement in their eMTCT program, but without key stakeholders it would not have happened. This theme was deduced from their objective which sought to understand the community influences

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during the implementation of the program. Different factors in the community had an influence on the eMTCT program of Mnquma sub-district.

Table 4: Theme three subtheme and categories

Theme Three	**Sub-themes**	**Categories**
Community influences	Community stake holders	Community collaboration Cultural influences Patient support

4.3.3.1. Sub-theme Community stake holders

The sub-theme emerged from the categories, community collaboration, cultural influences and patient support. The involvement of community members in the healthcare clinic and outside in the community made a positive impact on the eMTCT program of the Mnquma sub-district. Traditional healers and other members, for example the women of the chiefs, were trained in topics of patient health problems and they were also involved in decision making involving the care of patients or clients. Due to the fact that the chief's wives were respected in the community, they were able to provide health education whenever they had meetings with the community health members.

> *So, one of the actions that we have done was to go and educate the chiefs, the women out there. They call it imbuvayo mkosi Kasi. It's women who are married to the chiefs. So, they talk to them, and you know, they are respected in their own areas, and so they will be embraced in whatever they are saying, if it comes through them, as well as in terms of the campaigns, when we do campaigns and education around ". Participant 15 (ID)*

> *"Even us[clinicians], if we have got an MDR [Multi-drug-resistant tuberculosis (MDR-TB) is a form of TB infection caused by bacteria that are resistant to two or more first line anti-TB medication] client that is not coming to clinic to take treatment, then we have to involve that clinic committee to inform because that client is going to make a mess to the community, is going to infect, because they are attending ceremonies around the community and affect the other people not knowing. So, the chief of the area must be able to*

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be responsible, so we work together with the community like that. "Participant 6 (FGD2)

When the patients visited the traditional healers, the traditional healers were able to accompany the patients to the clinics emphasizing the need for the patients to take antiretroviral medication in addition to their 'Muti' (it is a term for African medicine and sometimes used in traditional rituals). Sometimes the traditional healers were invited to attend workshops to inform them the importance of clinic activities concerning patients care. The collaboration assisted with creating a referral chain from the traditional healers to the clinic and back to the traditional healer. This way the clinics can observe patients carefully in the community.

"To emphasize about traditional healers, now we see the difference because we involve the traditional healers in our facility programs, but before, the people they came and tested, and if the people tested HIV positive, they don't come to take treatment. They go, they run to the traditional healer to use muti. Now we involve the traditional healers, now they are helping us a lot." Participant 10 (FGD2)

"Sometimes they [traditional healers] are being called for workshops, and they are being told the importance of what we are doing, and they go back, because they feel sort of involved and then they feel like they are going to act. They say then if someone comes to you with a problem, for example if it is Tuberculosis (TB), she comes to you and you suspect, let us tell you the signs of TB. If it is TB, she must come to us, and then she will come back to you, you refer her to us and then we refer back to you, so that we can work together. "Participant 13 (ID)

Regular clinic committee meetings were held where all stakeholders (clinic staff, community healthcare workers, traditional leaders and any other people of the community of importance) were invited. This was meant to inform the community stakeholders regarding what is happening in the clinics and the challenges the healthcare workers were facing meeting the eMTCT indicators. The community stakeholders would then bridge the gap by informing the community members of the need for eMTCT management.

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"Okay, at our facilities, we have clinic committees, so they have got meetings every month. So, as the planning like of a district maybe, the clinic committee must know and be able to understand what is happening in our facility, what are the problems, what are our indicators? For example, if we just complain that oh, the people of Ndabakazi, they don't come for immunisation for example. When they have got meetings at Umkulu [chief], then that's when they are voicing out that we have got problems, like the children not attending clinic for immunisation." Participant 6 (FGD2)

"With the community, there are, we have the traditional governance structures that are in our clinic committees. For instance, the traditional healers, there is a representative of traditional healers in our clinic committees now, because we have identified that there is a gap, because there is no representative of the traditional healers in the health team. So, now that we are having the traditional healers in the health team, we are able to know their concerns now, and then we are able to bridge the gaps. Initially we were having a gap, because use of traditional medicines now has reduced." Participant 14 (ID)

Community healthcare workers' (CHW`S) collaboration played a vital role as described by participants in assisting with the improvement of patient care. The fact that they received training on counselling and testing of HIV clients, allowed them to reach a bigger clientele at their homes than just in the clinics. The CHW`s visiting the clients at home enabled them to test and retest clients who did not want their status known in the clinic. They were also able to mobilize the clients that defaulted. Further, the patients receive ongoing support from CHW`S on their home visits before during and after the testing and during motherhood after birth.

"Then with the family, okay, with the family we have got community health workers that are based in the community, which, their activities are basically in homes. They go door to door, they go to families, and they go to homes. So, for somebody who doesn't want to be seen with whatever, for example, she doesn't want to be tested in the clinic, so they have been trained now on HCT, and then those community health workers can do home-based and other procedures, and make a follow up. Then they also sort of mobilise our clients that are defaulting, to come to the facilities". Participant 13 (ID)

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"With the post monitoring, community health workers, the focal person or professional nurses of that facility, and also, it is important to let the siblings know that the woman and the baby are under treatment and they need support." Participant 11 (FGD2)

Then we give the community health worker that mother to visit, to do a follow up visit to that mother through until the mother gives birth." Participant 10 (FGD2)

The collaboration between the healthcare workers and the community assisted in the improvement of the target indicators, allowing the midwives to focus on providing other services. Further, the healthcare workers were able to manage the staff shortage by utilizing the available resources and the integration of cultural practices into healthcare allowed the patients to be more accommodating to modern medicine than just receiving treatment.

4.3.4. Theme Four: Development challenges to program sustainability

Theme four emerged from the empirical data. There were certain challenges observed by the participants as development challenges. This theme emerged from the four sub-themes induced from the data which included community challenges, client challenges, organizational challenges and recommendations. The researcher observed that most challenges experienced mentioned by participants were the client challenges that can sometimes lead to the non-sustainability of the eMTCT program.

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Table 5: Theme four sub-themes and categories

Themes Four	Sub-themes	Categories for Individual Interviews and Focus Group Discussions
Development challenges to program sustainability	Community challenges	Cultural problem Cultural challenges Challenges with stigma School health
	Client challenges	Loss to follow up Client mobility, Lack of cooperation Geographical challenges Disclosure and adherence problems Financial constrains Transport
	Organizational challenges	Staff shortage, System challenges
	Recommendations	Possible solutions Recommendations

4.3.4.1. Sub-theme: Community challenges

Participants indicated that in their community it is a challenge to get the mother to the health clinic within six days after delivering her baby. This was due to the belief that they have to stay in the house until the umbilical cord of the baby falls off because it is part of their culture. Despite the health education, the eMTCT indicator for retesting within six days has not improved to the healthcare workers' satisfaction.

> *"The indicator that we are still striving to reach the target is postnatal within six days. I'm sure it's because of cultural problems within six days, because within six days, the mother is not allowed to go out. We have been educating and educating, but we are trying. It has slightly improved, but not to our satisfaction, the postnatal visit within six days." Participants 13 (ID)*

> *"Then with families, the postnatal visits at six days, it used to be a challenge as well because the six days, with our culture, it's taboo for a woman to roam around within eight days. It's acceptable for them to go out after eight days, post-delivery." Participant 14(ID)*

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The antenatal visit before 20 weeks was a challenge due to the belief that a woman should not speak about her pregnancy in the early stages or she will have a miscarriage. This then translates to mothers not coming to the clinic to make the first antenatal visit as early as possible because they will make it known that they are pregnant.

