UTILIZATION OF EXPANDED PROGRAMME ON IMMUNISATION AND INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES FOR TRACKING AND MANAGEMENT OF HIV-EXPOSED BABIES

by

ANNE ROSE NTHABISENG MAGAGULA

submitted in accordance with the requirements

for the degree of

MASTER IN NURSING SCIENCE

in the subject

HEALTH STUDIES

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF BL DOLAMO

June 2015

Student number: 4658914

DECLARATION

I declare that **UTILIZATION OF EXPANDED PROGRAMME ON IMMUNISATION AND INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES FOR TRACKING AND MANAGEMENT OF HIV-EXPOSED BABIES** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

Signature

June 2015

Date

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STUDENT NUMBER: 4658914

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DEGREE: Master in Nursing Science

DEPARTMENT: Health Studies, University of South Africa

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ABSTRACT

The study sought to determine the meaning and interpretation by facility managers and nurses on utilisation of expanded programme on immunisation and integrated management of childhood illnesses (EPI and IMCI) programmes for follow-up and antibody testing of HIV-exposed infants (HEI) at 18 months. Also to understand the factors within the health systems that influence the follow-up and antibody testing. The study setting selected was six facilities in Steve Tshwete subdistrict in Nkangala district of Mpumalanga province in South Africa.

The study used a hermeneutic phenomenology using in-depth interviews for collecting data from 4 facility managers and 12 nurses. The major themes that emerged from the interviews were referral, defaulting, integration, stigma, and off-site ART initiation within the health system. These were found to influence the utilisation of HEI and IMCI services for follow-up and management of HEI. It was also found that the importance of integrating the management of HEI into the EPI and IMCI cannot be overemphasised. It was concluded that the Health Department needs to be vigilant and use all available resources to manage HEI to meet the MDG 4 of prevention of infant mortality.

Key terms:

EPI, HIV-exposed infant, IMCI, PMTCT, mother-to-child transmission.

ACKNOWLEDGEMENTS

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ABBREVIATIONS

AIDS	Acquired Immune Disease Syndrome
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
BANC	Basic ante-natal care
CPIP	Child problem identification programme
DHP	District Health Plan
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DOH	Department of Health
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HCT	HIV counselling and testing
HEI	HIV-exposed infants
HEU	HIV-exposed uninfected
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council
IEC	Information, education and communication
IMCI	Integrated management of childhood illnesses
IMR	Infant mortality rate
MCWH	Maternal, child and women's health
MDGs	Millennium development goals
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NGO	Non-governmental organisation
NSP	National strategic plan
PITC	Provider initiated (HIV) testing and counselling
PCR	Polymerase chain reaction
PHC	Primary health care

PMTCT	Prevention of mother-to-child transmission of HIV
RED	Reach Every District
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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

In 2011, the South African Department of Health (DOH) (2011c:14) introduced the *National Human Immunodeficiency Virus (HIV), Acquired Immune Disease Syndrome (AIDS) and Sexually Transmitted Infections (STIs) Strategic Plan, 2012-2016* stating that the rate of positive Deoxyribonucleic acid (DNA) polymerase chain reaction (PCR) test taken at 6 weeks on HIV-exposed infants (HEI) should be below 2% and the antibody test of babies at 18 months should be below 5% by 2016. Furthermore, management and leadership should be strengthened to coordinate the prevention of mother-to-child transmission (PMTCT) of HIV programme and ensure its integration with maternal and child health programmes.

The millennium development goal (MDG) 4 is aimed at reducing the infant mortality rate by two thirds by 2015 (United Nations International Children's Emergency Fund [UNICEF] 2007:17). Regarding MDG 6, in his report on “Children and the millennium development goals”, the Secretary General of the United Nations, Ban Kin Moon, said the emergence of HIV and AIDS was a sudden reminder of human vulnerability in an increasingly globalised world. Further health threats inevitably lie in wait demanding constant vigilance and stronger and more extensive forms of international cooperation that can generate swift and effective responses (UNICEF 2007:84). This is a call for all countries including South Africa to take action. Health researchers need to undertake studies that will look into effectiveness in systems and factors that will influence cooperation in response to the call. This should be at all levels from smaller units like facilities up to international.

In a study in Malawi on mortality and health outcomes of HIV-exposed and -unexposed children in a PMTCT cohort, Landes, Van Lettow, Chan, Mayuni, Schouten and Bedell (2012:6) found a high mortality at 20 months among HIV-exposed children. Although Landes et al (2012:6) reported a low uptake of early diagnosis, their results indicate high mortality at 20 months among HIV-exposed infants (187 deaths/1000 livebirths),

consistent with a meta-analysis in sub-Saharan Africa (SSA) reporting a cumulative mortality rate of 174/1000 livebirths among HIV-exposed children at 24 months.

Literature studied will illustrate that mortality is still high in HIV-exposed than unexposed children in South Africa. The PMTCT clinical guideline (DOH 2009:35) stipulates that HIV-exposed infants should be followed up at least monthly in the first year of life and every three months thereafter, regardless of their method of feeding. Infants clinically suspected of having HIV should be tested for HIV, regardless of their age. The researcher will illustrate in the study the significance of following this guideline for prevention of infant mortality.

The *South African Expanded Programme on Immunisation (EPI) schedule* stipulates that all children should be immunised at 6, 10 and 14 weeks, and at 9 and 18 months. All HIV-exposed infants (HEI) not on ART should have a rapid HIV test at 18 months of age (DOH 2009:35). The relationship and linkage between EPI and management of HEI will be illustrated as the study unfolds.

In this study, therefore, the researcher sought to determine the meaning and interpretation by facility managers and nurses on utilisation of EPI and IMCI programmes for follow-up and antibody testing of HIV-exposed infants (HEI) at 18 months in Steve Tshwete of Nkangala district in Mpumalanga province in South Africa.

1.2 BACKGROUND INFORMATION

1.2.1 Global view of child mortality linked to HIV exposure

In his foreword on the report on the children and the MDGs, Ban Kin Moon, Secretary General of the United Nations (UNICEF 2007: v) acknowledges that much has been done to work towards realising the MDGs. He also cautions, however, that a lot still needs to be done. It is evident in his report that prevention of mother-to-child transmission (PMTCT) of HIV is the cornerstone to realising MDG 4 and 6 on two thirds reduction of infant mortality and combating HIV and AIDS, respectively (UNICEF 2007:79). The 2012 child mortality report indicates that child mortality in the sub-Saharan region, of which South Africa is part, is still very high. Only 30% of the expected reduction has been achieved (UN 2012:26).

The 2011 UNICEF report on trends in mortality shows that the highest rates of child mortality are still in sub-Saharan Africa where one in eight children dies before the age of five (UNICEF 2011:1). According to the report, this is more than seventeen times the average for the developed regions where the rates are one in a hundred and forty-three. In Asia, the rates are one in fifteen, which is still lower than the sub-Saharan rates (UNICEF 2011:1). Although HIV infection has shown some decline as a cause of death, it is still one of the causes of death in the sub-Saharan region (UNICEF 2011:5).

1.2.2 HIV-exposed babies in South Africa

South Africa has a comprehensive guideline on PMTCT which takes the mother from before pregnancy up to when the baby is eighteen months old. According to the guideline, the mother, if positive, is initiated on prophylaxis ARVs or long-life ARVs depending on what she qualifies for (DOH 2013a:7). In a previous chapter follow up of an HIV exposed infant was specified (DOH 2013a:11).

The EPI schedule (DOH 2010) ensures that the baby visits the health facility at six to eight weeks and eighteen months, among other times. The integrated management of childhood illnesses (IMCI) for high HIV settings booklet guides frontline workers in primary health care (PHC) settings to check for HIV infection in all babies and their mothers (WHO 2008:20). This is to ensure opportunities are not missed. The IMCI adopted by the South African Department of Health in 2011 also guides nurses to use the opportunity for counselling the mother so they can exclude HIV in the baby.

1.2.3 Identification of HIV-exposed children in Nkangala district in Mpumalanga province

Although the HIV prevalence in South Africa is stabilising according to the 2011 antenatal survey, the Mpumalanga province prevalence rose from 35.1% to 36.7% (DOH 2012a:15). Although Nkangala district is the lowest of the three Districts in Mpumalanga with prevalence, in the child problem identification programme (CPIP presentation), available data illustrated that HIV-exposed infants are admitted to paediatric units with unknown status, and some die. Accordingly, the study wished to determine the meaning and interpretation by facility managers and nurses on utilisation

of EPI and IMCI programmes for follow-up and antibody testing of HIV-exposed infants (HEI) at 18 months.

1.2.4 Study setting

The setting for qualitative research is the field which is the place where the individuals live or work and experience life (Streubert & Carpenter 2011:27). In hermeneutic phenomenology, the setting is the world as lived by the participant and not as a separate entity (Laverty 2003:4).

Steve Tshwete is one of the six sub-districts of Nkangala district of Mpumalanga province in South Africa (Fig1.1). The population pyramid of Steve Tshwete shows a high population in the working class age group 20-39 years (DOH 2012d:23). These are also a child-bearing group. The relatively large economies of Steve Tshwete and the other sub-districts of Emalahleni sustain the economy of Nkangala to a great extent and are based on the steel industry, with a high reliance on the manufacturing sector. Working mothers in most cases leave the care of their children to carers who have to take them to health services for care and treatment. This might impact on the follow up of babies in the facilities.

Six facilities in Steve Tshwete were purposively selected based on the EPI and IMCI services provided. Of the facilities providing EPI and IMCI, a multistage cluster sampling was done to include facilities at township, farming (rural) and city level. This was to incorporate meaning and interpretation by facility managers and nurses from different areas providing EPI and IMCI programmes for follow-up and antibody testing of HEIs. The facilities selected were agreed upon with the sub-district management.

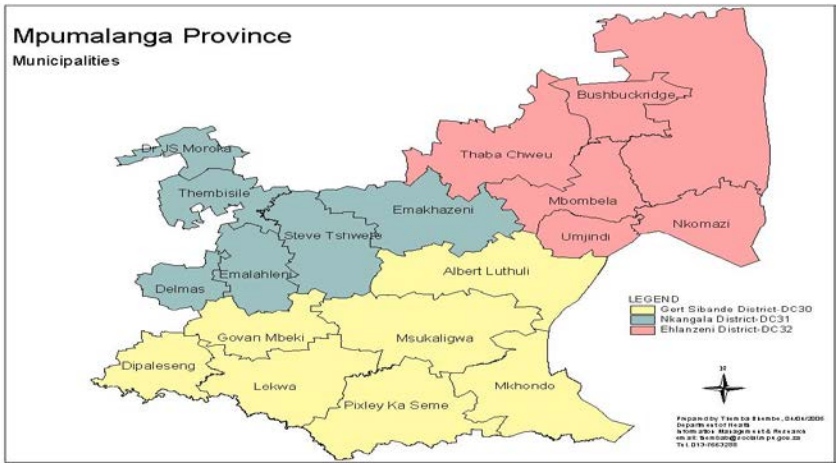

Figure 1.1 Map of the Nkangala district municipality in relation to the province

(Adopted from the DOH 2012d:18)

1.3 PROBLEM STATEMENT

Although more than 90% of babies born of HIV-positive mothers in Steve Tshwete have their PCRs done at six weeks of birth that is not the case with antibody testing at 18 months (DOH 2012b:23). The results of the child problem identification programme (CPIP) illustrate that many babies born of HIV-positive mothers were admitted to the paediatric units in the local hospital with HIV-related ailments. This was in spite of the fact that South Africa has some of the best guidelines for EPI and IMCI.

There is no clear indication on how these guidelines complement each other. The factors in the health systems that affect the utilisation of EPI and IMCI for follow-up and antibody testing of the HEI are not clearly documented. Against this background, the researcher proposed to undertake a hermeneutic phenomenological enquiry on the meaning and interpretation by facility managers and nurses on utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months in Steve Tshwete sub-district of Nkangala in Mpumalanga province, South Africa.

1.4 AIM OF THE STUDY

The aim of a study in nursing is to answer questions or solve problems of relevance to the nursing profession (Polit & Beck 2008:19). This could be to answer nursing practice, nursing education or nursing management.

1.4.1 Purpose of the study

The purpose of this study was to determine the meaning and interpretation by facility managers and nurses in the utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months in the Steve Tshwete sub-district of Nkangala in Mpumalanga province, South Africa.

1.4.2 Research question

The study wished to answer the following question:

What is the meaning and interpretation of factors affecting utilisation of EPI and IMCI for follow up and HIV testing of HEI in the Steve Tshwete sub-district facilities as perceived by the nurses?

1.4.3 Research objectives

The objectives of this study were to:

- Have an understanding of available services in the facilities selected for the study.
- Determine the meaning and interpretation as experienced by facility managers and nurses of the utilisation of EPI and IMCI programme for follow-up and antibody testing of HEIs at 18 months.
- Define the systems and factors influencing follow-up and management of HEIs as experienced by EPI and IMCI facility managers and nurses.

1.5 SIGNIFICANCE OF THE STUDY

The findings from this study will assist the frontline workers to gain knowledge in the management of the HEIs. The babies themselves will be managed effectively while the Department of Health can improve the services as well as guidelines to accommodate the target community. The increased body of knowledge will also assist in health education to both staff and patients to ensure that management of these babies is strengthened.

1.6 RESEARCH DESIGN AND METHODOLOGY

The study was a qualitative phenomenological, interpretive, hermeneutic enquiry. Data was collected by means of in-depth interviews in order to acquire an understanding of and interpret the phenomenon under study (see chapter 3 for detailed discussion of the research design and methodology).