> *"Then if the mother knows that she must come to the clinic before 20 weeks, but if the cultural beliefs and norms, she will not come because it's very early for her to report that she is pregnant. Maybe she may have a miss abortion, so that doesn't allow her." Participant 2 (FGD1)*

Participants, one, three and four replied with anger that the traditional healers lied to clients that they can be cured of HIV if they use their medication, for example the body wash *"Isiwasho*" (it is a traditional belief that when you wash or bath in this water, a person will be cured from any problems especially those who do witchcraft). This results to the clients not coming for follow up visits because they were told that the body wash would cure them. The belief that the disease is caused by being bewitched by the neighbour means that the medication given to then is not seen as useful and that they must use traditional medicine to protect them (*isicakathi*).

> *"Body wash. You try to talk to her about, like you ask her for her book and her card. I take it. I will see that yes, she got tested in this book, and found HIV positive, and initiated. She never came for a follow up date. That time, she went to the traditional healer because the traditional healer said this disease is curable, you see, and then their death**."** Participant 1 (FGD1)*

> *"Traditional healers, oh ([laughs) I think it's our big challenge, because most people, they go to the traditional healers, and ending up not taking their treatment. Those people told them lies, that you do not have this virus; your neighbour or something bewitched you. So, they have that mentality, yes." Participant 3 (FGD1)*

> *"Traditional healers. Yoh, those ones! We sent our community health worker, that person is not known there. Okay, sometimes she is from Mission. Okay, you go, you send the community health worker of that area. No, she said she stopped taking her treatment because she is taking the "Isiwasho", that water*

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> *from the traditional healer. So then okay, the traditional healer said that I am cure, I am no longer HIV positive, so I decided to stop the treatment, you understand?" Participant 4 (FGD1)*

The family, especially the old people or elders, believe it is culture that the young ones [children] are disrespectful by not listening to their advice. The main influence on advice to the women are the elders who pass myths and beliefs contrary to the health advice given. The women are expected to listen to the advice provided and not answer back to the elders. Therefore, not leaving the house and feeding options are dictated by the in-laws rather than being a mother's decision.

> *"They [parents/family] are the key people that are influencing, because the pregnant woman is part of the family. So, if their beliefs, it's worse when you are married, with us, in our Xhosa culture. If you are married, then you just need to listen and not answer back. So, the old women would influence their own ways of doing things. Don't go there at this time, don't do this, feed the baby with a bottle. The baby is hungry, you see, and because they are respecting their in-laws and their elders, so they would listen to them at times." Participant 15 (ID)*

Patients still experience challenges with stigma because they fear that family will find out or refuse disclosure due to stigma. However, the stigma was seen to be reducing as the families involve the community.

> *"Disclosure. Yes, it's improving, though there is still a slight sort of stigma, but it is improving with patients now. They do want us to tell their families." Participant 13 (ID)*

Participants shared that one of their biggest challenges was teenage pregnancy and that Department of Education policies did not allow health staff to do certain activities at schools, for example HIV testing. It becomes a challenge with early booking for schoolgirls who do not want to attend and the parents who are not aware that they are pregnant. However, the policy has recently changed allowing the healthcare workers to go into the schools for family planning and health education.

> *"Also, for example early booking, we have challenges because most of the children are schoolgirls, so we have the challenges because they are*

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> *teenagers. They don't want to come to clinic, and also, we have that thing of not allowing us to go to the schools to offer the services. So, we have to wait for them to come to the facilities, and they don't come to the facilities. So, we have a challenge from them, and also, they hide their pregnancy. For example, they don't even know at home that she is pregnant, not telling anybody, so she is just alone. So, we have got a problem because we have got a lot of teenage pregnancy." Participant 6 (FGD2)*

> *"Then with school health, they [clinic staff] had the right to go there, but there was that policy which was hindering the school health nurses to do HIV testing, as well as pregnancy testing in schools, as well as family planning. I came out from the perinatal meeting yesterday very glad when it was announced that now the policy has changed. So, the school health nurses now have to do the pregnancy testing in schools, the HIV testing in schools, as well as the family planning in schools. So, I came out very pleased yesterday from that perinatal meeting." Participant 8 (FGD2*

Teenage pregnancy is high within the schools. The communication skills between the healthcare workers and the schoolgirls who attend the clinic seems to be a big challenge. Therefore, getting information from the teenagers regarding their pregnancy is a problem.

> *"I would say that the main challenge is that we don't get, as we are trying by all means, we don't get those pregnant women at the early age, but we are trying. Like we have got most of the pregnant women are the school teenagers. So, it's not easy to get them. They will just come late and she will just be changing her face, so as to close that you are not going to ask anything, and just going to keep quiet when you ask questions. So, it's a challenge, and still a challenge." Participant 11(FGD2)*

According to participant six and eight and twelve, HIV positive schoolchildren had challenges with adhering to their ART medication and follow-up visits. These children would appear in the clinic one day and indicate that the stigma and migration (patients move from the one area to the other) is the main cause of the inability to follow up. The medication seems to make the children drowsy and this causes the schoolchildren to default.

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"Our problem was from school, finding out the child is pregnant, and then she is HIV positive. Then she would only come once to the clinic, and then she says I am afraid of the other children, I'm not going to take pills, or make stories and all that. Then we end up with lost to follow, or maybe the child has gone back home to Umtata, or she was staying with other children. It's not her area this one, she is here to study. That affects us a lot." Participant 12 (FGD)

"As we are talking about the community, even at the school we have got challenges because we have a child who is taking treatment. Now I don't know, because we don't have the youth and adolescent services [at the clinic]. So, when the child is coming to the clinic, she will come with her friends, and when she goes she will be afraid to take the treatment. They [clinic staff] said that even at school, when they are attending there at the school [for visits], they [school children] are coming there drowsy, and then the teacher said no, this girl is taking treatment." Participant 6 (FGD2)

Participants indicated that at the time of the interview, there was no school nurse to render the service at Nqamakwe, which has a very big service area. There is the hope that the new policy will allow the participants to render services in the area.

"In Nqamakwe, there is no school nurse. So, our school health services are lacking. Maybe now that there is a new policy that we must even visit schools to render the reproductive health services and test." Participant 14 (ID)

4.3.4.2. Sub-theme: Client challenges,

There are a few barriers that clients are experiencing which affect the sustainability of any program. Participants shared their views about those barriers which were, inability to follow-up the client, client mobility, lack of client cooperation, disclosure and adherence problems that can be due to stigma, far distances travelling to clinic including transport issues and financial constraints to get to clinic.

In addition, clients moved from one clinic to another because they are afraid of their HIV status and the non-assurance of the confidentiality around it. Further, the clients do not accept their status and are not in a position to disclose to the family. The clients then do not take their treatment as required.

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"We also had the challenge that the clients were moving from Kotana Clinic, and we asked them why they are moving from Kotana Clinic. They said we are afraid of our status. We educated them that everything that we are doing here is confidential ". Participant 7 (FGD2)

"Then about the patient, the patient itself, the major problem with the patient, they do not accept their status. That is the only thing. That is the main problem. In spite of all the counselling which has been done, they do not accept their status. The problem is that they don't disclose, so it's not easy for them to send somebody, because it happens that somebody has been sent to take the treatment. When you want to find out what is the treatment, he doesn't know. So, they have those fears." Participant 2 (FGD2)

A few factors were raised by participants about the lack of patient cooperation for follow up visits, management and antiretroviral treatment for themselves and their children. The family support is lacking and many times children do not receive the required health care.

She will leave the child with the grandmother or any caregiver of the child. So, the child will be mismanaged, and we encounter each and every time the child came to the clinic, we have many collective diseases, and we have to get consent to provide HCT for the child." Participant 7 (FGD2)

Challenges were also raised that women do not book on time or never booked during their pregnancy. The underutilization of basic antenatal care services early on or at all results in them delivering without treatment during pregnancy.

"There is another woman from a clinic. She got pregnant with the second child, and the first child was about to be one year, and then she was pregnant. She never booked. She visited Ntseshe clinic on the third day after delivery. She delivered at home as well, never booked, and then we had to start a fresh doing HCT, doing PCR to the baby." Participant 11(FGD2)

Raised during the interview by CHW, is that the patients they referred to clinics in the community do not cooperate; the clients do not want to attend the antenatal clinic before 20 weeks, even after being referred from the community by the community health workers.