1.7 SCOPE OF THE STUDY

The scope of the study was limited to the six facilities selected in Steve Tshwete sub-district in Nkangala district of Mpumalanga province. EPI and IMCI services were chosen primarily because they form the basis for paediatric care and general child health services and their service provision in those selected facilities are such that they are the suitable setting for the study. The scope of the study was further to define the parameters and focus of HEI within these services. The information was gathered through interviewing the facility manager and nurses working in the EPI and the IMCI service points. The data was analysed and interpreted and the final results presented (Streubert & Carpenter 2011:92).

1.8 DEFINITION OF KEY TERMS

For the purposes of this study, the following key terms are used as defined below.

Expanded programme on immunisation (EPI). A South African Department of Health programme which specifies that all babies at 6, 10, and 14 weeks, and at 9 and 18 months, should be immunised (DOH 2010:35).

HIV-exposed infant. Infant born to an HIV-positive woman (DOH 2010:5). A child born to an HIV-infected mother but without a confirmed HIV infection or a child exposed to infected blood products without confirmed HIV infection.

Integrated management of childhood illnesses (IMCI). The IMCI is a systematic approach to children's health which focuses on the whole child and includes curative as well as preventive care. The approach was developed by the United Nations Children's Fund and the World Health Organization in 1992 (WHO 2008:20).

Mother-to-child transmission. Transmission of HIV from an HIV-positive woman to her child during pregnancy, delivery, or breastfeeding. The term is used because the immediate source of the infection is the mother, and does not imply blame on the mother (DOH 2013a:5).

Infant mortality rate (IMR). This refers to the probability of dying between birth and exactly one year of age expressed per 1,000 live births (Joubert & Ehrlich 2007:2).

Prevention of mother-to-child transmission (PMTCT) of HIV. The PMTCT is a programme that aims to reduce maternal transmission of HIV to babies. It reaches out to all women before and during pregnancy, during labour and delivery, and through postnatal up to a period of 18 months (DOH 2013a:5).

How does this study define these concepts?

For the purpose of the study, the concepts are used as defined in the definitions.

1.9 STRUCTURE OF THE DISSERTATION

The dissertation is divided into five chapters.

Chapter 1 introduces the research topic; outlines the background to the study; describes the setting, purpose, objectives and significance; briefly describes the design and methodology, scope and limitations of the study, and defines key terms.

Chapter 2 describes the literature review undertaken on South Africa and other countries in relation to utilisation of EPI and IMCI services for the management of HIV-exposed babies up to 18 months.

Chapter 3 describes the research design and methodology.

Chapter 4 presents the data analysis and interpretation, and the results.

Chapter 5 concludes the study, briefly describes its limitations, and makes recommendations based on the findings.

1.10 CONCLUSION

This chapter introduced the study on the utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs in Steve Tshwete sub-district of Nkangala district in Mpumalanga province. The researcher outlined the background to the study, the purpose and objectives, research design and methodology, scope and significance of the study.

Chapter 2 discusses the literature review conducted for the study.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

Chapter 1 described the background to, purpose and significance of the study. This chapter discusses literature review conducted for the study.

Creswell (2009:25) cites Cooper (1984) and Marshall and Rossman (2006), who state that a literature review shares the results of other studies that are closely related to the current study and relates the study to a larger on-going dialogue about a topic. The literature review also gives academic views on the topic under examination. There is no consensus on whether one should do a literature review before a study. Polit and Beck (2008:105), however, point out that, researchers rarely conduct research in an intellectual vacuum. As the study is interpretive phenomenology, the researcher presents an evaluative report on the literature related to the study that was reviewed.

This chapter outlines the literature reviewed for the purpose of the study. The review covered international management of HEIs for a contextual background; the PMTCT, especially the paediatric aspect thereof in relation to the systems entrenched in the EPI and IMCI services. It also looked at infant mortality globally in relation to South Africa and Mpumalanga, bringing it down to Steve Tshwete sub-district in Nkangala district. Further, it looked at the Government response to the prevention of mother-to-child transmission of HIV, and factors influencing the utilisation of the EPI and IMCI services in follow-up and management of HEI in other countries. The purpose of this chapter was therefore to enhance understanding of the subject and results of related studies.

2.2 PROVIDER INITIATED COUNSELLING AND TESTING (PICT) IN PAEDIATRICS

In a study in Nigeria, Babatunde, Ogunbosi, Regina, Oladokun, Biobele, Brown, Kikelomo and Osinusi (2011:6) found that the Provider Initiated HIV Testing and Counselling (PITC) is useful in identifying HIV infection in patients presenting to health

facilities who do not have the classical symptoms and signs of the infection, thereby limiting missed opportunities for early detection and care. The findings indicated that of children without the classical features of HIV Infection, 17 (3.1%) were found to be seropositive for HIV infection, and 10 (1.8%) were confirmed positive for retroviral infection.

Babatunde et al's findings (2011:6) confirm the need to offer routine screening to all children presenting in health facilities; identify HIV-infected children early to reduce morbidity and mortality; expand access to PMTCT services; ensure implementation of PITC in paediatric settings, and expand support services for HIV-infected children. This is in line with the PMTCT guideline (2009:35) which also stipulates follow up and HIV testing of HIEs.

2.3 STIGMA AND DISCRIMINATION

In their study in Zimbabwe, Buzdugan, Watadzaushe, Dirawo, Mundida Langhaug, Willi, Hatzold, Ncube, Mugurungi, Benedikt, Copas and Cowan (2012:7) concluded that HIV testing is the essential gateway to prevention and care services for children. The data indicated positive attitudes to testing children in Zimbabwe. The study nevertheless found that positive attitudes to medical procedures do not always concretise as high uptake (as is the case for male circumcision as an HIV preventive method). Hence, there is a need to better understand the barriers to paediatric testing, such as stigma and discrimination, and address the gaps in knowledge regarding HIV/AIDS in children.

2.4 POLICY ON PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV

In South Africa, the DOH (2009:35) stipulates that HIV-exposed infants should be followed-up at least monthly in the first year of life and every three months thereafter, regardless of their method of feeding. Infants clinically suspected of having HIV should be tested for HIV at 6, 10 and 14 weeks, and at 9 and 18 months; all children should be immunised according to the Expanded Programme on Immunisation (EPI) schedule, and all HIV-exposed infants not on ART should have a rapid HIV test at 18 months of age (DOH 2009:35). The 18 months test is for HIV exposed infants on breastfeeding who had a negative PCR test at 6 weeks. The other HIV tests in between are for babies who are suspected of HIV due to clinical presentation.

Despite these efforts, the PMTCT programme had not delivered according to expectation and there was a need to strengthen it. As of March 2009, MTCT proportions varied widely across the country, averaging at 12% nationally but with some districts reporting MTCT proportions of above 20% (DOH 2009). This was higher than the transmission rate of less than 5% expected from a well-functioning PMTCT programme and the stipulated target in the NSP for HIV and AIDS and STIs, 2007-2011. To address this problem, a plan to accelerate the PMTCT programme was initiated.

2.4.1 Prevention of mother-to-child transmission of HIV accelerated plan

The PMTCT accelerated plan was initiated in 2009 as a focused plan of implementation and was part of the National PMTCT programme operational plan. The main objective of the plan was to accelerate implementation of PMTCT services to reduce Mother-to-child transmission of HIV to less than 5% by 2011 in 18 priority districts by: Increasing access (demand) to PMTCT services through coordinated social mobilisation strategies; implementation of tested and proven models of quality improvement to ensure delivery of quality PMTCT services at health care facilities.

The main aim was to scale-up access and improve quality of PMTCT services to reduce MTCT as per the NSP for HIV/AIDS and STIs 2007-2011. In the next paragraph, the outcome of the aim will be addressed. It was further to integrate the PMTCT programme into the existing maternal and child health interventions, such as basic ante-natal care (BANC), integrated management of childhood illnesses (IMCI), expanded programme on immunisation (EPI) and sexual and reproductive health (S&RH). This was also to ensure that mothers living with HIV and their babies are appropriately referred to HIV and AIDS services for continued treatment, care and support (DOH 2009). The Accelerated Plan or the A plan was a way of accelerating reduction of MTCH.

Though the A plan resulted in a great improvement in the outcomes, Mpumalanga still had one of the highest rates after the Eastern Cape according to a study to evaluate the effectiveness of PMTCT in South Africa. The study illustrated that in Mpumalanga babies PMTCT born of HIV positive mothers had a PCR positivity rate of 5,7% at 6 weeks while those of mothers who said they were not HIV positive had a rate of 7,8% (Goga, Dinh & Jackson 2012:31). This creates a need to understand the factors that

influence the integration of PMTCT into other programmes, especially Paeds HIV management into EPI and IMCI.

With the advancement in management of HIV in South Africa, in 2011, the Government and different stakeholders developed the *National HIV and AIDS and STIs strategic plan (NSP), 2012-2016.* In this plan the infection rate for PCR test at 6 weeks should be below 2% and the HIV antibody rate at 18 months should be below 5%. This is seen as a way of revitalisation of prevention of mother-to-child transmission. The 2013 PMTCT guideline re-emphasises this in relation to paediatric HIV management.

During a programme review on 15 March 2012 in the Mpumalanga Province data illustrated that Nkangala district performance in infant antibody testing uptake at 18 months was: Quarter 1: 20.3%; Quarter 2: 21.5%, and Quarter 3: 18.3%, with an average of 20.3%. This was against a national target of 30%. In some of the Steve Tshwete sub-district facilities, there was no data in that period for antibody testing at 18 months. However, even though no babies were tested in those facilities, the 18 month EPI numbers were high.

2.4.2 Infant mortality in South Africa and other countries

The 2011 UNICEF report on trends in mortality indicates that the highest rates of child mortality are still in sub-Saharan Africa where one in eight children dies before the age of five. The report indicates that this is more than seventeen times the average for developed regions where the rates are one in a hundred and forty three. In Asia the rates are one in fifteen, which is still lower than the sub-Saharan rates (UNICEF 2011:1). Although HIV infection has shown some decline as a cause of death, it is still one of the causes of death in the sub-Saharan region (UNICEF 2011:5).

Maternal, perinatal and under-5 mortality in South Africa remains unacceptably high. According to the Department of Health's November 2011 Report of the Health Data Advisory and Coordination Committee, the figures for Maternal Mortality Ratio, Under-five, Infant and Neonatal Mortality Rate are 310/100000, 56/1000, 40/1000 and 14/1000 live births, respectively. South Africa modified the CARMMA campaign of the African Union Commission which focuses on maternal mortality and included under 5 mortality, where it is cited that the 2015 MDG target for Maternal Mortality Ratio and under-five

mortality rate is 38/100000 and 20/1000 live births based on 1998 Demographic and Health Survey baseline of 150/100000 and 59/1000 live births, respectively (DOH 2012:7).

In addition, it is important to understand that reduction of maternal and under-five mortality is one of the key goals of the Millennium Declaration (UNAIDS 2008:12). The infant mortality rate (IMR) in South Africa in 2009 was estimated at 44 per 1000 live births compared to Mexico where it was 18 and Brazil 23 per 1000 live births, respectively (UNAIDS 2012:26).

The relevance of the infant mortality situation to the study is that unless we follow up HIV-exposed infants, identify and treat those that become positive, we will not meet the MDG 4 and 6.

2.4.3 Infant mortality in Steve Tshwete in Nkangala district

Although the HIV prevalence is stabilising in South Africa according to the 2011 antenatal survey, the Mpumalanga province prevalence rose from 35.1% to 36.7% (DOH 2012:15). Nkangala district is the lowest of the three with prevalence, yet the child problem identification programme (CPIP presentation) illustrates that HIV- exposed infants are admitted to paediatric units in the district with unknown status and some die. In this study the researcher seeks to describe the factors within the health systems in the six selected facilities that have an effect on the utilisation of the EPI and the IMCI programmes for follow-up and antibody testing of HEI at 18 months as perceived by the nurses in these facilities

During the provincial quarterly programme review held on 15 March 2012 in Mpumalanga, the presentations showed that Nkangala in Mpumalanga had the highest infant mortality rate in relation to other districts and provinces (see table 2.1). This supports the CPIP findings.

Table 2.1 Nkangala infant mortality rate, 2011/2012 Q1 to Q4

	Baseline	Q1	Q2	Q3	Q4	Average
Nkangala	**37.5/1000**	32	37.4	57.2	35.9	**44.2**
District 2	**31.5/1000**	29	29.0	26.4	34.6	**29.8**
District 3		No data	33.7	27.8	34.0	**31.8**

(Source: Mpumalanga Department of Health 2012b)
Key: Q = Quarter

2.5 PMTCT WITH THE EMPHASIS ON HIV-EXPOSED INFANTS AND THEIR MANAGEMENT

As literature will illustrate, there seems to be a strong relationship, relevance, importance of issues, and implicit connection between ideas in health systems strengthening, and factors affecting the utilisation of EPI and IMCI services in the management of HEI (WHO 2007:v). There is a need to have a sound understanding of factors affecting the utilisation of these services in the management of HEI within the systems in the existing paediatric services. Global, national, provincial, district and sub-district literature illustrate what has been done in response to the HIV infection with the emphasis on prevention of mother-to-child transmission and management of HIV-exposed infants.

2.5.1 Global perspective on management of HIV-exposed babies

In his foreword to the report on the children and the MDGs, Ban Kin Moon, Secretary General of the United Nations (UNICEF 2007:v) acknowledges that much has been done to work towards realising the MDGs, but cautions that a lot still needs to be done. The report stresses that prevention of mother-to-child transmission (PMTCT) of HIV is the cornerstone to realising MDG four and six on two thirds reduction of infant mortality and combating HIV and AIDS, respectively (UNICEF 2007:79). The 2012 report indicates that child mortality in the sub-Saharan region, of which South Africa is part, is still very high. Only 30% of the expected reduction has been achieved (UN 2012:26).

The 2011 UNICEF report on trends in mortality shows that the highest rates of child mortality are still in sub-Saharan Africa, where one in eight children dies before the age of five. The report emphasises that this is more than seventeen times the average for developed regions where the rates are 1:143.). Although HIV infection has shown some decline as a cause of death, it is still one of the causes of death in the sub-Saharan region (UNICEF 2011:5).

In a Malawi study on mortality and health outcomes of HIV-exposed and -unexposed children in a PMTCT cohort, Landes, Van Lettow, Cha, Mayuni, Schouten and Bedell (2012:6) found a high mortality at 20 months among HIV-exposed children. The study found a low uptake of early diagnosis, although there was still a high mortality in HIV-exposed babies. The researchers concluded that infant and child mortality could be dramatically reduced through effective PMTCT coupled with treatment of maternal HIV infection. This addresses not only vertical transmission of HIV but the effect of maternal health (and survival) on infant health and survival. This is inherent in the South African guidelines on PMTCT.

2.5.2 South African (including Nkangala district) perspective on management of HIV-exposed babies

Chapter 1 discussed the targets set in the NSP. Some successes have been experienced in PMTCT since the roll-out of the previous NSP, 2007-2011, hence the lowering of the targets in the 2012-2016 NSP. The targets have been reduced for 6 week-old babies from below 5% positivity to below 2% positivity and a new target for HIV positivity on 18 months babies to below 5% positivity. The strategy is working towards reducing infections due to vertical transmission to zero (DOH 2011a:12). This is also in line with the MDG 4.

Furthermore, management and leadership should be strengthened to coordinate the prevention of mother-to-child HIV transmission (MTCT) programme and ensure its integration with maternal and child health programmes (see section 2.8 for discussion on the relationship between systems theory, PMTCT, IMCI, and EPI in response to MDG4).

2.6 INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES

The Integrated Management of Childhood Illness (IMCI) strategy was launched in 1996 by the World Health Organization (WHO) and UNICEF to reduce under-five mortality (WHO 2008:1), particularly from pneumonia, diarrhoea, measles, malaria and malnutrition. The IMCI has three main components: (1) improving health worker performance through training of first-level facility workers and a follow-up visit within 1 month after training to reinforce the application of new skills in the health worker's environment; (2) improving health system support to IMCI through efforts to ensure drug and vaccine availability, strengthen supervisory activities, increase access to and quality of care in referral facilities and build administrative support for IMCI at national and district levels, and (3) improving family and community practices related to child health and development.

In a study on the achievements and challenges in scaling up IMCI to national level in Peru, researchers: Huicho, Da´Vila, Campos, Drasbek, Bryce and Victora (2005:21) found that the scarcity of data on child health programme implementation at district level in Peru cannot be attributed entirely to the national or district programmes. Considerably more data, of better quality, was available for other child health programmes, such as EPI. A contributing factor may be that the generic guidelines for implementing IMCI contain relatively few concrete recommendations for how implementation, including training coverage or quality, should be monitored, or how the resulting information can be used to improve programme performance.

Gouws, Bryce, Habicht, Amaral, Pariyo, Schellenberg and Fontaine (2004:513) found that IMCI case-management training can improve the use of antimicrobial drugs significantly among health workers who treat sick children in first-level outpatient health facilities in low- and middle-income countries. IMCI-trained health workers were more likely than their colleagues who had not had training in IMCI to prescribe antibiotics and antimicrobials correctly, and to communicate effectively to caregivers. In this study, the researcher based some of the arguments on these findings.

2.7 EXPANDED PROGRAMME ON IMMUNISATION

The WHO initiated the expanded programme on immunisation (EPI) in May 1974 with the objective of vaccinating children throughout the world. The aim of the Expanded Programme on Immunisation in South Africa (EPI-SA) is to prevent death and reduce suffering from infections that can be prevented by immunisation of children and women (DOH 2010:3). The schedule of the programme up to 18 months makes the follow-up of all babies and children, including the HIV-exposed, possible. This programme is a good platform for management of HIV-exposed children.

The programme has been reviewed over the years for improvement. In 2002, when no progress in the implementation of the EPI programme was observed, the WHO and its partners devised an innovative strategy, called Reach Every District (RED), to improve the implementation (Ryman, McCauley, Nshimirimana, Taylor, Shimp & Wilkins 2005:18). The strategy has five components, namely effective planning, reaching target populations, supportive supervision, monitoring for action, and linking services with communities.

In their evaluation of the strategy, Ryman et al (2005:18) found that evaluation of the RED implementation process provided evidence of improvement in delivery of routine immunisation services. The RED framework should continue to be used to strengthen the immunisation delivery system to meet continuing new demands, such as the introduction of new vaccines and integrated delivery of other child survival interventions. Some of these child survivals are follow-up of HEI and excluding MTCT of HIV.

2.8 HEALTH SYSTEMS STRENGTHENING

The WHO (2007:2) states that it will be impossible to achieve national and international goals – including the *Millennium Development Goals* (MDGs) – without greater and more effective investment in health systems and services. The fourth MDG is reduction in infant and under-five mortality rates. This systems framework has been blended into the conceptual underpinning of the study.

According to the framework, a health system consists of all organisations, people and actions whose *primary intent* is to promote, restore or maintain health. The health

system is therefore more than the pyramid of publicly owned facilities that deliver personal health services, but an interrelationship of different sub-systems (WHO 2007:2) (see figure 2.1). The WHO (2007:2) defines overall health system outcomes or goals as improving health and health equity, in ways that are responsive, financially fair, and make the best, or most efficient, use of available resources. The relationship to the study is that it looks at utilisation of available resources (EPI and IMCI) to manage HEI.

2.8.1 Health systems building blocks

According to the Health Systems Framework (WHO 2007:3), a well-functioning health system is built on six blocks: (1) good health services, (2) a well-performing health workforce, (3) a well-functioning health information system, (4) access to essential, medical products, vaccines and technologies, (5) a good health financing system, and (6) leadership and governance. This framework has been minced into the conceptual framework to illustrate that systems equilibrium as opposed to disequilibrium will render systems, namely the facilities in the case of this study, effective particularly in regard to paediatric HIV management and EPI and IMCI.

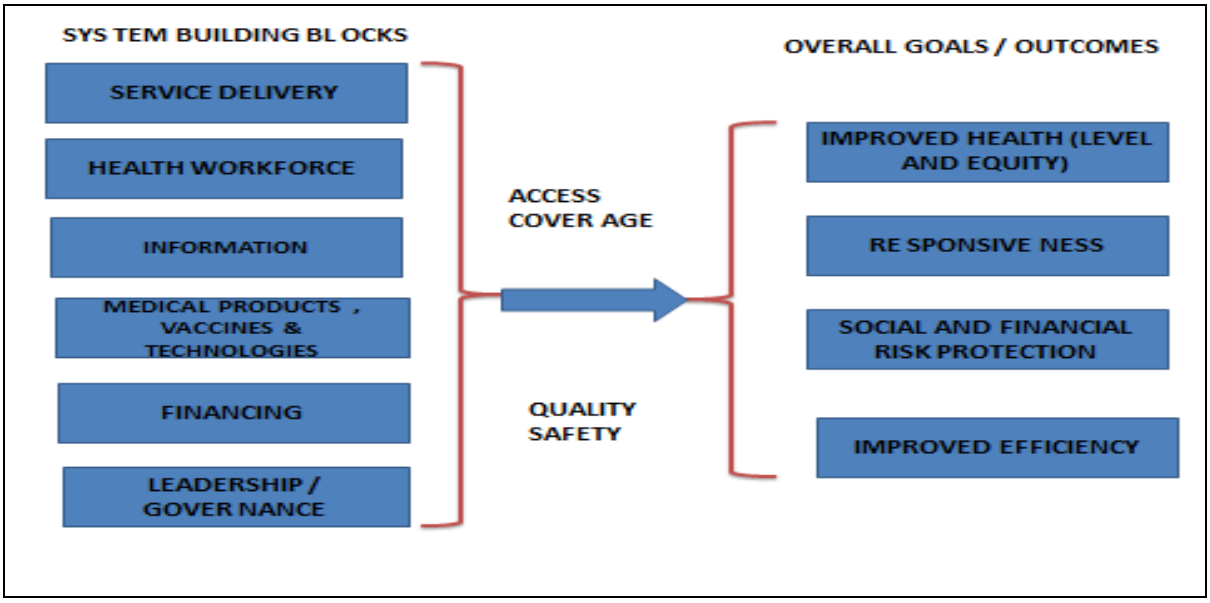

Figure 2.1 WHO Systems Framework

(Adapted from WHO 2007:3)

2.8.2 Relationship between programmes and systems

In a study in Zimbabwe on the implications of HIV and AIDS programmes on health systems, Chevo and Bhatasara (2012:10) found a strong multidimensional relationship

between the programmes and the health systems. Chevo and Bhatasara (2012:10) indicate further that although there is agreement that stronger health systems are needed to achieve improved outcomes in HIV and AIDS programmes, there is no consensus on how to strengthen health systems to cope with the expanded programmes.

This study sought to understand the utilisation of the services as influenced by some factors within the system in the selected facilities. The purpose was to gain a deeper understanding of the factors affecting the utilisation of EPI and IMCI in follow up and management of childhood illnesses as it is lived by the staff members selected for the study.

2.9 RELATIONSHIP OF THE SYSTEMS, PMTCT, IMCI AND EPI IN RESPONSE TO MDG4

The aim of the Expanded Programme on Immunisation in South Africa (EPI-SA) is to prevent death and reduce suffering from infections that can be prevented by immunisation of children and women (DOH 2010:3). The schedule of the programme up to 18 months makes the follow-up of all babies and children, including the HIV-exposed ones, possible. This programme is a good platform for management of HIV-exposed children. This links with the study mentioned in paragraph 2.8.2 on multidimensional relationship between health systems and programmes. The study at hand examined the factors in the health systems that affect the utilisation of EPI and IMCI programmes in the follow-up of HIV-exposed babies and the antibody testing at 18 months. This was based on the meaning and interpretation of the nurses on the link between the health systems in which the services take place.

Afran, Garciaknight, Nduati, Urban, Heyderman and Rowland-Jones (2013:11) found that through the successful implementation of policies to prevent mother-to-child-transmission (PMTCT) of HIV infection, children born to HIV-1-infected mothers are now much less likely to acquire HIV infection than previously. Nevertheless, HIV-exposed uninfected (HEU) children have a substantially increased morbidity and mortality compared to children born to uninfected mothers. Afran et al (2013:11), however, question whether improved maternal and child care and ART regimens during and after pregnancy together with optimised infant immunisation schedules can be expected to

reduce the excess morbidity and mortality of HEI. This question is relevant in the present study.

Lambrechts, Bryce and Orinda (1999:592) point out that incorporating IMCI into ongoing district and national efforts to improve child health, and linking it with other health initiatives (e.g. safe motherhood initiative) will facilitate meeting the objectives of the MDG4. Understanding the nurses' perspective on utilisation of IMCI to achieve the targets as set out in PMTCT guidelines in line with the MDG4, would give the researcher the information to come to a conclusion in the study. Therefore the researcher wished to gain an insight into the interpretation and meaning of the utilisation of the EPI and IMCI to follow-up and test HEI at 18 months as experienced by facility managers and nurses in these programmes.

2.10 CONCLUSION

This chapter discussed the literature review conducted for understanding the utilisation of EPI and IMCI for paediatric HIV management. The literature review covered the PMTCT programme; management of HIV-exposed infants and infant mortality; the importance of integrating paediatric HIV management into EPI and IMCI, and the global and South African response to the call for reduction of mother-to-child transmission of HIV. Although limited, especially with regard to the South African context, the literature reviewed illustrated similar perspectives on integrating paediatric management services for the prevention of child mortality.

Chapter 3 describes the research design and methodology.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter describes the research design and methodology used in the study, including the site and participant populations, sampling, data collection, trustworthiness and ethical considerations. The study used an interpretative hermeneutic phenomenological qualitative design.

The objectives of this study were to:

- Have an understanding of available services in the facilities selected for the study.
- Determine the meaning and interpretation by facility managers and nurses of the utilisation of EPI and IMCI programme for follow-up and antibody testing of HEIs at 18 months.
- Interpret the systems and factors influencing follow-up and management of HEIs as experienced by EPI and IMCI facility managers and nurses.

The findings of the study should add to the knowledge on the subject and create a platform to base reorganisation of the facilities and services for efficiency in the management of HEIs.

3.2 RESEARCH DESIGN

A research design is a blueprint for conducting a study in such a way that factors that could interfere with the validity of the findings are controlled (Polit & Beck 2008:24). A good design helps a researcher to avoid bias while collecting information. The study used a qualitative, interpretive hermeneutic phenomenological design.

A qualitative study is an investigation of a phenomenon in an in-depth and holistic fashion through a collection of rich narrative materials, using a flexible design (Polit &

Beck 2008:763). In qualitative research the study of humans from a philosophical point of view is deeply rooted in descriptive modes of science (Streubert & Carpenter 2011:3) The enquirer seeks in-depth understanding by collecting narrative information from the people experiencing a phenomenon which will be analysed qualitatively. The relationship of the researcher and the subject of research in this paradigm are interactive. The researcher encouraged participative interaction of the participants.

Interpretive phenomenology stresses interpreting and understanding, not just describing human experience. The focus of phenomenological inquiry, then, is the meaning of people's experience of a phenomenon, and how those experiences are interpreted (Polit & Beck 2004:253). The purpose of this study was to identify the facility managers and nurses' meaning and interpretation of the utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months in Steve Tshwete sub-district of Nkangala district in Mpumalanga province.

Denzin and Lincoln (1994) (cited in Streubert & Carpenter 2011:4) and Rose, Beeby and Parker (1995:1124) (cited in Streubert & Carpenter 2011:78) state that phenomenology as a research methodology is rigorous and its purpose is to get the structure or essence of the lived experience of a phenomenon. The researcher selected the design for the purpose of understanding factors in the health systems that influence management of HEI. The study involved an in-depth investigation of the situation in the EPI and IMCI programmes in relation to follow-up and management of HIV-exposed babies.