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"*The problem now is these pregnant women, these before 20 weeks, hey, they don't want to come. They don't want to come. We get them and do a pregnancy test and find that she is pregnant, and refer her immediately to the facility, but they don't want to come. Unless we tell them, I will take Sister and then she will be afraid and go to the clinic having six months now, because she doesn't want to go to the clinic in two months' time. So, we are still having a problem with that." Participant 1 (FGD1)*

Participants raised concerns that some patients gave incorrect information regarding contact numbers because they do not want to be followed up. When they are contacted by the clinic staff they would not answer the calls or drop the call as they do not want to engage.

"Another think (laughter), our clients, I am sorry to put it this way, our clients are liars sometimes. They give you the wrong contact numbers. So, it's wise to buzz the number that she is giving you right now and then the number, you ask the person is your phone open? She will say yes. Where is it? It is in my pocket, and then you buzz the phone. The number you have dialled doesn't exist. So, you have to dig more in order to get the correct information." Participant 11(FGD2)

"Secondly, they [patient] get familiar with phone numbers of the facility, and when you call them, okay, it's the clinic, they drop the phone [laughter], or you use your phone. Hello? Then you say I am calling from the clinic, it's still a challenge" Participant 12(FGD2)

Some of the reasons were raised that the distances to health clinics are too far and that patients had transport challenges and financial constraints. This made it difficult for them to book early or even come to the clinic for the follow up visits.

"I think one of the challenges is the distance, and the geographical territory of the area, because some depend on transport in order to reach the facilities, and some depend on, or others are within walking distance, but it's not easy to reach the facility. There are forests that need to be crossed in order to reach the facility, so I think that makes it more difficult." Participant 11 (FGD2)

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"As Sister was saying, the distance costs us a lot, because we have patients, pregnant women on ART, then you will see them the first time when they book, and then we initiate. Then afterwards when we try to follow up, you will remind her that next month is your date to come to the clinic. They will say I don't have money to come to the clinic. So, we are so worried because this woman is pregnant, and she is also on ART, then they have no money to come to the clinic." Participant 12 (FGD2).

Participants four, six and eight said that they had a very mobile clientele because they moved from the one clinic to another. Client mobility was also seen as a major challenge. It was difficult to follow up clients as they moved districts and provinces or gave the wrong address.

"Some go to Joburg; some go to their husbands in Cape Town and all that. I'm sure that is the only problem that I can think of, is the mobility of clients. They move from one place to another, and especially with Butterworth, because there are squatter areas. They get lost, they give wrong addresses, and they give wrong phone numbers because they don't want to be traced. I'm sure we need to do a lot of aggressive health education." Participant 13 (ID)

"Then for second visit, she goes to, maybe she is staying at Mnquma, and maybe by that time she was in town, and then she goes to Gateway and has retest, boom, it is positive". Participant 4 (FGD1)

"Another stressful situation, (laughter), there was a child with PCR positive, but when we tried to follow what happened, we found out that the mother booked at Willowvale CHC, and she was a late booker. She visited this CHC once in her pregnancy. She delivered the positive child, PCR positive child, and she visited our facility within six days." Participant 6 (FGD2)

"It's [clients visiting other clinics] a problem that, because we are repeating the same thing [registering patient as new]. We have got a lot of work, whereas we have to do other things. Now the patient comes as new, whereas she knows her status. So, this ID (Showing of a person identification document when registering at the health facility) thing is very important. It is going to

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save our time so as to manage other people well to give the quality care." Participant 8 (FGD)

Participants also shared the challenges they experienced with non-adherent patients and that they did not disclose their HIV status to their partners. This is especially for the mothers with children who were born HIV positive. The children are unaware of their status and especially the teenagers do not understand why they have to take any medication. The challenge with disclosure is also amongst the married couples whose partners are unaware that they are HIV positive.

"You must first educate the mothers, because the mother is HIV positive, the father is HIV positive, the child is HIV positive, but they don't disclose to the child. We encountered the problems when the child is 13 and above, they don't want to take the treatment. It's when we have these viral loads which are not suppressing, because they don't want to take it. They don't know why "Participant 2(FGD)

"Okay, family, I think some of our family members, it's not easy for them to disclose, and another thing, we don't support them enough, or maybe some, they did disclose, but the treatment they get, they end up not taking their treatment." Participant 3 (FGD1)

"I was reminded by Sister about the child she was talking about. We have a child where disclosure is a problem. The child has grown up, it's a boy, the granny usually says to him that he has flu. Now he was taking meds. The boy now refuses to take meds. He said I don't have flu; I'm not going to take this. So, he is a defaulter now. He was so well on treatment, because he was suppressing, now he just dropped to take the treatment. So, we have that challenge now to go and get that boy so as to come. The granny refuses to disclose, and we cannot get involved until the granny discloses to the child." Participant 11 (FGD11)

"What I was going to say, I have patients who are still a challenge. They are still giving us challenges, especially those who are HIV positive, because they don't disclose. Even if she is married, she is not disclosing to the husband.

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> *Even if she is not married, but having a boyfriend, as I am saying right now, I am having a lady who is highly pregnant." Participant 8 (FGD2)*

Disclosure, loss to follow up, stigma, transport and financial challenges are among the major issues identified as client challenges. In order to make the program sustainable there is need to address these challenges within the district in collaboration with the stake holders.

4.3.4.3. Sub-theme: Organizational challenges

Every organisation experience challenges within their setting that will probably influence sustainability. Organisational challenges emerged from two categories, namely staff shortages and system challenges. Participants shared their views about staff shortages in the Mnquma sub-district.

> *"The shortage of staff in our facilities, when one is on leave, there is only one nurse remaining, and the programmes are so extensive." Participant 13 (ID)*

> *"But I think the shortage of staff is the issue, because you started maybe with so many people, you know, and people are resigning like I don't know, and you are only left with one person, and this one person is mandated with a lot of other issues that have to be done. So, it takes a shift from what she was supposed to do, because she is all alone now. We have about five facilities now that have one professional nurse." Participant 15 (ID)*

> *'The main challenge of this QIC, okay, the main challenge that we as the sub-district have is that we have got a gross shortage of staff. At times, the facility could not attend the sessions due to a shortage of staff." Participant 14 (ID)*

> *"Okay, what I want to add, on our side, with the supervision of this, we are short staffed, even at sub-district level. For example, some program managers like clinic supervisors, not all facilities we are able to visit within a month. There is no Maternal, Child and Women Health (MCWH) program manager who is an important stakeholder in this program, as well, especially eMTCT, let alone that this QIC program is relevant in almost all programs. There are two clinic supervisors for 28 facilities. "Participant 14 (ID)*

Participants were concerned about staff mobility, which could affect sustainability of the program. The shortage of staff is seen as a challenge to sustainability of the

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program. However, Participant 13 asserted that through the implementation of the QIC design, she believed that they have to make use of the available resources to continue improving.

> *Who is going to sustain that? If we do employ, that person is still new, and they still need to be orientated on whatever was there, and it is going to take time for that person to learn and be on par with what is supposed to be happening. So, shortage of staff is a major issue. We have a shortage of staff that goes to the general workers as well, we don't have them, and the nurses have to start by cleaning." Participant 15 (ID).*

> *"So, it [QIC design] has helped us to make use of the available resources, to make the model work. So that's what we have learnt from South to South. So, it's still helping us, otherwise there is a gross shortage of professional nurses, but we are managing somehow" Participant 13 (ID)*

Within the healthcare clinic, there are daily challenges that staff experience that can hinder a program to give quality care to patient, clients and their families.