3.3 RESEARCH METHODOLOGY

3.3.1 Sampling

Selecting a group of people, events, behaviours, or any other elements with which to conduct a study is known as sampling. A sample is intended to acquire a representative portion of the population (Burns & Grove 2005:341). Phenomenology is a qualitative research tradition, with roots in philosophy and psychology, which focuses on the lived experience of individuals (Polit & Beck 2012:737). In phenomenology, non-probability, purposive sampling is most commonly used to select individuals based on their

particular knowledge of the phenomenon (Streubert & Carpenter 2011:90). Qualitative research uses small non-random samples (Polit & Beck 2008:353).

The number of participants in a qualitative study is adequate when saturation of information is achieved. Data saturation refers to when themes and categories in the data become repetitive and redundant, such that no new information can be obtained through further data collection(Polit & Beck 2008:70).

In this study, the researcher used purposive sampling to select specific, readily available participants who met the inclusion criteria.

3.3.1.1 Site sampling

The setting for qualitative research is the field; in other words, the place where the individuals of interest live and experience life (Streubert & Carpenter 2011:27). The researcher purposively selected six of the thirteen facilities in Steve Tshwete sub-district. These facilities were representative of the sub-district as all thirteen render all relevant PHC services, including EPI and IMCI.

Multistage/cluster sampling is done in successive stages (Polit & Beck 2004:298). First the researcher selected Steve Tshwete sub-district from the Nkangala district. Then from the thirteen facilities, two were selected from the urban (residential) area, two from the suburban (residential) area, one from the farms, and one from town (non-residential). This allowed a representative sample of all the facilities in Steve Tshwete. To be included in the study, the facilities had to offer a PHC package which includes EPI and IMCI services. The facilities were agreed upon with the sub-district management.

3.3.1.2 Population sampling

Eligibility or inclusion criteria refer to specified population characteristics used by a researcher to select subjects for participation in a study (Burns & Grove 2005:342; Polit & Beck 2008:338). The researcher purposively selected people who had lived experience of the services. To be included in the study, participants had to be

- facility managers in the selected facilities for at least a year
- professional nurses in the selected facilities and working in the EPI and IMCI services for at least a year
- willing to participate voluntarily and give consent

Nurses who had worked in the facilities for less than a year or were not willing to give consent were excluded. The purpose of sampling was to obtain information-rich participants. The total number selected was 18; in the end 16 were interviewed.

Table 3.1 Site and participant samples

Facility number	Name of facility	Number of participants
01	Facility 1	3
02	Facility 2	3
03	Facility 3	3
04	Facility 4	2
05	Facility 5	2
06	Facility 6	3
Total		**16**

3.4 ETHICAL CONSIDERATIONS

Ethics refers to a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants (Polit & Beck 2008:753). The researcher observed the ethical considerations of obtaining permission to conduct the study; protecting the rights of the respondents, and maintaining research objectivity and integrity.

3.4.1 Ethical clearance and permission

To protect the rights of the institution, the researcher obtained ethical clearance and permission from the research ethics committees of UNISA (see Annexure A) and Mpumalanga province (health) (see Annexure D). Permission from the District and Sub

District was sought with a letter written to the District (see Annexure C) (Polit & Beck 2008:184). The researcher sent this letter and attached the permission from the Mpumalanga ethics committee to the sub-district supervisors and managers to notify them of the study and the process to be followed (see Annexures C and D). This was done to ensure that the study met all the ethical requirements.

3.4.2 Protection of participants

The protection of the rights of the participants was a priority. The participants were informed about the purpose of the study, its risks and benefits, and that their responses would remain totally anonymous (see Annexure E). In addition, the respondents were informed that participation was voluntary and they could drop out at any point if they wished to do so (Streubert Speziale & Carpenter 2011:62). This ensured that their rights to self-determination and full disclosure remained protected.

The respondents were given all the details of the study and asked to sign an informed consent form as confirmation that they had been provided with relevant information and were participating voluntarily.

Though the facilities included in the study are known by the district and provincial management, care was taken to protect the participants' identities. The researcher ensured the participants' confidentiality (Streubert Speziale & Carpenter 2011:91).

3.4.3 Research objectivity and integrity

The researcher strove to maintain objectivity and integrity with no plagiarism in the conduct of the study. This implied adhering to the highest technical standards and indicating the limits to findings, the methodological constraints that determine the validity of such findings, and at the conclusion of the study, reporting the findings fully and not misrepresenting the results in any way. To the best of their ability, researchers should disclose details of theories, methods and research designs that might be relevant to interpretations of the findings (Mouton 2001:240).

3.5 DATA COLLECTION

Data was collected from 24 to 28 March 2014. The sub-district managers assisted the researcher by informing the facility managers beforehand that the researcher would be visiting the clinics to collect data for the study. The researcher negotiated with the participants to use their lunch times and other free times to participate. As they had already been briefed, they accepted. The facility managers made a quiet room which was not in use available for interviews. The facility managers introduced the researcher to the staff, especially the potential participants. The facility managers also informed the nurses - as they had already been briefed − that the sub-district and district were aware of the study, and that participation was voluntary.

The researcher established rapport with the facility personnel to gain their trust. The whole study was explained to the participants, including that in addition to writing the responses, a tape-recorder would be used for accuracy. Informed consent was signed before commencement of the interview. After this, the grand tour question was posed to open the field. The interview was conducted in privacy.

Hermeneutic phenomenology is designed to unveil otherwise concealed meanings in the phenomena (Streubert Speziale & Carpenter 2011:84). To unveil this concealed meaning, the researcher had to move backward and forward using an inquiring mind in the gathering of data to get rich information from the participants. The aim was to first get the richness of the participants' experience and unveil and interpret the factors within the systems that affect the utilisation of the Expanded Programme on Immunisation and the Integrated Management of childhood illnesses services for identification and management of HIV exposed infants.

Streubert Speziale and Carpenter (2011:91) refer to Morse's (1989) statement that saturation is a myth. This means that depending on different times and different groups and settings, more information can be generated. This was taken care of in the selection of the sample. Purposive selection ensures that knowledgeable people are selected as respondents. Data was collected until saturation occurred. The number of participants selected was 3 per facility which meant 18 participants As the researcher continued with the inquiries, it became evident that in the end there was a lot of

repetition and the researcher decided saturation had been achieved as there were no new themes emerging after 16 had been interviewed(Table 3.1).

3.5.1 Data-collection approach and method

The researcher personally collected the data by means of probing interviews. This method was chosen because it is the most powerful method of securing information since the interviewer met the respondents face-to-face and collected data from them (Polit & Beck 2008:369; Babbie 2007:257). To add to the richness of data, a tape recorder was used to gather information verbatim in addition to handwritten information field notes so that no information was lost. The participants were assured that this would not be accessible to any person other than the researcher and supervisor on request.

Interviews are costly and not anonymous, and can lead to interviewer bias (Polit & Beck 2008:424). Interviews rather than questionnaires were chosen for one-on-one contact as well as the opportunity to probe and clarify, if necessary. The interview started with a grand tour question: "What is your experience of the utilisation of EPI and IMCI programmes for follow up and antibody testing of HEIs in your facility"? This was followed by a series of open ended questions. Open ended interviewing allowed the researcher to follow the participants' lead. Care was taken during data collection from the facility managers and frontline nurses to be sensitive and flexible while probing.

According to Streubert Speziale and Carpenter (2011:90), the participants can be helped to explain in detail. This was done without jeopardising the quality of data collected. While the interview was conducted, emerging themes were categorised into common themes. Data analysis commenced with data collection (see chapter 4 for full discussion).

3.5.2 Data-collection instrument

The data-collection instrument for this study was an interview schedule. The researcher developed the research interview schedule (see Annexure F). The researcher requested colleagues who are conversant with PMTCT and Paediatric HIV management (programme officers, programme managers and coordinators) who

provide technical support to the MCWH department to review it. It was later reviewed by the Department of Health Studies of the University of South Africa (UNISA) and finally reviewed by the district research ethics committee. The schedule was meant to give the researcher an understanding of the setting to enhance probing questions. As themes emerged, the researcher moved backward and forwards the schedule to probe further till saturation could be achieved

The anonymity of the facilities was ensured by not revealing the identity, but using numbers which only the researcher could attach to the facilities. The schedule was divided into two sections. The first section collected information from the facility manager to understand the systems issues in the facilities that influence the utilisation of the EPI and IMCI services as experienced by the participants.

The second section gathered in-depth information from the facility managers and professional nurses working in these services in the selected facilities. The researcher wished to gain an understanding of facility managers and nurses' meaning and interpretation of the utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months in Steve Tshwete sub-district of Nkangala district.

3.6 MEASURES TO ENSURE TRUSTWORTHINESS

The strategies of credibility, transferability, dependability and confirmability for establishing trustworthiness were taken into consideration (Polit & Beck 2008:537; Rossouw 2003:178; Streubert Speziale & Carpenter 2011:47). The researcher ensured that the data collected and information generated can be used for enriching the health practice; in this case, utilisation of EPI and IMCI programmes for follow-up of HIEs and antibody testing and relevant management of these babies.

3.6.1 Credibility

Credibility refers to the extent to which those who read a research report can believe and accept the findings to be true (Lincoln & Guba 1985:301). One of the best ways to establish credibility is through prolonged engagement with the subject matter. Prolonged engagement is essential for building trust and rapport with the participants, which in turn makes it more likely that useful, accurate and rich

information will be obtained (Polit & Beck 2008:196). The researcher spent time with the facility personnel to engage effectively until saturation occurred.

3.6.2 Dependability

Dependability of qualitative data refers to the stability of data over time and over conditions (Polit & Beck 2008:538). Dependability is met once researchers have demonstrated the credibility of the findings (Streubert Speziale & Carpenter 2007:38). The transcribed interviews and data analysis were scrutinised by an external reviewer, namely the study supervisor.

3.6.3 Transferability

Transferability refers to the probability that the study findings have meaning to others in similar situations (Streubert Speziale & Carpenter 2011:39). The researcher envisaged the findings being used to enrich knowledge of staff and improve management of HEIs in Steve Tshwete sub-district and elsewhere.

3.6.4 Confirmability

Confirmability is a process criterion. Polit and Beck (2008:539), it refers to objectivity that is the potential for congruence between two or more independent people about the accuracy of data. Researchers document the confirmability of findings by leaving an audit trail, which is a recording of activities over time that others can follow. The objective is to illustrate as clearly as possible the evidence and thought processes that led to the conclusions. By so doing, this study met the criterion of confirmability (Streubert Speziale & Carpenter 2007:38). An audit trail was established by keeping the interview transcripts, data reduction and analysis products, notes from member checks, materials relating to intentions and dispositions, and drafts of the final report.

3.7 CONCLUSION

This chapter discussed the research design and methodology used in this study, including sampling, data collection and analysis, reliability and validity, and ethical considerations.

Chapter 4 presents the data analysis and interpretation, and the results.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION, AND RESULTS

4.1 INTRODUCTION

Chapter 3 described the research design and methodology, including the study population, sample and sampling, data collection, validity and reliability of the research instrument, and ethical considerations. This chapter presents the data analysis and interpretation, and results from the in-depth interviews. Data analysis and interpretation was done together with literature control.

4.2 OBJECTIVE OF THE STUDY

The purpose of the study was to determine the meaning and interpretation of the use of the EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months by facility managers and nurses at Steve Tshwete sub-district of Mpumalanga district in Mpumalanga province. The broad objective of the study was to generate information on the factors and systems within the six selected health facilities that may have an influence on the follow-up and antibody testing of HEIs.

Data was collected by means of in-depth probing interviews with four facility managers and twelve nurses in six facilities rendering EPI and IMCI services in Steve Tshwete sub-districts of Nkangala district in Mpumalanga province.

4.3 DATA MANAGEMENT AND ANALYSIS

Data analysis is the systematic organisation and synthesis of data, to make meaning of it (Burns & Grove 2005:43). Data analysis in phenomenological interviews starts when the interviews start. The method used was coding where narrative information was organised according to emerging themes manually. The data was organised while being collected.

The researcher first concentrated on gaining an understanding of what the data conveyed (Streubert Speziale & Carpenter 2011:45). The emerging themes from the data collected in the interviews were coded and themes with the same meaning organised into clusters. This involved the discovery not only of commonalities across subjects but also of natural variation and patterns in the data (Polit & Beck 2008: 515). Meaning was validated and discrepancies noted. Minor themes were incorporated into the main themes to avoid having too many confusing themes, without ignoring any data.

A table of categories and themes was formulated and presented to the supervisor and agreement reached on the structure and wording. There were commonalities in the information given by both the EPI and IMCI nurses since the two categories work interchangeably in both services. The facility managers gave information on the systems in which the EPI and IMCI services occur, including the services available (see table 3.2). There were similarities in the perception of participants on the flow of HEIs from post-delivery visits at three to six days and onwards up to eighteen months. The IMCI services were also provided in all the facilities on a daily basis.

4.3.1 Services available

Understanding the services available set the tone for understanding the systems in which the EPI and IMCI services take place. The facility managers explained the services available in detail. It became clear that post-partum consultations are conducted daily in some and twice a week in other facilities.

HIV care and treatment is provided on-site daily in some facilities and off-site in the hospital in the others. Though HCT is conducted daily in the facilities, it is conducted by lay counsellors. PITC is only done by the nurses when the lay counsellors are not available, otherwise babies and carers are sent to counsellors for counselling. EPI services are provided daily in one facility, once a week in one, and two days in four facilities (see table 4.1).

The participants indicated that in those facilities where the services were not offered daily, drop-in patients were not turned away, but consulted.

Table 4.1 Services available

SERVICES	FACILITIES AND FREQUENCY PER WEEK					
	1	2	3	4	5	6
Post-partum consultation	Daily	Daily	2 days	Daily	2 days	2 days
HIV care and treatment – including under 5's	Hosp	Hosp	Daily	Daily	Hosp	Daily
HCT (including PITC)	Daily	Daily	Daily	Daily	Daily	Daily
Laboratory	Hosp	Hosp	Hosp	Hosp	Hosp	Hosp
TB treatment	Once	Daily	Once	Daily	Daily	Once
Immunisation (EPI)	2 days	Daily	2 days	Once	2 days	2 days
HIV-exposed baby follow-up	Daily	Daily	Daily	Daily	Daily	2 days
Child survival clinic (IMCI)	Daily	Daily	Daily	Daily	Daily	Daily

Key: hosp: hospital

4.3.2 Qualitative data

This section presents the data from the participants. The participants described the meaning and interpretation of their experience in the utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months in Steve Tshwete sub-district of Nkangala district in Mpumalanga province. The information gathered was categorised into themes and categories based on the findings (see table 4.2). The themes and categories below illustrate the perception of nurses of the factors within the health systems that affect linking EPI and IMCI to HEI as they experience it.

Table 4.2 Themes and categories from the data

Themes	Categories	Findings
4.3.2.1 Identification and follow-up of HIV-exposed babies	• Poor follow up system Quote: "We sometimes identify babies too late when they are brought too late to the facility…sometimes they are brought by their carers posing a problem with consent for testing."	Poor record-keeping Poor link between maternity and PHC facilities Patient-related weaknesses Not all stakeholders are involved

Themes	Categories	Findings
4.3.2.2 Referral system	• Link between referring and referral facility. Quote: "…If there could be a formal link between us and the hospital…for our mothers who attended ante natal here, we usually are able to get their status if the discharge note is not recorded."	There is no back referral There is no way of determining patient's arrival at referral facility
4.3.2.3 Defaulting	• Formal defaulter tracking system Quote: *"*My heart was sore when a baby whose mother defaulted and the baby was seen after two months defaulting tested positive at 7 months…this mother was from the farms and she said: "*immobile being afikanga*" (the mobile had not turned up) and she did not have money to come to the clinic".	No clear system for defaulter tracking Patients shop around Ward-based outreach teams not yet functional Farm dwellers depend on mobile clinic
4.4.2.4 Integration	• Mother-baby pair Quote: "…I cried once when one of my EPI babies whose mother had tested negative at ANC came back for the 10 months' visit and tested positive when we realised that baby had lost weight and we asked the mother to test and she tested positive and then we did a PCR on the baby which turned out positive."	In facilities that see mother-baby pairs integrated, follow-up is evident Some facilities see mother and baby separately
4.3.2.5 Stigma and discrimination	• Disclosure to family is a problem "Sometimes the mothers end up mix feeding because they are afraid of people asking why they are not breastfeeding…I have a painful story of a police lady whose baby became positive because she mix fed her...she was an educated woman, afraid to disclose that she was positive."	Patients shop around as they are afraid to attend clinics where they are known, leading to defaulting No active support groups in 5 of the 6 facilities.

Themes	Categories	Findings
4.3.2.6 ART initiations	• On- and off-site initiations "I do initiate babies, but I struggle with bloods on very small babies and I refer them to Paediatric OPD…sometimes our doctor helps us." "Though I am NIMART trained, I am not yet comfortable to initiate babies…yes, I will when I am comfortable."	Nurses in three of the six facilities initiate babies above 1 year. Though nurses initiate babies, they are not comfortable with taking bloods on babies. Patients shop around as they are afraid to attend clinics where they are known, leading to defaulting No active support groups in 5 of the 6 facilities.

4.3.2.1 Identification and follow-up of HIV-exposed babies

The participants expressed some common experiences of the identification of HIV-exposed babies within the EPI services. The babies and mothers ideally should visit the PHC facility within three to six days' post-delivery (DOH 2011a:14). . They should have a blue form which the Mpumalanga Department of Health has developed to remind patients to report at the PHC facility within 6 days, a discharge summary which is written in the discharge form torn off the maternity record, and a Road to Health Card. All these should ideally have an indication of the baby's exposure to HIV. Some participants mentioned that patients sometimes did not bring the documents or the documents were not fully completed and they had to phone the hospital where the mother delivered the baby. The participants indicated that this was sometimes time consuming and delayed patients, leading to long waiting times.

The participants further indicated that though the province has given facilities a mandate to conduct universal testing of babies at 18 months in line with the PITC policy that all patients (including 18 month-old babies) entering the service point should be offered PITC (DOH 2011a:41), they are usually not brought by their mothers to the facilities. This then presented a problem in getting consent since legally only a legal parent can sign for the underage child. If an affidavit is sought, they do not always come back the same day, thus delaying testing the baby. In the IMCI services, the participants indicated that the IMCI guideline indicates how to identify HIV-exposed and -positive

children. According to the participants, sometimes babies who had defaulted were identified when already very sick:

> "In most cases there is an indication in the documents…mothers bring their babies' Nevirapine and we then know they are exposed…some patients tear off page 7 of the Road to Health Card…some patients say their cards are lost…some patients from the farms who have delivered at home do not have any documents…sometimes we have to phone the hospital maternity to ask about the status thus wasting time." (F1 EPI)

> "The IMCI guideline is very clear on how to identify exposed babies…some mothers stay away until baby is ill…we test mothers as proxy if baby's status is not known…sometimes the baby is not brought by the mother thereby delaying testing babies…the carers have to bring an affidavit so baby can be tested." (F2 EPI)

> "We sometimes identify babies too late when they are brought too late to the facility…sometimes they are brought by their carers, posing a problem with consent for testing." (F3 EPI)

> "We follow-up babies in EPI as per schedule…yes, this is an opportunity to identify HIV-exposed babies…the Department and other organisation have instructed us to test all babies at 18/12, but sometimes they come with carers who cannot give consent…oh...mhh, yes we sometimes...test them and if it is not the mother, we tell the carer to ask the mother to come to the clinic so we can give the results…if the mother has a phone we phone her to come to the clinic …I am not aware of policy on what to do if the mother cannot come, mhh...I think we need clarity on this." (F6 EPI)

4.3.2.2 Referral system

The participants indicated that there was no means of knowing how many patients to expect from maternity. Patients just arrived at the clinic. They mentioned that it would have been better if the patients had attended antenatal care in their facilities. However, often patients were from other antenatal clinics. These patients lead to nurses' phoning the maternity to find out what their status is. The participants indicated that there is no back referral from the hospital for patients referred to hospital for initiation. According to

the participants, this sometimes delays rendering relevant service to the babies as they have to phone the hospital for information, which is not always readily available:

> "If there could be a formal link between us and the hospital…for our mothers who attended antenatal here, we usually are able to get their status if the discharge note is not recorded…generally we know because the mother will tell you…they (mothers) usually are cooperative." (FI EPI)

> "Our supporting doctor is very helpful when we consult him…When we send sick children to the hospital outpatients department we do not get a back referral note …we sometimes phone to find out what happened to these babies." (F1 IMCI)

4.3.2.3 Nurses' perception of defaulter tracking system

The participants stated that they used different methods of tracking to follow-up patients. These are patients whose PCR warrants immediate response. The participants also indicated that some patients default because they do not go to clinics close to where they live:

> "We do not have a defaulter tracking system…we sometimes use home-based carers as we do not have an outreach team here…the nurses sometimes go out to trace babies." (F6 Facility Manager)

> "Some women migrate from other provinces or towns because their husbands work here, then after delivery they go home, therefore their babies seem like defaulters." (F4 EPI)

> "My heart was sore when a baby, whose mother defaulted and the baby was seen after two months' defaulting, tested positive at 7 months…this mother was from the farms and she said the mobile clinic had not turned up and she did not have money to come to the clinic." (F2 EPI)

> "Sometimes the patients default because they use a clinic that is not in their vicinity, so when they do not have money they cannot come…we see a lot of that in IMCI when a baby is brought in because she is not well…." (F2 EPI)

> "I had a child of 7 years who came to my room not well with granny…I do not know whether to call this defaulting…She had never been immunised…they came from the farms…we had to do catch up. Baby was ultimately transferred to hospital.l" (F2 IMCI))

> "Maybe if we already had ward-based outreach teams functional in the farms they could help track our babies or reinforce the health education we give. Maybe increasing mobile clinics or making them visit more can curb the defaulters as the service will be taken to patients in the farms." (F1, F3, F6 Facility Managers)

4.3.2.4 Integration

The participants in facilities that treat mother and baby together in EPI expressed their ability to conduct HCT to mothers who tested negative through ANC and delivery who are breastfeeding. In areas where this is not the case, they stated that sometimes babies who had tested PCR negative tested positive post-cessation of breastfeeding:

> "I cried once when one of my EPI babies whose mother had tested negative at ANC came back for the 10 months visit and tested positive when we realised that baby had lost weight and we asked the mother to test and she tested positive and then we did a PCR on the baby which turned out positive…." (F2 EPI)

4.3.2.5 Stigma and discrimination

The participants stated that though stigma did not seem a huge problem, there were still signs of stigma amongst the mothers, leading to poor outcomes in management of the HIV-exposed babies. This was evident in mothers who did not want to use the clinics in their vicinity because people knew them in those facilities.

> "Though stigma is lesser, we still see mothers who shop around because they are known in a specific clinic…I think stigma is about 75% less…they use our clinic because they are known in the clinic near to where they live…the problem is when they cannot come, the baby defaults." (F2 EPI)

> "Some of our patients prefer to go to the facilities in town where they think they are not known…sometimes the mothers end up mix feeding because they are afraid of people asking why they are not breastfeeding…I have a painful story of a police lady whose baby became positive because she mix fed her baby...the painful thing is that she herself said that she knew, she is an educated woman, but was afraid as her family did not know that she was positive…I think we need more health education." (F1 EPI)

> "In our facility we avoid separating patients by stickers or specific files so that they do not feel different." (F4 Facility Manager)

> "Maybe if we had support groups, the stigma would be far less because the patients would know each other…." (F5 Facility Manager)

4.3.2.6 Paediatric ART initiation

The participants in facilities where they initiate HIV-positive babies on site, expressed satisfaction as they felt mothers and babies could be booked and seen together. They, however, cited a gap in that they cannot take bloods on especially less than 1 year-old babies. The participants in the facilities that still referred to the hospital for initiation expressed dissatisfaction because they sometimes, though rarely, lose these children to follow-up:

> "I do initiate babies, but I struggle with bloods on very small babies and I refer them to Paediatric OPD…sometimes our doctor at the hospital helps us." (F2 IMCI)

"Though I am NIMART trained, I am not yet comfortable to initiate babies…yes, I will when I am comfortable."(F5 IMCI)

4.4 DISCUSSION OF FINDINGS

The Department of Health (2011c:14) policy on MTCT states that the programme should aim to reduce transmission of HIV from mother-to-child to less than 2% at six weeks after birth and less than 5% at 18 months of age by 2016.

Furthermore it stresses that, management and leadership should be strengthened to coordinate the PMTCT programme and ensure its integration with maternal and child health programmes. A study in Malawi on the mortality and health outcomes of HIV-exposed and -unexposed children in a PMTCT cohort found a high mortality rate at 20 months among HIV-exposed children (Landes et al 2012:6). EPI and IMCI are the entry point of paediatric management, hence the study aimed at generating information on the participants' meaning and experiences of the utilisation of the services on follow-up and management of HEIs.

The researcher identified six themes that emerged from the data, namely identification and follow-up of HIV-exposed children; referral system; defaulting; integration; stigma, and on- and off-site ART initiations. Although the facility managers and the EPI and IMCI nurses were interviewed separately, their information overlapped very often since all the nurses, including the facility managers, worked in both services when the need arose.

In their study, Ryman et al (2005:18) found that the RED strategy could be integrated and used to strengthen other programmes. Moreover, the re-establishment of outreach component of RED provided a strong platform for integrating other health services with the immunisation programme. The researcher agrees and is of the opinion that while strengthening the integration of management of HEIs into EPI and IMCI, there needs to be a link with ward out-based teams which work with the communities. This would address not only identifying babies that need to be immunised or antibody tested, and also facilitate defaulter tracking.

In a study on using IMCI to introduce other selected programmes, Gouws et al (2004:513) found that antimicrobial drugs could improve those programmes. The findings of this study indicate the need to utilise EPI and IMCI for identification and follow-up of HIV-exposed infants. Furthermore, IMCI training, including introduction of antimicrobial drugs, emphasises supervised clinical practice, and in some settings health workers are visited in their facilities shortly after training to reinforce their new IMCI skills (Gouws et al 2004:510). In this study, some of the participants stated that they did not feel confident enough to initiate babies on ART. To integrate ART initiation into the EPI and IMCI services would need not only training, but mentoring, support and supervision.

For tracking defaulters, the participants stated that ward-based outreach teams (WBOT) would help support reaching the community, especially in the rural areas (farms). However, these teams had not been rolled-out in their area. Patients from the farms depended on mobile clinics which sometimes did not reach them, which led to babies' defaulting immunisation and also HIV management. Linking facilities with these WBOT teams would support defaulter tracking, among other things.

Lambrechts et al (1999:592) found that incorporating IMCI into safe motherhood, for instance, would be cost effective and efficient. In this study, the participants in smaller facilities where mother and baby are seen in one room pointed out the efficiency and need for integration.

The participants indicated that the Road to Health Card, the Department's blue discharge forms and record-keeping in some cases limited the identification and follow-up of HIV-exposed babies. This was not attributed to lack of guidelines, but to poor records and data generation. This finding supports Huicho et al's (2005:17) finding on IMCI in Peru that there was a scarcity of data that could not be attributed entirely to programmes. One of the building blocks of health systems strengthening framework is information. This study found that poor record-keeping was a problem that impeded quality link between hospital and EPI and IMCI services.