> *"Another thing is transport to go and trace these patients, because sometimes we get patients from other catchment areas which are not ours." Participant 12 (FGD2)*

> *"Also, with the equipment, sometimes we ask when there is a partner, like an NGO that is coming, what have you come for, because we need equipment. We have no blood pressure (BP) machines, we have no haemoglobin (HB) metres, how can you help us, you know. The process is our process with the Department. They take a long time. So, we usually ask for those things. Sometimes we have got a shortage of equipment." Participant 13 (ID)*

> *"So, we are still having those challenges of the late bookers, because our government requires that they book early, but we are still having the challenges with late bookers and we were still talking about those un-booked clients who came as born before arrivals (BBAs) then." Participant 8 (FGD2)*

Information documentation is not consistent, which influences the communication between healthcare workers. This was a challenge where patients received a service twice and the flow of information on the services received was inadequate.

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"The challenges we usually face is from the clinicians [professional nurses]. I'm sorry (chuckle). They always tick the list, or they tick wrong on the list. The other challenge, I think it's from that rollout. The other Sister will do the effort to put the sticker on the file, and the other one will ignore that sticker, why it's there. When we ask that patient why didn't you take this viral load?" Participant 5 (FGD)

Participant two said that they preferred to have meetings at the clinic because sometimes they do not have time to attend other meetings or workshops due to commitments in the healthcare clinic

"So, the main challenge I can say myself is the time, because I cannot say something about the staff, because the staff is not related to you. It's related to the government and so on, all the other things. Generally, as the S2S is concerned, I can say it's the time. The time, even when you want us to attend the sessions, it's not easy because you are running this program, this program is going to boost us, and we are having other programs which are running." Participant 2 (FGD1)

4.3.4.4. Sub-theme: Recommendations

This last sub-theme was recommendations and possible solutions for the sustainability of the eMTCT QIC program that was raised by participants. Participants recommend that a youth and adolescent program must be started at each healthcare clinic so that the youth can be seen without waiting in long queues. These environments should be teenage friendly.

"So, that program of youth and adolescents, I wish it could be, but the things are not like that, because I like those young guys. They just take them, not to stay a long time at the clinic, waiting. They just treat them and then go away. So, they like that, to be able to be friendly and be in their understanding, not judging them, then they will be fine." Participant 6 (FGD)

Further, a support group for the HIV- positive mothers during pregnancy birth and motherhood is recommended by participants. This will allow the mothers to share information and find confidence among themselves.

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So, we suggested that if we can now have a strong support group for these pregnant women, because most of the time, she knows herself that I am HIV positive. She doesn't know that the one next to her is also positive, so she is hiding all her information to herself. So, I think a support group can be effective, and it can make our program take up." Participant 8 (FGD)

Participants were concerned about the negative involvement of traditional healers with their traditional medicine and advertisement about the myth that it can cure HIV. Therefore, the participants recommended that the government must take control over this situation.

"If government can make a control on those "magagota" (traditional viral boosters) and whatever, those that are advertised. The viral boosters. If they can close that tab of advertising "magogota", advertising Prosydin, all those things, I think our clients, due to those things, they don't suppress, because those boosters and mix them with treatment. "Participant 11(FGD2)

A possible solution to the duplication of registrations at clinics would be to use the clients' identification number on their identity documents (ID).

"To add another point, I think this matter of the IDs that is being introduced is going to help us because she gets tested at such as Ntseshe clinic, come to Nqamakwe CHC, she has never tested, and this test is new." Participant 8(FGD2)

A recommendation was made that the government must improve the clinic register so that the data they required is the same in the register especially the antenatal register. This means that the health staff will easy identify the client in the antenatal register if there is a space provide in this book as "lost to follow up" because when that column is not in register, there is a lacking of patient follow up.

"Also, what I am thinking of, as we are improving, the government is doing everything like the registers, the new registers, so our registers are not talking like the others which are usually used for ANC. So, for example, if I've got the pregnant woman for the first time, then that woman falls negative, then you don't know because there is no other information for that woman. So, for you to be able to follow up, you have to have those as when they are saying they

are just reducing the work, the paperwork, but still we have to have the small booklet where you are going to write." Participant 6 (FGD2)

The concern of staff shortages was indicated by the healthcare workers in all catchment areas. Adequate staffing numbers would enable the staff members to trace and follow up clients better.

"I think if government can add healthcare workers, because we have the places who don't have community health workers (agreement). So, it is a challenge because we don't have a person to send there to check the people, to check the mothers, to check the postnatal, because we don't have a community health worker at that place." Participant 10 (FGD2)

Participant six said that some nurses need to change their behaviour towards the clients because they are chasing the clients away. The attitude of the clinic staff influences the attendance by the patients. If they feel shoved up and down the patients will feel mistreated.

"Also, the attitudes, is that those nurses that were chasing, they were shouting, they are gone now (laughter). So, our clients, even if you meet the client in the town, they say Sister, when you sent me to town to the doctor, he said that and that, so he is so happy. So, thank you, you have helped me. So, that attitude also contributed to have the good indicators and the good quality care." Participant 6 (FGD2)

Community involvement by informing the grannies who are looking after the children about the importance of adherence. This was raised as a possible solution to non-adherence to ART medication.

*"No, I think if we can call the granny and counsel the granny about this disclosure to this boy so that she can see that she is going to lose that boy, because that boy is going to get ill. Is she going to manage to get that boy to the clinic as well as to the hospital, yet the boy was healthy while he was on treatment**?** "Participant 8 (FGD2)*

The recommendations by the participants was an acknowledgement that there has been progress in the implementation of the collaborative eMTCT QIC program.

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However, there are still gaps in the care and access to the management that need to be closed.

4.4. Summary of findings

Participants who were interviewed appreciated the eMTCT QIC program that was implemented by S2S because they became more innovative by using creative ways to improve on the eMTCT indicators in the Mnquma sub-district. Overall teamwork has improved through planning together, problem identification and sharing of ideas. A lot of knowledge and skills were gained through teaching, learning and transfer of knowledge.

Participants felt more empowered and motivated because they could change the system by improving the overall quality of the maternal and child healthcare program. Collaboration between clinic and community made a positive impact on the improvement of eMTCT program. Beyond this, there were also many challenges in the community and organisation that sometimes prevent quality improvements. In conclusion, recommendations and possible solutions were made to address the challenges in the eMTCT program in order to make it sustainable.

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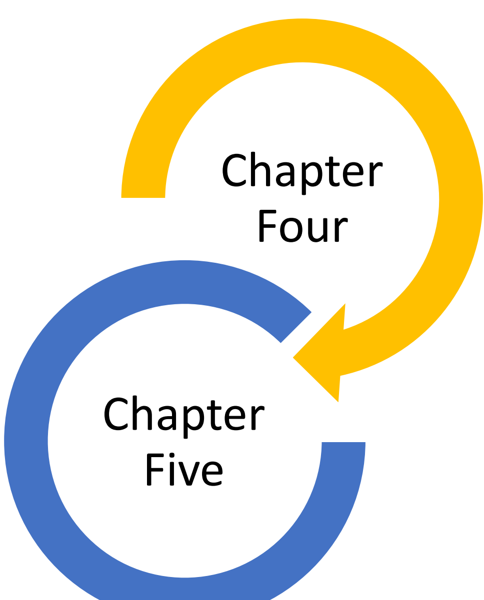

The previous Chapter highlighted the findings of the study while giving a description of the study voices that emerged in the data

In the next chapter, the author will discuss, conclude and make recommendations based on the findings in chapter four.

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5. CHAPTER FIVE
DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

In this final chapter, the researcher discusses the study findings in relation to the literature review in chapter two. The researcher explored the quality improvement team`s perceptions on sustainability of the eMTCT QIC program by using individual interviews and focus group discussions. Four themes emerged from the research data in chapter four which revealed the appreciation of the QIC design, while there was program empowerment. The community influences that emerged positively inspired the outcomes of the eMTCT QIC program. The development challenges emerged as challenges were faced in the organization and the desire to change these challenges was realised.