Figure 4.1 illustrates missed opportunities for antibody testing of babies at 18 months. The PCR positivity is low. Using the number of babies who tested negative as a proxy, the number tested at 18 months should be as near as possible to that number. The participants stated that the Mpumalanga province policy mandates all facilities to conduct antibody testing to all babies at 18 months (universal testing-PITC). If PITC is practised closely, all or most 18 month-old EPI babies would be antibody tested for HIV. The participants added further that the capacity of nurses' limited antibody testing of all babies at 18 months, hence this task had been shifted to counsellors. This might lead to missed opportunities on babies who are not tested.

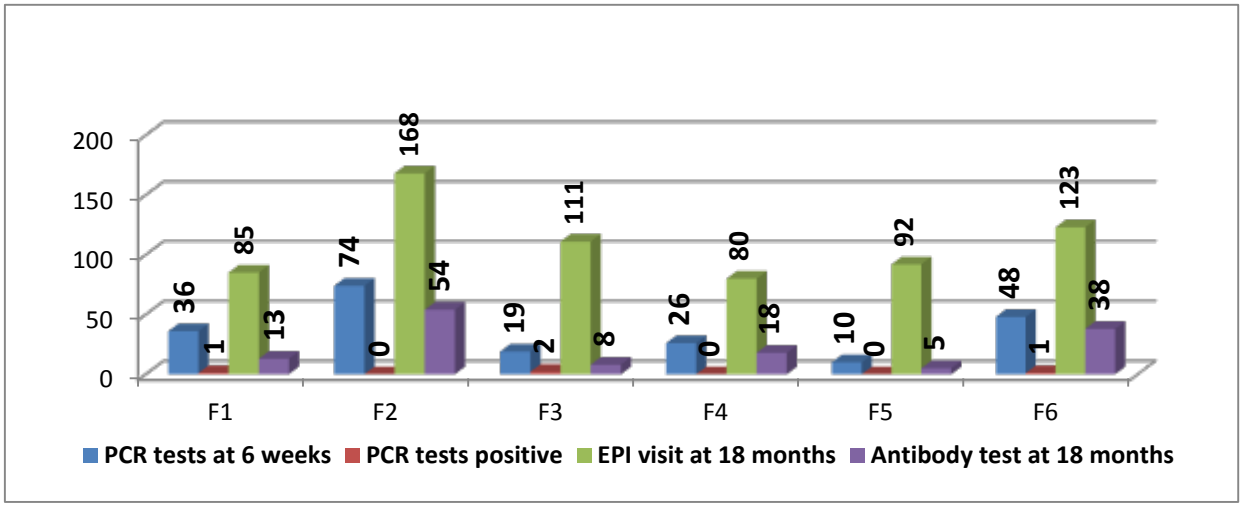

Figure 4.1 EPI and Paeds HIV test data July-December 2013 6 facilities – Steve Tshwete sub-district

(Source: Facility data − Monthly input sheet- July-December 2013)

Key: F stands for facility

The participants indicated that a number of missed babies were admitted to hospital with HIV-related illnesses and some died. Babatunde et al (2011:6) found that HIV-infected children need to be identified early so that they are linked with care and treatment early, to reduce morbidity and mortality.

Some of the participants indicated that the referral system is one way. There was no referral back from the facility referred to, which was usually the hospital. A study in Zimbabwe demonstrated that despite a strong multidimensional relationship between the programmes and the health systems, there is no consensus on how to strengthen health systems to cope with expanded programmes (Chevo & Bhatasara 2012:10). The findings in this study emphasise the need for clarity on the referral and defaulter tracking systems. The participants indicated that though they did consult the doctors at the hospital and transferred patients, they usually did not get feedback or back referral. Though they use community health care workers for tracking, some participants stated that they sometimes had to visit patients at home as there is no formal tracking system.

Some of the participants stated that they see mothers and babies separately in the postnatal services. One participant related the instance of a mother who had tested negative at ANC and at 10 months her baby tested positive PCR. This could have been

avoided if the mother had been tested postnatal. The participant maintained that this called for integration of the care of mother and child pair.

Another participant attributed some of the limitations in the programme implementation to stigma. She stated that some babies were missed because mothers were afraid to disclose their status to family. Again, some mothers attended facilities away from their homes as they were afraid of being stigmatised in clinics where they would be recognised. Buzdugan et al (2012:7) stress the need for a clear understanding of the barriers to paediatric testing, such as stigma and discrimination. Recommendations must be clear on how to tackle the problem of clients and patients with the perception that they will encounter stigma or be discrimination.

These findings indicated that both the EPI and IMCI programmes are utilised for follow-up and antibody testing of HEIs at 18 months in the facilities in Steve Tshwete sub-district of Nkangala district. In addition, the participants have a good understanding of the policies that guide the management of HEIs in the EPI and IMCI programmes. The participants, who work in these programmes, indicated that they perception is that there are limiting factors in the system that impact on efficient integration and utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months. To tackle and address these limitations requires a collaborative effort. Based on the findings, then, the researcher makes recommendations in this regard (see chapter 5).

4.5 CONCLUSION

This chapter presented the data analysis and interpretation, and discussed the findings. Participants' meaning and interpretation of experiences in follow-up and management of HIV-exposed babies up to 18 months were described through themes and categorised into strengths and weaknesses indicated by the participants. This chapter accurately communicated the lived experiences of the participants. Their perception of the factors within the systems that affect utilisation of EPI and IMCI for follow up of HEIs became the centre of the findings.

The discussion in this chapter centred on the main findings. The policies and guidelines for identification and follow-up of HEI were available for both EPI and IMCI services. Poor record-keeping and links between maternity and PHC facilities nevertheless led to

poor follow-up of HEIs. Lack of back referral affected the follow-up of babies. The lack of formal defaulter tracking systems resulted in loss to follow-up. Lack of integration of services and still perceived stigma influenced follow-up and management of these HEIs.

Chapter 5 briefly discusses the conclusions and limitations of the study, and makes recommendations for practice and further research.

CHAPTER 5

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter discusses the conclusions and limitations of the study and makes recommendations. The study sample consisted of four facility managers and twelve professional nurses working in six selected facilities in Steve Tshwete sub-district in Nkangala district, Mpumalanga province in South Africa. All the participants had more than one year's experience in EPI, IMCI.

The purpose of the study was to determine the meaning and interpretation of experiences by facility managers and nurses on utilisation of EPI and IMCI of HEIs at 18 months at the selected health facilities.

The researcher used the conclusions, based on the findings of the study, to answer the research question:

What is the meaning and interpretation of factors affecting utilisation of EPI and IMCI for follow up and HIV testing of HEI in the Steve Tshwete sub-district facilities as perceived by the nurses?

5.2 CONCLUSIONS ON OBJECTIVES

The objectives of the study were:

- To have an understanding of available services in the facilities selected for the study.
- Determine the meaning and interpretation as experienced by facility managers and nurses of the utilisation of EPI and IMCI programme for follow-up and antibody testing of HEIs at 18 months.
- Define the systems and factors influencing follow-up and management of HEIs as experienced by EPI and IMCI facility managers and nurses.

Based on the objectives, the researcher reached the following conclusions:

EPI and IMCI services are crucial in the follow-up and management of HEIs. All the participants were conversant with the policies that guide their management of these clients. The systems were, however, limiting. For example, the referral system lacked formal follow-up from the referring facilities and back referral from the receiving facilities. The defaulter tracking system was not formal and led to loss to follow-up and sometimes delayed treatment. Another limiting factor was that the ward-based outreach teams, comprising community health care workers reporting to a professional nurse, to take health to the community are not yet functional for support and task shifting.

Human resource issues also led to delayed treatment is. The participants indicated their limitations on taking bloods on smaller babies, leading them to refer them to a higher level. This needs intervention to make the EPI and IMCI services efficient for managing HEIs.

In some facilities, mother and baby were seen in the same room which enhanced follow up of HEIs efficient. In the facilities where they are treated in separate rooms, care was found to be inefficient. The findings indicate the need for integration of services for efficient follow-up and management of HEIs, using EPI and IMCI services, and the importance of mother-child pair for follow-up of HEIs.

In all the facilities, the participants stated that patients shopped around because they were afraid to attend nearer clinics where they are known. Thus there are still perceptions of stigma. Moreover, some patients were said to be afraid to disclose their status to relatives and other patients. Only one of the six facilities had an active support group of HIV-positive patients. Support groups are a crucial element which could remedy perceived stigma.

The findings emphasise that follow-up and management of HEIs depend on EPI and IMCI. Utilising these services by incorporating follow-up and management of HEI will reduce infant mortality and create the possibility of reaching the MDG4. This calls for a rigorous multidimensional intervention.

5.3 LIMITATIONS OF THE STUDY

This study was conducted in six targeted fixed health facilities in Steve Tshwete sub-district in Nkangala district of Mpumalanga province. The site was purposively selected and limited to Steve Tshwete sub-district, hence the findings cannot be generalised to the entire province or region. However, they can be locally generalised for the Steve Tshwete sub-district.

5.4 RECOMMENDATIONS FOR PRACTICE

Based on the findings, the researcher makes the following recommendations to promote utilisation of EPI and IMCI for follow-up and testing and management of HEI:

Provincial and District management

- Reorient the staff in the facilities on all relevant guidelines, including policy on referral between facilities and institutions, and make these available in all service points.
- Formalise a defaulter tracking system in the sub-district, district and province and communicate it to all facilities. Involve community structures.
- Implement and fast-track the ward-based outreach team (WBOT) strategy in Steve Tshwete.
- The DOH should consider provision of more mobile clinics for hard-to-reach populations and offer clinic services, including ANC. This could be done in partnership with private organisations and NGOs already doing similar work.

Nursing profession

- Intensify mentoring of NIMART trained nurses on management of infected babies and children, especially taking of bloods on these small children.
- Emphasise the importance of quality record-keeping. Run quality improvement projects in facilities.

The service

- Strengthen and roll-out the mother-child pair strategy of addressing maternal and child care service to services that are not practising it.
- Reorientate the Steve Tshwete community through the use of community stakeholders, like clinic committees, in campaigns and dialogues on the importance of compliance with given visit dates. Also in these campaigns address stigma and distribute information, education and communication (IEC) material.

5.5 RECOMMENDATIONS FOR FURTHER STUDY

Based on the findings of this study, the researcher makes the following recommendations for further research:

- Duplicate this study in other sub-districts and provinces prior to generalisation of the research findings.
- An exploration of social beliefs that influence follow-up, testing and management of HEI.
- An investigation of the knowledge level of the community health care workers, who are an important support system for care of HEIs, to address capacity for HCT in EPI and IMCI programmes.

5.6 CONCLUDING REMARKS

The importance of integrating the management of HEI into the EPI and IMCI cannot be overemphasised. The study found limitations and factors within the system that impact on efficient integration and utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months. Some of these are stigma and discrimination, poor record-keeping and data management, inefficient referral system, lack of a standard defaulter tracking system, and poor integration of HEIs management into EPI and IMCI.

Locally, the Department needs to be vigilant and use all available resources to manage HEI to meet the MDG 4 of prevention of infant mortality. The recommendations from the

study are not exhaustive, but a starting point for efficient utilisation of EPI and IMCI programmes for follow-up and antibody testing of HEIs at 18 months.

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Annexure A

University of South Africa Ethical Clearance Certificate

UNISA university of south africa

UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE

HSHDC/210/2013

Date: 18 September 2013 Student No: 465-891-5

Project Title: The utilization of the extended programme of immunization (EPI) and integrated management of childhood illnesses (IMC) services for follow up and uptake of 18 months HIV antibody test for HEI in 6 facilities in Nkangala District Mpumalanga Province.

Researcher: Anne Rose Nthabiseng Magagula

Degree: MA in Nursing Code: MPCHS94

Supervisor: Prof BL Dolamo
Qualification: D Cur
Joint Supervisor: -

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Prof L Roets
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE

Prof MM Moleki
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

Annexure B

A letter to the Department of Health to request authorisation to conduct the study

From: Nthabiseng Magagula

21 Wellwood Manor

Meyersdal

Johannesburg South

To: The Department of Health- Provincial Research Committee

Dear Sir/Madam,

Application for Clearance to Conduct a Research Project

I am a student at UNISA. My student number is: 4658914. My Portfolio was approved and I have been given permission to conduct a proposal for a dissertation that I will present to the University for my Master's degree in Nursing Science. The proposal will be presented to the University for Ethical Clearance.

While working for an NGO that was supporting amongst others Steve Tshwete sub district in Nkangala District, in one of the quarterly Programme review, it became evident that Pediatric case finding and management needs attention. I therefore decided that conducting an evidence finding study will open discussions on viewing Peds HIV management differently.

I am requesting permission to conduct the research study in Steve Tshwete Sub District of Nkangala District in Mpumalanga province. The proposed study is: ""The utilization of the EPI (Expanded Program on Immunization) and IMCI (Integrated Management of Childhood illnesses) services for follow up and uptake of 18 month HIV antibody test for HEI in 6 facilities in Steve Tshwete in Nkangala District, Mpumalanga province"

I would like to conduct the study in six health facilities namely Sr Mashiteng clinic, Kwazamokuhle clinic, Pullenshope clinic, Civic clinic, Hendrina clinic and Middelburg wellness clinic. The rationale for selecting these facilities is to have a mix of facilities through Steve Tshwete. Also these clinics have a high volume of patients.