5.2. Discussion of findings

The aim of the study was to explore the quality improvement team`s perceptions of sustainability of the eMTCT QIC program implemented in the Mnquma sub-district Eastern Cape Province of South Africa. The study findings depicted that there was a lot of appreciation for the QIC design as it enabled participants to become innovative and it seems that the quality improvement program continued using quality improvement methods example the PDSA plan, problem identification using the Fish bone analysis and Five Why`s. There was organisational influence that prepared participants with knowledge and skills while empowering them. There was evidence of the community contributing towards the improvement of the eMTCT program. It is also noticed that collaboration between the community and clinic level grew stronger because they realised the common aim was improvement.

However, there were many challenges faced by stakeholders that could possibly influence the sustainability of the QIC program. At the end there were some valuable recommendations and possible solutions made by participants that can assist with program sustainability. These recommendations emerged from either the desire to sustain the QIC program or to find better innovative ways to deal with the challenges faced by the health workers and or the community members. The discussions of the

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findings will be based on the three research objectives to explore the quality improvement `s perceptions about the sustainability of the eMTCT QIC program

5.3. Project design and implementation

Appreciating the QIC design emerged as a key element responsible for reaching the research objective one of *"describing the quality improvement team`s perception of the sustainability of the design and implementation of the eMTCT QIC program*".

Participants shared the value that was found in implementing the eMTCT QIC program in the Mnquma sub-district. The quality improvement collaborative was a shared learning system that brought healthcare workers of the Mnquma sub-district together at learning session workshops, during the structured and unstructured modular trainings and quality improvement coaching visits. During the eMTCT QIC program quality improvement teams were formed, QI team leaders assigned, teams conducted QI projects involving testing of change ideas during the action period and shared it at quarterly learning sessions (see Figure 2, Mnquma sub-district eMTCT QIC Model). S2S used the Model for Improvement using the Plan-Do-Study-ACT (PDSA cycles) as described in figure 3 to develop, test and disseminate best practices of quality improvement projects. Similar approaches were used by other districts as described in the literature review.

The study found that the participants learnt and owned the program in such a way that they developed innovative ways to deal with similar problems. They were able to identify the challenges they had and used the QIC model to optimize the resources at hand. The understanding of the design empowered the participants to use the knowledge and skills gained in similar circumstances. They could use the Model for Improvement and quality improvement tools, for example the fishbone analysis, and process mapping to identifying the gaps in the eMTCT program. They then used the PDSA and cycles to plan and test their quality improvement projects. The biggest gain was the understanding of the QIC model, its application within the eMTCT program and other programs, and the collaboration that was created within the clinic and community while dealing with the management of eMTCT. Doherty et al (2009) recommended that to ensure sustainability of a program, it needs ongoing support and supervision in order to ensure a culture of data-driven monitoring. Webster et al (2012) also used the Model for Improvement in their QI projects as described in the literature

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review. The authors stated that the main challenges that influencing program sustainability was the staff turnover that caused irregular quality improvement staff meetings. The study participants of this research were able to manage the eMTCT indicators better with the available resources they had which enabled them to continue the gains and successes learnt.

The study found that the participants shared their learning experiences during the eMTCT QIC program, gained knowledge and also shared their knowledge and experience with other team members within and between the organizations. The framework for conceptualizing program sustainability by Shediac-Rizkallah and Bone (1998) was used to guide the research objectives (See Figure 5). The project design of Shediac-Rizkallah and Bone's framework, addressed factors relating to resources available, including staff and financial resources for the project to continue (Figure 5, label A). It addressed the training part where it is said that projects with training components are more likely to be sustained and that those who are trained can continue with the benefits and train others to support the program.

Teaching and learning effectiveness was measured by the positive outcomes and the enthusiasm to utilize the program in other areas of interest. The participants were excited about the gains provided by the program and the enthusiasm to apply it to other programs showed a sense of learning in order to apply. The biggest positive outcome was that participants appreciated the fact that facility health staff from all non-implemented sites were part of the learning session workshops and structured training from the start of eMTCT QIC program. A study that was done by Lim *et al.* (2010) showed that it was a challenge to get permission to train community healthcare workers as part of raising community awareness.

5.4. Factors within the organisational setting

Some factors within the organisation made a positive influence towards the implementation of QIC program. Program empowerment is linked to the second research objective, "*to describe quality improvement team`s perception of the factors within the organisation that might influence the sustainability of the eMTCT QIC program.*" These factors were, organizational influence, staff development and maternal and child healthcare improvements.

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Participants that were interviewed said that they felt more empowered and motivated and that the eMTCT QIC program changed their ways of doing things at the clinic and community level. They believed that the knowledge and skills they gained, will guide them through program sustainability. An outstanding idea was that each facility assigned a quality improvement champion who led the QI project. Furthermore, the champion`s role was changed every four to six months so that each one has an opportunity to grow in "taking the lead". Even the sub-district office assigned a QI champion to manage the quality improvement projects who motivated their staff toward continuous improvement. Doherty, *et al.* (2009) and Lim, *et al*. (2010) described in their papers that to ensure sustainability of a program, ongoing support and supervision was recommended.

Within the clinic level setting, participants raised challenges namely; staff shortages, high workloads, insufficient time to attend all meetings, information in patient's registers that was not the same as submission data, time used to enter patients' details twice on data system due to patients registering at other clinics, and lack of record-keeping. In the article of Webster et al. (2011), it is raised that the main challenge for successful execution of a QI program and long-term sustainability was staff turnover that resulted in irregular QI meetings, fluctuations in leadership support and accountability for the project activities.

Shediac-Rizkallah and Bone (1998) described that organisational and managerial structures and processes can inhibit or support program continuation and that strong leadership plays a vital role in the organisation. Overall, there were many improvements in all eMTCT indicators, but there were challenges to reach some of the eMTCT outcome indicator example the six-day postnatal visit rate. The author believed that cultural beliefs contributed to the slow performance of this indicator because women believe that they have to stay in house until the umbilicus of baby falls off, whereas Department of Health indicators required mothers to visit within six days of delivery.

5.5 Factors in the broader community environment

The involvement of community stakeholders can be seen as the most important part of collaboration between the clinic and community level. Collaboration between

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traditional healers, wives of the chiefs and the families enhance the referring link back to the clinic. The integration of cultural practices into healthcare allowed the patients to be more accommodating to modern medicine rather than just receiving treatment.

Community healthcare workers' collaboration played a vital role and assisted with the improvement of patient care and improved eMTCT outcomes. Their involvement with the patient was within the clinic and community setting and that made their role important. Shediac-Rizkallah and Bone (1998) stated that a program does not operate in a vacuum and that is why the depth and range of the involvement of the target community members will influence program impact and continuation.

The researcher noticed that the client's challenges could have the greatest impact of program sustainability and improvement of the eMTCT program. These factors are: client mobility, lack of cooperation, loss to follow up, stigma, non-disclosure and non-adherence to medication, cultural challenges and cultural problems, transport issues, far distances and teenage pregnancies.

5.5. Limitations of the study

Although community healthcare workers and lay counsellors were invited to participate in the research study, there was only one CHW who was able to be part of the study. Some of the key people, for example operational managers who were part of the eMTCT QIC implementation could not attend due to other commitments in the health facility.

Participants were chosen according to their cluster area so that travelling together was easier for them to attend the focus group discussions at a private venue at the sub-district. Participants received reimbursement for their transport costs to the venue. The researcher was one of the initiators and implementers of the eMTCT QIC program and well-known by some participants. At the beginning of each individual interview and focus group discussions, the researcher strongly emphasized that participants must give their honest opinion about the questions asked and that they must not feel intimidated by the researcher who was one of the eMTCT QIC implementers, however my present may still influenced some answers. The researcher`s supervisor was present at both focus group discussions and done one individual interview. Processes and the data was constantly verified by the supervisor through ongoing support.

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5.6. Conclusion

Two focus group discussions and three individual interviews were conducted where participants shared their perceptions of sustainability according to the three research objectives that were based on Shediac-Rizkallah framework for conceptualising sustainability. The key findings of the research were discussed according to the three research objectives that were focused on factors that may influence sustainability on the project design and implementation, within the organisational setting and lastly the broader community

5.7. Recommendations

Recommendations for this study emerged from the findings of the evidence raised by participants' perceptions of the sustainability of the eMTCT QIC program in the Mnquma sub-district. Recommendations are also based on the framework for conceptualizing program sustainability by Shediac-Rizkallah and Bone (1998:87-108).

5.7.1. Recommendation One: Project design and implementation

It is recommended that it before any new project or intervention is initiated, that the stakeholder or the funder needs to inform the implementing organisation about what the project entails, including, a clear vison, goal, aims and objectives. It is important that the implementing organisation knows the project duration, the start and end date of the new project, so that preparations can be planned for sustainability throughout the whole project. Research has shown that short, grant periods for an organisation with an innovation can delay progress. Goodman and Steckler (1989) suggested that a period of five years for supporting and funding a project would enhance sustainability. A gap identified by the researcher was that S2S did not prepare Mnquma sub-district from the start about a plan for sustainability and therefore the need is to have an action plan for sustainability as illustrated in figure 7.

According to Goodman and Steckler, (1989:63-78), not all successful program implementations guarantee sustainability, but it is only worth institutionalizing if it has been shown to be an effective program. To ensure project effectiveness while the project is in testing phase, regular data management by means of plotting of graphs must take place to assess for any improvements and, if no improvement is noted, the plan needs to be changed.

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In the memorandum of agreement, it must clearly state what will be funded or excluded. It was clearly stated that S2S program is about the development and institutionalization of innovative capacity-building programs. One participant questioned why the program is only implemented in eMTCT, but is not implemented in other programs.

When implementing a new project, funders must clearly identify what type of project it is, whether it is a preventative, curative program, clinic or community based. The S2S program was focused mostly on clinic intervention with the whole team, including community healthcare workers and lay counsellors, involved

Training for all healthcare workers is a very important component, as described by Bossert, (1990:1015-1023) because it is more likely to be sustained Those staff members who are trained on topics involving improvements can then train and support others to support program sustainability. S2S had six learning-session workshops, including many structured and unstructured modular training for all staff members, including community healthcare workers at clinics.

5.7.2. Recommendation Two: Factors within the organisational setting

Factors that are related to the organisational and managerial structures can either help to sustain the gains or they can have a negative impact on the innovation program.

Firstly, the researcher recommended that a new program must be well-integrated with other programs within a health clinic and with strong, skilled, leadership roles. Although S2S focus was on the eMTCT, clinics could integrate the QIC approach within other programs or services. Bossert (1990) stated that some programs that stand alone, also called vertical programs, are less likely to be sustained.

Management leadership and champions' buy-in is very important to maintain sustainability in a program. Overall, there was a good presentation of sub-district managers involved with the implementation of the eMTCT quality improvement project and they attended most of the learning session workshops. Each clinic has to assign a quality improvement team member to run the quality improvement meeting and there was a QI champion at sub-district level. More supervisory visits need to be conducted by managers and supervisors and they need to be part of the quality improvement team.

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Managers need more skills on quality improvement methodologies, because this program was implemented mostly at clinic level and the sub-district managers were not involved at every learning session and training. It means that the clinic staff are more exposed to the quality improvement methods and therefore, in order for the managers to understand the system including the project, they also need training and extra skills to take the lead in their sub-district. Staff development is important on all levels of staff at health facilities to provide them with extra skills and knowledge.

The researcher noticed while in the field that acknowledgement, appreciation, motivation, behaviour towards people, communication and support to staff, are the key elements for the buy-in of any project for them to be change agents.

5.7.3. Recommendation three: Factors in the broader community environment

Sustainability can be influenced if the larger community are involved in an innovation because they can be the reason for improving on health outcomes.

It is vital from the start of a project initiation to involve the community stakeholders, for example school health, social development welfare, traditional healers, family and any other organisations involving the health of patients. The community needs to be informed about the challenges in the new program and that it will have challenges with sustainability and will require everyone to work together.

Community involvement in any project plays a crucial role in achieving the program goals of the organisation. It is recommended that the community takes ownership over a program, for example changing their health behaviour, and this can lead to the enhancement of program sustainability.

5.8. Future research

The following areas for future research are proposed:

- The sharing of experiences and perceptions of health facility staff with similar projects implemented in other district, sub-districts or health clinics.
- Health facilities can do their own operational research within their clinic.
- To create a framework for sustainability according to the challenges experienced by the South African government health care services.

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5.9. Dissemination

The researcher plans to present the findings of this research to:

- Prof Mark Cotton and the Paediatric and Child Health Department - Director of the Family Clinical Research Unit (FAM-CRU) Tygerberg Hospital and Principal investigator for S2S
- The Department of Health, Eastern Cape, and the Amathole district, and sub-district Mnquma.
- Eastern Cape Ethics Committee, report on the findings of the research.

The researcher also plans to publish the findings of the research in an accredited health journal.

5.10. Conclusion

The overall aim of the study was to explore the quality improvement team`s perceptions of sustainability of the eMTCT QIC program implemented in the Mnquma sub-district of the Eastern Cape Province of South Africa. Although there was a lot of challenges during the implementation of the program, there was evidence of sustainability of the program. The study was conducted according to the objectives that were set and the findings were the views of the participants without any interference by the researcher or any other person. The researcher hopes that the study findings can be applied in any other setting except health, and that these findings can be used for future research.

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6. APPENDICES

Appendix 1: Ethical approval from Stellenbosch University

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot • your knowledge partner

Approval Notice
New Application

05-Jul-2017

Ethics Reference #: S17/05/096

Title: The sustainability of the "Elimination of the Mother to Child Transmission Quality Improvement Collaborative Program" in the Eastern Cape: Health-care worker's perceptions.

Dear Ms D Williams

The **New Application** received on **02-May-2017** was reviewed by members of **Health Research Ethics Committee (HREC) 1** via **expedited** review procedures on **04-Jul-2017** and was approved.

Please note the following information about your approved research protocol:

Protocol Approval Period: **04-Jul-2017 – 03-Jul-2018**

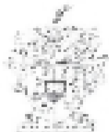
Please remember tou se your protocol number (S17/05/096) on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

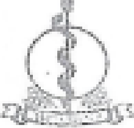
After Ethical Review:
Please note a template of the progress report is obtainable on www.sun.ac.za/rds and should be submitted to the Committee before the year has expired.
The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.
Translation of the consent document to the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No. 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki and the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles, Structures and Processes 2015 (Departement of Health).



Fakulteit Geneeskunde en Gesondheidswetenskappe
•
Faculty of Medicine and Health Sciences



Afdeling Navorsingsontwikkeling en -Steun • Research Development and Support Division

Posbus/PO Box 241 • Cape Town 8000 • Suid-Afrika/South Africa
Tel: +27 (0) 21 938 9677

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Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility, permission must still be obtained from the relevant authorities (Western Cape Departement of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Departement of Health (healthres@pgwc.gov.za ; Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za; Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.
For standard HREC vorms and documents, please visit: www.sun.ac.za/rds

If you have any questions or need further assistance, please contact the HREC office at 021 938 9677.

Yours sincerely,

Franklin Weber
HREC Coordinator
Health Research Ethics Committee 1

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Appendix 2: Permission obtained from institutions / Department of Health

Eastern Cape Department of Health

Enquiries:	Madoda Xokwe	Tel No:	040 608 0856
Date:	10 July 2017	Fax No:	043 642 1409
e-mail address:	madoda.xokwe@echealth.gov.za		

Dear Mrs. D. Williams

Re: The Sustainability of the Elimination of the Mother to Child Transmission Quality Improvement Collaborative Program in the Eastern Cape: Health Care Workers Perceptions (EC_2017RP52_350)

The Department of Health would like to inform you that your application for conducting a research on the abovementioned topic has been approved based on the following conditions:

1. During your study, you will follow the submitted protocol with ethical approval and can only deviate from it after having a written approval from the Department of Health in writing.
2. You are advised to ensure, observe and respect the rights and culture of your research participants and maintain confidentiality of their identities and shall remove or not collect any information which can be used to link the participants.
3. The Department of Health expects you to provide a progress on your study every 3 months (from date you received this letter) in writing.
4. At the end of your study, you will be expected to send a full written report with your findings and implementable recommendations to the Epidemiological Research & Surveillance Management. You may be invited to the department to come and present your research findings with your implementable recommendations.
5. Your results on the Eastern Cape will not be presented anywhere unless you have shared them with the Department of Health as indicated above.