I am writing to seek your permission to conduct this research. I intend to use the verified DHIS data from January 2013 to June 2013 to illustrate the situation in the facilities pertaining management of HIV exposed infants. For data on utilization of EPI and IMCI services, I intend using the registers utilised and using a short interview schedule that will be conducted by me with Professional Nurses working in the mentioned facilities. Their permission will be sought and confidentiality will be maintained. The results will be presented to the Department at a recommended forum. For systematic issues, the facility managers will also be interviewed.

The researcher will ensure that services are not disrupted during this study.

If you have any questions concerning the study, you can contact me on 0722105551 or my UNISA Health Sciences Department Supervisor, Professor Dolamo. Her details are as follows:

+27 12 4296213
E-mail: dolambl@unisa.ac.za

Your consideration will be highly appreciated.

Yours faithfully

AR Nthabiseng Magagula

0722105551.

Annexure C

A letter to the District Management informing them of the study in their clinics

From: Nthabiseng Magagula

21 Wellwood Manor
Meyersdal
Johannesburg South

To: The Department of Health- Nkangala District

Dear Sir/Madam

Application for Clearance to Conduct a Research Project

I am a student at UNISA. My student number is: 4658914. My Portfolio was approved and I have been given permission to conduct a proposal for a dissertation that I will present to the University for my Master's degree in Nursing Science. The proposal will be presented to the University for Ethical Clearance.

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I am requesting permission to conduct the research study in Steve Tshwete Sub District of Nkangala District in Mpumalanga province. The proposed study is: ""The utilization of the EPI (Expanded Program on Immunization) and IMCI (Integrated Management of Childhood illnesses) services for follow up and uptake of 18 month HIV antibody test for HEI in 6 facilities in Steve Tshwete in Nkangala District, Mpumalanga province"

I would like to conduct the study in six health facilities in the sub district. The rationale for selecting these facilities is to have a mix of facilities through Steve Tshwete. Also these clinics have a high volume of patients.

I am writing to seek your permission to conduct this research. I intend to use the verified DHIS data from January 2013 to June 2013 to illustrate the situation in the facilities pertaining management of HIV exposed infants. For data on utilization of EPI and IMCI services, I intend using the registers utilised and using a short interview schedule that will be conducted by me with Professional Nurses working in the mentioned facilities. Their permission will be sought and confidentiality will be maintained. The results will be presented to the Department at a recommended forum. For systematic issues, the facility managers will also be interviewed.

The researcher will ensure that services are not disrupted during this study.

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+27 12 4296213
E-mail: dolambl@unisa.ac.za

Your consideration will be highly appreciated.

Yours faithfully
AR Nthabiseng Magagula
0722105551

Annexure D

Research Ethics Clearance Certificate from

Mpumalanga Health Department

MPUMALANGA PROVINCIAL GOVERNMENT

Building No.3
No. 7 Government Boulevard
Riverside Park Extension 2
Nelspruit
1200
Republic of South Africa

Private Bag X 11285
Nelspruit, 1200
Tel: 013 766 3429
int: +27 13 766 3429
Fax: 013 766 3458
int: +27 13 766 3458

Department of Health

Litiko Letemphilo | Umnyango WezaMaphilo | Departement van Gesondheid

Enquiries: Themba Mulungo (013) 766 3511

22 January 2014

Ms. Ntabiseng Magagula
21 Welwood Manor
Metersdal
1448

Dear Ms. Ntabiseng Magagula

APPLICATION FOR RESEARCH & ETHICS APPROVAL: UTILIZATION OF EXPANDED PROGRAMME ON IMMUNISATION (EPI) AND INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) FOR TRACKING AND MANAGEMENT OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) EXPOSED BABIES

The Provincial Research and Ethics Committee has approved your research proposal in the latest format that you sent.

Kindly ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

Kind regards

MR. MOLEFE MACHABA
RESEARCH AND EPIDEMIOLOGY

22/01/2014
DATE

MPUMALANGA PROVINCE
DEPARTMENT OF HEALTH
PLANNING & INFORMATION
2014 -01- 22
PRIVATE BAG X 11285
NELSPRUIT 1200

We care. Do you?
Siyanakekela

MPUMALANGA
A Pioneering Spirit

Annexure E

Informed consent form in English

CONSENT FORM TO BE SIGNED BY PARTICIPANTS

Name of Study: “utilization of expanded programme on immunisation (EPI) and integrated management of childhood illnesses (IMCI) for tracking and management of Human Immunodeficiency Virus (HIV) exposed babies**”** in six facilities in Steve Tshwete sub District in Nkangala district of Mpumalanga province in South Africa.

The informed consent is for facility managers and professional nurses working in the six selected facilities in Steve Tshwete of Nkangala district of Mpumalanga province rendering EPI and IMCI services.

Main investigator: Ms Anne Rose Nthabiseng Magagula

This informed consent contains an information sheet which provides information related to the study (e.g., purpose, method, procedures, risks and benefits, etc.) and the nature of the involvement of prospective participants. Its second part is a certificate of consent, which should be signed by eligible participants who participate to the study as well as by a witness and by the researcher.

PART 1

Dear Participant

My name is Ms Anne Rose Nthabiseng Magagula pursuing my Master of Arts Degree in Nursing with the University South Africa (UNISA). The purpose of this letter is to request your permission to participate in the study mentioned above. The study is a requirement in fulfilment of my studies. The results are also expected to add vital information on the factors within the health system in the selected facilities that influence the utilisation of the EPI and IMCI programmes for follow up and management of HIV exposed babies at 18 months.

Please take note of the following before you sign the consent:

a) This study is not part of your daily duties in the facility.

b) Your participation to this study is voluntary. You can refuse to participate. You can also decide to withdraw at any time, even after you have signed the consent form.

c) The results of this study will be used for scientific purpose and may be published.

d) You have been selected by virtue of you working in the selected facilities.

To clarify what I am going to do during the study:

I am going to ask you questions related to the services you render. The information will be kept confidential and no one will expose information received from every participant to people who should not see them. Confidentiality will also be maintained if the results of this study are published or communicated to another person or organization. During the study and thereafter, only I, my supervisor and the UNISA Ethics Committee will have access to the records of this study.

To clarify what I will do with the information you will give to me:

After all participants are interviewed, all information received will be put together and analysed. If this study and those that will follow yield obvious results, these findings will be utilized to improve the management HIV exposed babies. It is beneficial for you to be part of this study as the results of this study also belong to you and you will need to learn more about what was discovered at a later stage. The results of this study will be shared with you.

You may now ask any question you want about any aspect of the study you have not understood. You may sign the certificate of consent if you accept to participate to the study only if you feel you have received all information you needed for getting a better understanding of this research.

If you have any further queries related to this study in the future, my contact details are as follows:

Ms Anne Rose Nthabiseng Magagula

Phone Number: 0722105551

Alternative number: 0826166771

PART 11: CONSENT FORM TO BE SIGNED BY PARTICIPANTS:

Name of Study: “utilization of expanded programme on immunisation and integrated management of childhood illnesses for tracking and management of HIV exposed babies**”** in six facilities in Steve Tshwete sub District in Nkangala District of Mpumalanga province in South Africa.

I have read the information on the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I understand that participation in this study is completely voluntary and that I may withdraw from it at any time and without supplying reasons. I know that this Study has been approved by the UNISA Ethics Committee and Nkangala district of the Department of Health. I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Study.

....

Name of participant Signature of participant

…… …….. ……

Place Date Witness

Statement by the Researcher

I provided written information regarding this study.

I agree to answer any future questions concerning the study

I will adhere to the approved protocol.

....

Name of Researcher Signature

…… ……..

Place Date

Annexure F

Interview schedule

INTERVIEW SCHEDULE: FACILITY MANAGER, EPI AND IMCI NURSES

The purpose of the study is to get an in depth information on factors that influence the utilization of Extended Programme of Immunisation (EPI) and Integrated Management of Childhood Illnesses (IMCI) services for tracking and management of Human Immunodeficiency Virus (HIV) exposed babies up to the age of 18 months in six facilities in Steve Tshwete sub District in Nkangala district of Mpumalanga province in South Africa. The facility manager and the professional nurse working in these facilities will be interviewed by the researcher. The information will be analysed to categorise the emerging themes to have an in depth understanding of the phenomenon of management of HIV exposed infants.

Health facility name[redacted]

Sub-district.....Steve Tshwete.....

District. .Nkangala.....

Province....Mpumalanga.....

Date of interview...26 February 2014

SECTION A: For the Facility Manager

SYSTEMS: Available=1 Not available=0 Not applicable= x

Specific Health Center/Clinic Information (indicate services available at health facility)			
Service		Check if available	Days/Hours of Operation
1	Antenatal Consultation	✓	2 days- drop in seen
4	PMTCT Services	✓	2 days-drop in seen
5	Post-partum consultation	✓	2 days –drop in seen
7	Maternity (MOU)	No	Off site- Hospital
8	HIV Care and Treatment (ART clinic)	✓	Including children
9	HCT (including PICT)	✓	Counsellors daily
10	Laboratory	✓	NHLS daily
11	TB Treatment	✓	1 day- drop in seen
12	Immunizations	✓	2 days-drop in seen
13	Exposed Infant Follow-up	✓	3-6 days, 6/52 then monthly
14	Child Survival Clinic (IMCI)	✓	Daily
15	Other (Please list)	See below	

Facility Manager verbatim: "*PCR is done at 6 weeks and Bactrim given. Turnaround time is about 4-6 weeks. If positive refer to hospital for initiation for initiation… we do not*

initiate small babies... we cannot take blood from them. The doctor in OPD supports us, but sometimes we initiate and doctor helps with taking blood… at 18 months we do antibody testing… before then when they stop breastfeeding we repeat PCR. Mothers from farms default if mobile did not come to the point... I wish we could have more mobiles or maybe if the team … outreach was working it would be better.

SECTION B: FOR EPI and IMCI NURSES

Grand tour question: "Can you please give an overview of patient flow of HEI in this facility from reception to exit"?

"Baby is seen at 3 to 6 days after delivery… we look for jaundice and check breast and feeding…we check road to health card for status…cord, jaundice…weight too…sometimes the page 7 with status is torn off then we know something is fishy…Mhh.. they need health education…we do PCR at 6 weeks… if positive refer to hospital, for initiation.. but we rarely have positive…baby visit monthly if positive otherwise come for immunisation accordingly…If mother on ART and adhering at 6 weeks we stop Nevirapine, otherwise we continue…at 18 months we do antibody testing… consent form is sometimes a problem if bought by care giver…I think stigma is still a problem…

I have a painful story of a police lady whose baby became positive because she mixfed her baby...the painful thing is that she herself said that knew, she is an educated woman, but was afraid as her family did not know that she was positive… I think we need more health education (EPI Nurse)

Question 1-3 narrative

Question 4-6- Yes=1 Knowledge of = 1 No=0

1. Which services are provided for HIV exposed infants	Well baby clinic Sick babies in IMCI		
2. How are HIV exposed infants identified and followed up?	Road to health card Mothers report they are on treatment If baby is on Nevirapine		
3. How are HIV infected infants referred for HAART?	Small babies are referred to hospital for doctors initiation using the Department referral form Bigger children are initiated ion site in the ARV site. They are taken to the service		
4. Is there a protocol for testing HIV exposed infants?	**Yes**	No	If yes describe the protocol - PMTCT 2010 protocol – PCR at 6/52, PCR six weeks after cessation of breastfeeding and antibody testing at 18/12 - Also at 18/12 - Universal testing of the Mpumalanga Department of Health

5. Are there regular HIV exposed follow up visits?	**Yes**	No	If yes what services are provided to the infant or mother at that visit? - All HIV exposed babies are seen monthly or at any time when they have a problem. - If status is not known, breastfeeding, mother is tested, if positive, baby is done PCR. If mother is negative, mother is tested every 12 months.
6. Are the HIV screening activities integrated into IMCI, EPI	**Yes**	No	Describe: All babies whose mothers test positive and are breastfeeding, have PCR test at 6 weeks and PCR six weeks post cessation of breastfeeding. At or after 18 months HIV antibody testing is done.

Data from registers used in the consultation room

Indicator	Month 1(M1)	M2	M3	M4	M5	M6
PHC head count under 5	340	429	468	489	364	257
Number of PCR infants tested at 6 weeks	2	4	2	6	5	0
Number of PCR infants tested after 6 weeks	0	3	0	1-post weaning	0	0
Number PCR positive	0	0	0	1	0	0
Number initiated/referred for ART	0	0	0	-	0	0
Number of Antibody test infants 18 months	0	0	0	5	3	0
Number of Antibody test after 18 months	0	0	0	0	0	0
Number EPI at 18 months (second measles)	32	19	11	17	19	13
Number of Antibody test of babies at 18 months or older positive	-	-		-	-	-
Number initiated/referred for ART	-	-		-	-	

Any further comments:
"More community education is needed so that they stop shopping around. There needs to be more support for farm people to get more visits" (Facility manager)

Thank you for your participation.

Annexure A

University of South Africa Ethical Clearance Certificate

UNISA university of south africa

UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE

HSHDC/210/2013

Date: 18 September 2013 Student No: 465-891-5

Project Title: The utilization of the extended programme of immunization (EPI) and integrated management of childhood illnesses (IMC) services for follow up and uptake of 18 months HIV antibody test for HEI in 6 facilities in Nkangala District Mpumalanga Province.

Researcher: Anne Rose Nthabiseng Magagula

Degree: MA in Nursing Code: MPCHS94

Supervisor: Prof BL Dolamo
Qualification: D Cur
Joint Supervisor: -

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Prof L Roets
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE

Prof MM Moleki
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

Annexure B

A letter to the Department of Health to request authorisation to conduct the study

From: Nthabiseng Magagula

21 Wellwood Manor

Meyersdal

Johannesburg South

To: The Department of Health- Provincial Research Committee

Dear Sir/Madam,

Application for Clearance to Conduct a Research Project

I am a student at UNISA. My student number is: 4658914. My Portfolio was approved and I have been given permission to conduct a proposal for a dissertation that I will present to the University for my Master's degree in Nursing Science. The proposal will be presented to the University for Ethical Clearance.