Your compliance in this regard will be highly appreciated.

SECRETARIAT: EASTERN CAPE HEALTH RESEARCH COMMITTEE

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Appendix 3: Participant information leaflet and consent form

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT:
The sustainability of the Elimination of the Mother to Child HIV Transmission Quality Improvement Collaborative Program in the Eastern Cape: Health care workers perceptions

REFERENCE NUMBER: S17/05/096

PRINCIPAL INVESTIGATOR: Dorothy Williams
SUPERVISOR: Dr Doreen M'Rithaa (Head of Midwifery and Neonatal Nursing, University of Stellenbosch

ADDRESS:
South to South, Programme for Comprehensive Family HIV Care and Treatment
Department of Paediatrics and Child Health
Faculty of Medicine and Health Sciences
Universiteit Stellenbosch University
Francie van Zijl Drive; Tygerberg/ PO Box 241 / Cape Town; 8000, South Africa

CONTACT NUMBER:
Dr Doreen M'Rithaa: +27 21 938 9240
Dorothy Williams: 082 4754 875

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. In addition, your participation is **voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Health Research Ethics Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

The purpose of the eMTCT Quality Improvement Collaborative program was to support health system performance to improve health outcomes of mothers, infants, children, and adolescents affected and infected by HIV/TB.

The aim of this study is to explore the health care workers' perceptions of the sustainability of the eMTCT Quality Improvement Collaborative program implemented in the Eastern Cape province of South Africa during January 2013-March 2015.

The research study will take place at nine of the 14 health clinics in Mnquma sub district. These clinics are Ntseshe, Kotana, Macibe, Ndabakazi, Nozuko, Hebe-Hebe, Tutura and Butterworth Gateway Clinics and Nqamakwe CHC. The study aims to recruit 10-14 quality improvement team members.

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Two focus group discussions with six participants with the assistance of the researcher and supervisor in each group will be conducted. These focus group discussions will last for about 90 -120 minutes. In depth, semi-structured interviews with two program managers will be conducted at sub district office. These interviews will last about 45-60 minutes.

If you volunteer to participate in this research, the following will happen:

The researcher will explain the research project to you.

Signed written consent will be required from you that will give your permission to be interviewed and audiotaped by the researcher.

Confidentiality will be maintained by storing the data on a safe password protected computer.

The right of privacy will be protected by the use of codes instead of real names.

If certain requirements concerning the study is needed, this information may also be examined by University of Stellenbosch Health Research Ethics.

Your identity will be kept confidential throughout the study and you can withdraw from the study at any time.

Why have you been invited to participate?

You have been selected to take part in this study because you fall under the specific criteria of this research project and you will be able to provide real life experiences about the research topic.

What will your responsibilities be?

You will need to be responsible to attend the focus group discussions, which was set at the agreed time and venue. You are expected to respond honestly to all questions during the interviews or discussions.
Ensure that you understand all the questions in the interview and please ask for an explanation of each question if you are unsure. Please do not let your answer be influenced by anyone other than yourself and let it reflect only your own opinions and values. Do not answer questions based on what you think the researcher would want you to answer.

Will you benefit from taking part in this research?

There are no personal benefits; however, you will be given an opportunity to share your experiences of being part of a quality improvement collaborative team. Your valuable input can serve as guidance in ensuring future sustainability in planning, preparation, implementation and the spread of any Quality Improvement Collaborative programme.

Are there any risks involved in your taking part in this research?

We do not anticipate any risks in taking part in this research to you sharing your own story about your experiences. The only potential risk that might be identified is the emotional response to questions especially during the focus group discussion. You have the researcher's reassurance to control the group discussion to prevent any harm and discomfort. Participants will be followed up with individuals interviews to discuss their views if needed.

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If you do not agree to take part, what alternatives do you have?

Participation is voluntary and if you choose not to participate in this study, you will in no way be disadvantaged.

Will you be paid to take part in this study and are there any costs involved?

There will be no payment involved for your participation in this research study; however, you will receive a light meal after the interview. There will be no costs involved for you, if you do take part.

Is there any thing else that you should know or do?

You can contact the Health Research Ethics Committee at Stellenbosch University at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by the investigators.

Declaration by participant

By signing below, I …………………………………..………….. agree to take part in a research study entitled: **The sustainability of the Elimination of the Mother to Child HIV Transmission Quality Improvement Collaborative Program in the Eastern Cape: Health care workers perceptions.**

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) ....……........……………….. on (*date*) …………....……….. 2017.

....

Signature of participant **Signature of witness**

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Declaration by investigator

I *(name)* …………………………………………………..……… declare that:

- I explained the information in this document to …………………………………..
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use a interpreter. (*If a interpreter is used then the interpreter must sign the declaration below*.

Signed at (*place*) ....…........……………. on (*date*) …………....……….. 2017.
.

....

Signature of investigator **Signature of witness**

Declaration by interpreter

I *(name)* ……………………………………………..……… declare that:

- I assisted the investigator (*name*) ………………………………………. to explain the information in this document to (*name of participant*) ……………..…………………………….. using the language medium of Afrikaans/Xhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (*place*) ....…........……………. on (*date*) …………..………………..

....
Signature of interpreter **Signature of witness**

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Appendix 4: Interview guide

eMTCT Quality Improvement Collaborative Program

Focus group discussions & individual interviews

Interviewer: My name is Dorothy Williams and Dr Doreen M'Rithaa, I am part of the data team at South to South and a student at Stellenbosch University. This focus group discussion serves as part of the evaluation of the Quality Improvement work implemented by South to South from the perspective of the programme participants.

The purpose of the Quality Improvement Collaborative program was to support health system performance to improve health outcomes of mothers, infants, children, and adolescents affected and infected by HIV/TB. The reason for this focus group is for you to share your experiences of the eMTCT Quality Improvement Collaborative Program

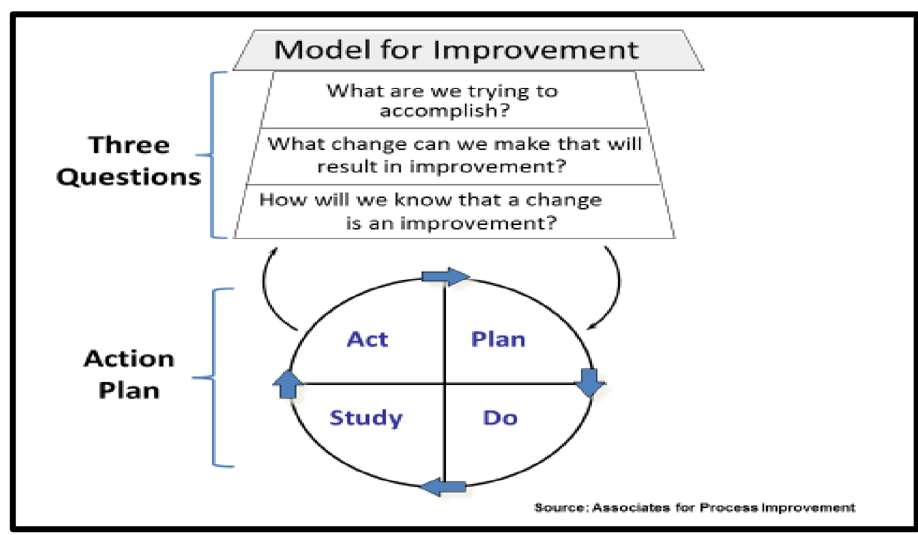
Thank you again for taking the time to meet with me.

1. We will begin with introductions of who we are, what we do and how we were involved in the into the eMTCT Quality Improvement Collaborative program.

2. Tell me about the eMTCT Quality Improvement Collaborative program

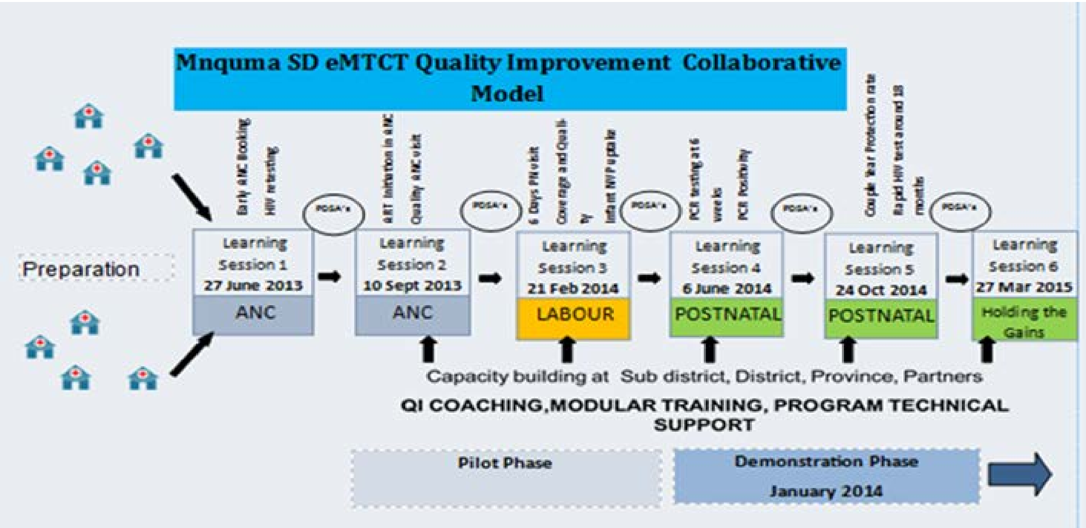
RO 1 To describe the healthcare workers perception on the design of the eMTCT Quality Improvement Collaborative program

3. Let us talk about the design of the eMTCT Quality Improvement Collaborative **program** *(show participants the QIC design, using Model for Improvement)*



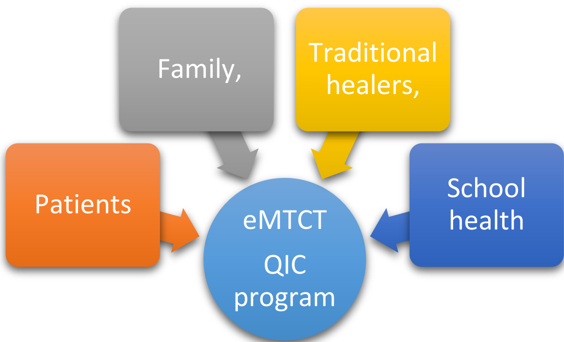
RO 2 To describe healthcare workers perception of the factors within the organisation that influenced implementation of the eMTCT Quality Improvement

4. Let us talk about what you perceived as influencing the eMTCT Quality Improvement Collaborative program during the implementation within your organization? (Show the participants the eMTCT QIC Model)



RO 3 To determine quality improvement team`s perception of the factors in the broader community that influenced implementation of the eMTCT Quality Improvement Collaborative program

5. Let's talk about how the community influenced implementation of the eMTCT Quality Improvement Collaborative program. (Show diagram)



What suggestions and final recommendations would you make to improve the eMTCT Quality Improvement program?

- What were the main challenges?
- Do you think the program is sustainable?

Any other general comments?

THANK YOU FOR YOUR PARTICIPATION

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Appendix 5: Confidentiality agreement with data transcriber

CONFIDENTIALITY AGREEMENT

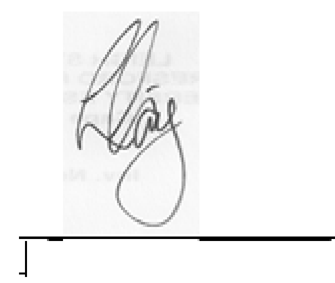
I, the undersigned _Leigh Story

1. Herewith undertake that I transcribed audiotapes of 17-19 July 2017 used in the research for her thesis. All information disclosed or submitted, either orally, in writing or in other tangible or intangible form by Dorothy Williams to me, or made available to me, or details of Dorothy Williams' business or interest of which I may become aware of in respect of transcriptions being done by myself for Dorothy Williams, to keep confidential and not to divulge to anyone for which Dorothy Williams did not give written consent;

2. guarantee that I will apply the information, detail or knowledge in **clause 1** only for the purpose of the intended research;

3. indemnify Dorothy Williams against any claims that may be instituted against Dorothy Williams, amounts that may be claimed or losses that Dorothy Williams may suffer in consequence of a violation by me of any provision included in this agreement.

SIGNED at Cape Town on 26th November 2017



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Appendix 6: Extract of transcribed interview

FGD2 2017.07.19 19.52

Speaker Key:

IV	Interviewer
IV2	Second Interviewer
FI	Female Interviewee
FI2	Second Female Interviewee
FI3	Third Female Interviewee
FI4	Fourth Female Interviewee

IV I will take some notes, and Dr Doreen will also take some notes. So, we will take some notes. Okay, so the first one, and I am going to give everyone a chance. You don't need to start here. Tell us about the eMTCT program that we introduced. Some of you were in 2014, some of you were in 2013, so can you tell me what you understand about the eMTCT collaborative program in Mnquma?

11(FGD) My knowledge about eMTCT, firstly, let me explain the accreditation of eMTCT, as the elimination of mother to child transmission. It deals with good knowledge, it starts with the pregnant woman. It starts before pregnancy, before the woman is pregnant. Once she is pregnant, she is tested for HIV. If she is HIV positive, she is taken care of in order to prevent the seroconversion of the virus to the baby. Once the baby is born, the baby is taken care of again to prevent the virus as well.

With the post monitoring or community health workers and the focal person or professional nurses of that facility, and also, it is important to let the siblings know that the woman and the baby are under treatment and they need support.

10(FGD) To emphasise, the PMTCT is started when the mother starts to book for the first time. We test for HIV. Now immediately she tested positive, we give the treatment immediately. We don't wait for the CD4 count. Immediately she tests positive, we give them the treatment so that they continue to eat the treatment to prevent the child. Then we give the community health worker that mother to visit, to do a follow up visit to that mother through until the mother gives birth.

Even when the mother gives birth, until the child is two years old, to support, to give follow ups, to give adherence if the mother is taking the treatment well. It helps us a lot to work with the community health workers.

IV Thank you.

8(FGD) To add on what they have said, it doesn't only focus on the mother with the treatment. As the mother is being given the treatment antenatally, that baby also

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4 Chesterton
Blackheath Road
Kenilworth

29 November 2017

To whom it may concern

Re: Copyediting and proofreading of:

HEALTHCARE WORKERS PERCEPTIONS ON SUSTAINIBILITY OF THE ELIMINATION OF THE MOTHER-TO-CHILD HIV TRANSMISSION (eMTCT) QUALITY IMPROVEMENT COLLABORATIVE PROGRAM IN EASTERN CAPE.

By Dorothy Williams

I, Jill Diane Stevenson, hereby confirm that the changes made to the above thesis were to ensure consistency of grammar and language (concord, spelling and punctuation) to the conformity of format (headings, index and references).

No other changes were made to the body of work submitted by the candidate (conclusions, recommendations, data, factual reporting or commentary).

Yours faithfully

JDStevenson

Jill Stevenson,
Certified copy editor and proof reader

Cell: 0833092927
email: jilldiane18@gmail.com