While working for an NGO that was supporting amongst others Steve Tshwete sub district in Nkangala District, in one of the quarterly Programme review, it became evident that Pediatric case finding and management needs attention. I therefore decided that conducting an evidence finding study will open discussions on viewing Peds HIV management differently.

I am requesting permission to conduct the research study in Steve Tshwete Sub District of Nkangala District in Mpumalanga province. The proposed study is: ""The utilization of the EPI (Expanded Program on Immunization) and IMCI (Integrated Management of Childhood illnesses) services for follow up and uptake of 18 month HIV antibody test for HEI in 6 facilities in Steve Tshwete in Nkangala District, Mpumalanga province"

I would like to conduct the study in six health facilities namely Sr Mashiteng clinic, Kwazamokuhle clinic, Pullenshope clinic, Civic clinic, Hendrina clinic and Middelburg wellness clinic. The rationale for selecting these facilities is to have a mix of facilities through Steve Tshwete. Also these clinics have a high volume of patients.

I am writing to seek your permission to conduct this research. I intend to use the verified DHIS data from January 2013 to June 2013 to illustrate the situation in the facilities pertaining management of HIV exposed infants. For data on utilization of EPI and IMCI services, I intend using the registers utilised and using a short interview schedule that will be conducted by me with Professional Nurses working in the mentioned facilities. Their permission will be sought and confidentiality will be maintained. The results will be presented to the Department at a recommended forum. For systematic issues, the facility managers will also be interviewed.

The researcher will ensure that services are not disrupted during this study.

If you have any questions concerning the study, you can contact me on 0722105551 or my UNISA Health Sciences Department Supervisor, Professor Dolamo. Her details are as follows:

+27 12 4296213
E-mail: dolambl@unisa.ac.za

Your consideration will be highly appreciated.

Yours faithfully,

AR Nthabiseng Magagula

0722105551.

Annexure C

A letter to the District Management informing them of the study in their clinics

From: Nthabiseng Magagula
21 Wellwood Manor
Meyersdal
Johannesburg South

To: The Department of Health- Nkangala District

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I am requesting permission to conduct the research study in Steve Tshwete Sub District of Nkangala District in Mpumalanga province. The proposed study is: ""The utilization of the EPI (Expanded Program on Immunization) and IMCI (Integrated Management of Childhood illnesses) services for follow up and uptake of 18 month HIV antibody test for HEI in 6 facilities in Steve Tshwete in Nkangala District, Mpumalanga province"

I would like to conduct the study in six health facilities in the sub district. The rationale for selecting these facilities is to have a mix of facilities through Steve Tshwete. Also these clinics have a high volume of patients.

I am writing to seek your permission to conduct this research. I intend to use the verified DHIS data from January 2013 to June 2013 to illustrate the situation in the facilities pertaining management of HIV exposed infants. For data on utilization of EPI and IMCI services, I intend using the registers utilised and using a short interview schedule that will be conducted by me with Professional Nurses working in the mentioned facilities. Their permission will be sought and confidentiality will be maintained. The results will be presented to the Department at a recommended forum. For systematic issues, the facility managers will also be interviewed.

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+27 12 4296213
E-mail: dolambl@unisa.ac.za

Your consideration will be highly appreciated.
Yours faithfully,
AR Nthabiseng Magagula
0722105551.

Annexure D

Research Ethics Clearance Certificate from

Mpumalange Health Department

MPUMALANGA PROVINCIAL GOVERNMENT

Building No.3
No. 7 Government Boulevard
Riverside Park Extension 2
Nelspruit
1200
Republic of South Africa

Private Bag X 11285
Nelspruit, 1200
Tel: 013 766 3429
int: +27 13 766 3429
Fax: 013 766 3458
int: +27 13 766 3458

Department of Health

Litiko Letemphilo | Umnyango WezaMaphilo | Departement van Gesondheid

Enquiries: Themba Mulungo (013) 766 3511

22 January 2014

Ms. Ntabiseng Magagula
21 Welwood Manor
Metersdal
1448

Dear Ms. Ntabiseng Magagula

APPLICATION FOR RESEARCH & ETHICS APPROVAL: UTILIZATION OF EXPANDED PROGRAMME ON IMMUNISATION (EPI) AND INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (IMCI) FOR TRACKING AND MANAGEMENT OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) EXPOSED BABIES

The Provincial Research and Ethics Committee has approved your research proposal in the latest format that you sent.

Kindly ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

Kind regards

MR. MOLEFE MACHABA
RESEARCH AND EPIDEMIOLOGY

MPUMALANGA PROVINCE
DEPARTMENT OF HEALTH
PLANNING & INFORMATION
2014 -01- 22
PRIVATE BAG X 11285
NELSPRUIT 1200

22/01/2014
DATE

We care. Do you?
Siyanakekela

MPUMALANGA
A Pioneering Spirit

Annexure E

Informed consent form in English

CONSENT FORM TO BE SIGNED BY PARTICIPANTS

Name of Study: "utilization of expanded programme on immunisation (EPI) and integrated management of childhood illnesses (IMCI) for tracking and management of Human Immunodeficiency Virus (HIV) exposed babies**"** in six facilities in Steve Tshwete sub District in Nkangala district of Mpumalanga province in South Africa.

The informed consent is for facility managers and professional nurses working in the six selected facilities in Steve Tshwete of Nkangala district of Mpumalanga province rendering EPI and IMCI services.

Main investigator: Ms Anne Rose Nthabiseng Magagula

This informed consent contains an information sheet which provides information related to the study (e.g., purpose, method, procedures, risks and benefits, etc) and the nature of the involvement of prospective participants. Its second part is a certificate of consent, which should be signed by eligible participants who participate to the study as well as by a witness and by the researcher.

PART 1.

Dear participant,

My name is Ms Anne Rose Nthabiseng Magagula pursuing my Master of Arts Degree in Nursing with the University South Africa (UNISA). The purpose of this letter is to request your permission to participate in the study mentioned above. The study is a requirement in fulfillment of my studies. The results are also expected to add vital information on the factors within the health system in the selected facilities that influence the utilisation of the EPI and IMCI programmes for follow up and management of HIV exposed babies at 18 months.

Please take note of the following before you sign the consent:

a) This study is not part of your daily duties in the facility.

b) Your participation to this study is voluntary. You can refuse to participate. You can also decide to withdraw at any time, even after you have signed the consent form.

c) The results of this study will be used for scientific purpose and may be published.

d) You have been selected by virtue of you working in the selected facilities.

To clarify what I am going to do during the study:

I am going to ask you questions related to the services you render. The information will be kept confidential and no one will expose information received from every participant to people who should not see them. Confidentiality will also be maintained if the results of this study are published or communicated to another person or organization. During the study and thereafter, only I, my supervisor and the UNISA Ethics Committee will have access to the records of this study.

To clarify what I will do with the information you will give to me:

After all participants are interviewed, all information received will be put together and analysed. If this study and those that will follow yield obvious results, these findings will be utilized to improve the management HIV exposed babies. It is beneficial for you to be part of this study as the results of this study also belong to you and you will need to learn more about what was discovered at a later stage. The results of this study will be shared with you.

You may now ask any question you want about any aspect of the study you have not understood. You may sign the certificate of consent if you accept to participate to the study only if you feel you have received all information you needed for getting a better understanding of this research.

If you have any further queries related to this study in the future, my contact details are as follows:

Ms Anne Rose Nthabiseng Magagula

Phone Number: 0722105551

Alternative number: 0826166771

PART 11: CONSENT FORM TO BE SIGNED BY PARTICIPANTS:

Name of Study: “utilization of expanded programme on immunisation and integrated management of childhood illnesses for tracking and management of HIV exposed

babies**”** in six facilities in Steve Tshwete sub District in Nkangala District of Mpumalanga province in South Africa.

I have read the information on the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I understand that participation in this study is completely voluntary and that I may withdraw from it at any time and without supplying reasons. I know that this Study has been approved by the UNISA Ethics Committee and Nkangala district of the Department of Health. I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Study.

....

Name of participant Signature of participant

…… …….. ……

Place Date Witness

Statement by the Researcher

I provided written information regarding this study.

I agree to answer any future questions concerning the study

I will adhere to the approved protocol.

....

Name of Researcher Signature

…….…… ……..

Place Date

Annexure F

Interview schedule

INTERVIEW SCHEDULE: FACILITY MANAGER, EPI AND IMCI NURSES

The purpose of the study is to get an in depth information on factors that influence the utilization of Extended Programme of Immunisation (EPI) and Integrated Management of Childhood Illnesses (IMCI) services for tracking and management of Human Immunodeficiency Virus (HIV) exposed babiesup to the age of 18 monthsin six facilities in Steve Tshwete sub District in Nkangala district of Mpumalanga province in South Africa. The facility manager and the professional nurse working in these facilities will be interviewed by the researcher. The information will be analysed to categorise the emerging themes to have an in depth understanding of the phenomenon of management of HIV exposed infants.

Health facility name[redacted]

Sub-district.....Steve Tshwete .....

District. .Nkangala.....

Province....Mpumalanga.....

Date of interview...26 February 2014

SECTION A: For the Facility Manager

SYSTEMS: Available=1 Not available=0 Not applicable= x

Specific Health Center/Clinic Information (indicate services available at health facility)			
Service		Check if available	Days/Hours of Operation
1	Antenatal Consultation	✓	2 days- drop in seen
4	PMTCT Services	✓	2 days-drop in seen
5	Post-partum consultation	✓	2 days –drop in seen
7	Maternity (MOU)	No	Off site- Hospital
8	HIV Care and Treatment (ART clinic)	✓	Including children
9	HCT (including PICT)	✓	Counsellors daily
10	Laboratory	✓	NHLS daily
11	TB Treatment	✓	1 day- drop in seen
12	Immunizations	✓	2 days-drop in seen
13	Exposed Infant Follow-up	✓	3-6 days, 6/52 then monthly
14	Child Survival Clinic (IMCI)	✓	Daily
15	Other (Please list)	See below	

Facility Manager verbatim: "*PCR is done at 6 weeks and Bactrim given. Turnaround time is about 4-6 weeks. If positive refer to hospital for initiation for initiation… we do not*

initiate small babies... we cannot take blood from them. The doctor in OPD supports us, but sometimes we initiate and doctor helps with taking blood… at 18 months we do antibody testing… before then when they stop breastfeeding we repeat PCR. Mothers from farms default if mobile did not come to the point... I wish we could have more mobiles or maybe if the team … outreach was working it would be better.

SECTION B: FOR EPI and IMCI NURSES

Grand tour question: "Can you please give an overview of patient flow of HEI in this facility from reception to exit"?

"Baby is seen at 3 to 6 days after delivery… we look for jaundice and check breast and feeding…we check road to health card for status…cord, jaundice…weight too…sometimes the page 7 with status is torn off then we know something is fishy…Mhh.. they need health education…we do PCR at 6 weeks… if positive refer to hospital, for initiation.. but we rarely have positive…baby visit monthly if positive otherwise come for immunisation accordingly…If mother on ART and adhering at 6 weeks we stop Nevirapine, otherwise we continue…at 18 months we do antibody testing… consent form is sometimes a problem if bought by care giver…I think stigma is still a problem…

I have a painful story of a police lady whose baby became positive because she mixfed her baby...the painful thing is that she herself said that knew, she is an educated woman, but was afraid as her family did not know that she was positive… I think we need more health education (EPI Nurse)

Question 1-3 narrative

Question 4-6- Yes=1 Knowledge of = 1 No=0

1. Which services are provided for HIV exposed infants	Well baby clinic Sick babies in IMCI		
2. How are HIV exposed infants identified and followed up?	Road to health card Mothers report they are on treatment If baby is on Nevirapine		
3. How are HIV infected infants referred for HAART?	Small babies are referred to hospital for doctors initiation using the Department referral form Bigger children are initiated ion site in the ARV site. They are taken to the service		
4. Is there a protocol for testing HIV exposed infants?	**Yes**	No	If yes describe the protocol - PMTCT 2010 protocol – PCR at 6/52, PCR six weeks after cessation of breastfeeding and antibody testing at 18/12 - Also at 18/12 - Universal testing of the Mpumalanga Department of Health

5. Are there regular HIV exposed follow up visits?	**Yes**	No	If yes what services are provided to the infant or mother at that visit? - All HIV exposed babies are seen monthly or at any time when they have a problem. - If status is not known, breastfeeding, mother is tested, if positive, baby is done PCR. If mother is negative, mother is tested every 12 months.
6. Are the HIV screening activities integrated into IMCI, EPI	**Yes**	No	Describe: All babies whose mothers test positive and are breastfeeding, have PCR test at 6 weeks and PCR six weeks post cessation of breastfeeding. At or after 18 months HIV antibody testing is done.

Data from registers used in the consultation room

Indicator	Month 1(M1)	M2	M3	M4	M5	M6
PHC head count under 5	340	429	468	489	364	257
Number of PCR infants tested at 6 weeks	2	4	2	6	5	0
Number of PCR infants tested after 6 weeks	0	3	0	1-post weaning	0	0
Number PCR positive	0	0	0	1	0	0
Number initiated/referred for ART	0	0	0	-	0	0
Number of Antibody test infants 18 months	0	0	0	5	3	0
Number of Antibody test after 18 months	0	0	0	0	0	0
Number EPI at 18 months (second measles)	32	19	11	17	19	13
Number of Antibody test of babies at 18 months or older positive	-	-		-	-	-
Number initiated/referred for ART	-	-		-	-	

Any further comments:
"More community education is needed so that they stop shopping around. There needs to be more support for farm people to get more visits" (Facility manager)

Thank you for your participation.